# APPENDIX I

Human Health Risk Assessment Results

# APPENDIX I-1

Inhalation Results – Normal Operations (Project Alone Case) – 140,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 6.1E-04 | 6.1E-04 | - | 0.0027 | 0.0027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0011 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.044 | 0.044 | - | 0.023 | 0.023 |
| Hydrogen Fluoride (HF)[ac] | - | 0.013 | 0.013 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.11 | 0.27 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.011 | 0.011 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.018 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0044 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.018 | 0.047 | 0.070 | 0.0064 | 0.077 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.0E-04 | 0.0017 | 1.2E-04 | 5.5E-06 | 1.3E-04 |
| Arsenic | 0.022 | 7.6E-04 | 0.023 | 0.0060 | 7.0E-05 | 0.0061 |
| Barium | 0.0040 | 1.5E-04 | 0.0041 | 8.2E-04 | 1.1E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0060 | 0.043 | 0.030 | 0.0017 | 0.032 |
| Boron[c] | 0.0037 | 0.0011 | 0.0048 | - | - | - |
| Cadmium | 0.015 | 0.025 | 0.040 | 0.024 | 0.014 | 0.038 |
| Chromium (hexavalent)[ac] | - | 0.0012 | 0.0012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 8.2E-04 | 0.0075 | - | - | - |
| Cobalt | 0.0074 | 0.011 | 0.018 | 0.0060 | 0.0029 | 0.0089 |
| Lead | 0.0081 | 0.012 | 0.020 | 0.0100 | 0.0050 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0091 | 0.0091 | - | 3.8E-04 | 3.8E-04 |
| Nickel[c] | 0.0018 | 0.0053 | 0.0071 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.7E-05 | 0.0038 | 3.0E-04 | 2.4E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.012 | 0.020 | 3.4E-04 | 1.7E-04 | 5.1E-04 |
| Thallium[c] | 0.0073 | 0.014 | 0.021 | - | - | - |
| Tin | 3.7E-04 | 3.2E-04 | 6.9E-04 | 3.0E-04 | 8.8E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 8.4E-04 | 0.0084 | 0.0015 | 5.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0014 | 0.0035 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.3E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.0E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.7E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.0E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.5E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.9E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 6.0E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.6E-04 | 0.0013 | 2.8E-04 | 2.4E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.4E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.0E-08 | 7.0E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.5E-05 | 6.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.9E-08 | 4.9E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-05 | 4.4E-04 | 4.4E-05 | 5.2E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.7E-08 | 2.8E-04 | 1.1E-04 | 6.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.2E-11 | 0.0035 |
| Benzene | 0.17 | 6.6E-05 | 0.17 | 0.41 | 5.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0046 | 0.0067 | - | - | - |
| Bromoform | 0.0014 | 5.0E-04 | 0.0019 | 5.4E-04 | 6.3E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 1.1E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-06 | 0.014 | 0.31 | 9.0E-06 | 0.31 |
| Chloroform | 0.0055 | 1.8E-06 | 0.0055 | 0.23 | 2.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.8E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.6E-06 | 2.2E-04 | 0.0058 | 4.0E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.2E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-05 | 0.0032 | 0.0017 | 6.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0011 | 0.55 | 0.052 | 3.7E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.9E-07 | 7.2E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.0E-07 | 6.0E-05 | 0.0014 | 7.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.9E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.8E-08 | 3.1E-05 | 1.9E-05 | 1.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.3E-07 | 0.0024 | 0.045 | 2.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 7.9E-07 | 1.5E-06 | 0.0059 | 0.0022 | 0.0081 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-05 | 5.4E-04 | 0.0066 | 4.1E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 7.1E-04 | 0.0055 | 0.0083 | 4.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 8.3E-04 | 0.0087 | 0.0079 | 4.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.23 | 0.56 | 1.1 | 0.098 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.1E-04 | 0.026 | 0.55 | 1.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 3.1E-04 | 3.1E-04 | - | 1.0E-03 | 1.0E-03 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.4E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.022 | 0.022 | - | 0.0083 | 0.0083 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0065 | 0.0065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.055 | 0.22 | 0.29 | 0.011 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0069 | 0.0069 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.011 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0029 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0092 | 0.037 | 0.070 | 0.0023 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-05 | 0.0016 | 1.2E-04 | 2.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.8E-04 | 0.022 | 0.0060 | 2.6E-05 | 0.0061 |
| Barium | 0.0040 | 7.7E-05 | 0.0041 | 8.2E-04 | 3.9E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0030 | 0.040 | 0.030 | 6.1E-04 | 0.031 |
| Boron[c] | 0.0037 | 5.5E-04 | 0.0043 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.027 | 0.024 | 0.0052 | 0.029 |
| Chromium (hexavalent)[ac] | - | 5.8E-04 | 5.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.1E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0052 | 0.013 | 0.0060 | 0.0011 | 0.0071 |
| Lead | 0.0081 | 0.0060 | 0.014 | 0.0100 | 0.0018 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0045 | 0.0045 | - | 1.4E-04 | 1.4E-04 |
| Nickel[c] | 0.0018 | 0.0026 | 0.0044 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.3E-05 | 0.0037 | 3.0E-04 | 8.9E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0061 | 0.014 | 3.4E-04 | 6.2E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0071 | 0.014 | - | - | - |
| Tin | 3.7E-04 | 1.6E-04 | 5.3E-04 | 3.0E-04 | 3.2E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 4.2E-04 | 0.0080 | 0.0015 | 2.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.2E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.8E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.3E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.7E-07 | 5.7E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Schools**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.2E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.3E-04 | 0.0012 | 2.8E-04 | 8.9E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-08 | 3.5E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-08 | 2.4E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-06 | 4.3E-04 | 4.4E-05 | 1.9E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-08 | 2.8E-04 | 1.1E-04 | 2.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.7E-11 | 0.0035 |
| Benzene | 0.17 | 3.3E-05 | 0.17 | 0.41 | 2.0E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0023 | 0.0044 | - | - | - |
| Bromoform | 0.0014 | 2.5E-04 | 0.0017 | 5.4E-04 | 2.3E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 5.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.0E-07 | 0.014 | 0.31 | 3.3E-06 | 0.31 |
| Chloroform | 0.0055 | 9.2E-07 | 0.0055 | 0.23 | 9.4E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-06 | 2.2E-04 | 0.0058 | 1.5E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.8E-05 | 0.0032 | 0.0017 | 2.5E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.7E-04 | 0.55 | 0.052 | 1.3E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-08 | 6.0E-05 | 0.0014 | 2.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-08 | 3.1E-05 | 1.9E-05 | 4.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-07 | 0.0024 | 0.045 | 7.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.3E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.9E-07 | 1.1E-06 | 0.0059 | 8.0E-04 | 0.0067 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-06 | 5.4E-04 | 0.0066 | 1.5E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 3.5E-04 | 0.0052 | 0.0083 | 1.7E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.1E-04 | 0.0083 | 0.0079 | 1.5E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.44 | 1.1 | 0.041 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.0E-04 | 0.026 | 0.55 | 4.4E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 3.2E-04 | 3.2E-04 | - | 9.8E-04 | 9.8E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.6E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.022 | 0.022 | - | 0.0082 | 0.0082 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0067 | 0.0067 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.057 | 0.22 | 0.29 | 0.011 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0073 | 0.0073 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.012 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0030 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0095 | 0.038 | 0.070 | 0.0023 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.0E-04 | 0.0016 | 1.2E-04 | 2.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.9E-04 | 0.022 | 0.0060 | 2.5E-05 | 0.0061 |
| Barium | 0.0040 | 7.9E-05 | 0.0041 | 8.2E-04 | 3.8E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0031 | 0.040 | 0.030 | 6.0E-04 | 0.031 |
| Boron[c] | 0.0037 | 5.7E-04 | 0.0043 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.028 | 0.024 | 0.0051 | 0.029 |
| Chromium (hexavalent)[ac] | - | 6.0E-04 | 6.0E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.2E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0054 | 0.013 | 0.0060 | 0.0010 | 0.0071 |
| Lead | 0.0081 | 0.0062 | 0.014 | 0.0100 | 0.0018 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0047 | 0.0047 | - | 1.4E-04 | 1.4E-04 |
| Nickel[c] | 0.0018 | 0.0027 | 0.0045 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.5E-05 | 0.0037 | 3.0E-04 | 8.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0063 | 0.015 | 3.4E-04 | 6.1E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0073 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.6E-04 | 5.3E-04 | 3.0E-04 | 3.2E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 4.3E-04 | 0.0080 | 0.0015 | 2.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.5E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.7E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.6E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.1E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.2E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.8E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.6E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.5E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.2E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.4E-04 | 0.0012 | 2.8E-04 | 8.7E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.6E-08 | 3.6E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-08 | 2.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.7E-06 | 4.3E-04 | 4.4E-05 | 1.9E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-08 | 2.8E-04 | 1.1E-04 | 2.3E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.6E-11 | 0.0035 |
| Benzene | 0.17 | 3.4E-05 | 0.17 | 0.41 | 1.9E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0024 | 0.0045 | - | - | - |
| Bromoform | 0.0014 | 2.6E-04 | 0.0017 | 5.4E-04 | 2.3E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 5.6E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.2E-07 | 0.014 | 0.31 | 3.2E-06 | 0.31 |
| Chloroform | 0.0055 | 9.5E-07 | 0.0055 | 0.23 | 9.2E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.0E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-06 | 2.2E-04 | 0.0058 | 1.4E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-05 | 0.0032 | 0.0017 | 2.4E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.9E-04 | 0.55 | 0.052 | 1.3E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.3E-08 | 6.0E-05 | 0.0014 | 2.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-08 | 3.1E-05 | 1.9E-05 | 4.3E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-07 | 0.0024 | 0.045 | 7.4E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.2E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-07 | 1.1E-06 | 0.0059 | 7.9E-04 | 0.0067 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.1E-06 | 5.4E-04 | 0.0066 | 1.5E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 3.7E-04 | 0.0052 | 0.0083 | 1.6E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.3E-04 | 0.0083 | 0.0079 | 1.5E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.45 | 1.1 | 0.041 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 4.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 5.1E-04 | 5.1E-04 | - | 0.0021 | 0.0021 |
| Carbon Monoxide (CO)[c] | 0.069 | 9.1E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.036 | 0.036 | - | 0.018 | 0.018 |
| Hydrogen Fluoride (HF)[ac] | - | 0.011 | 0.011 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.024 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.012 | 0.012 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.020 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0050 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.015 | 0.044 | 0.070 | 0.0050 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.7E-04 | 0.0016 | 1.2E-04 | 4.3E-06 | 1.3E-04 |
| Arsenic | 0.022 | 6.4E-04 | 0.023 | 0.0060 | 5.5E-05 | 0.0061 |
| Barium | 0.0040 | 1.3E-04 | 0.0041 | 8.2E-04 | 8.3E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0051 | 0.042 | 0.030 | 0.0013 | 0.032 |
| Boron[c] | 0.0037 | 9.3E-04 | 0.0046 | - | - | - |
| Cadmium | 0.015 | 0.021 | 0.036 | 0.024 | 0.011 | 0.035 |
| Chromium (hexavalent)[ac] | - | 9.7E-04 | 9.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 6.8E-04 | 0.0074 | - | - | - |
| Cobalt | 0.0074 | 0.0088 | 0.016 | 0.0060 | 0.0023 | 0.0083 |
| Lead | 0.0081 | 0.010 | 0.018 | 0.0100 | 0.0039 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0076 | 0.0076 | - | 3.0E-04 | 3.0E-04 |
| Nickel[c] | 0.0018 | 0.0044 | 0.0062 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.3E-05 | 0.0037 | 3.0E-04 | 1.9E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.010 | 0.018 | 3.4E-04 | 1.3E-04 | 4.7E-04 |
| Thallium[c] | 0.0073 | 0.012 | 0.019 | - | - | - |
| Tin | 3.7E-04 | 2.7E-04 | 6.3E-04 | 3.0E-04 | 6.9E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 7.1E-04 | 0.0083 | 0.0015 | 4.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0012 | 0.0033 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 5.6E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.4E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.1E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.1E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.5E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.4E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.3E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.3E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 9.5E-07 | 9.5E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.6E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 9.2E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.0E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.7E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.2E-04 | 0.0012 | 2.8E-04 | 1.9E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.0E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.9E-08 | 5.9E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.3E-05 | 6.7E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.1E-08 | 4.1E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-05 | 4.4E-04 | 4.4E-05 | 4.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.9E-08 | 2.8E-04 | 1.1E-04 | 5.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.7E-11 | 0.0035 |
| Benzene | 0.17 | 5.5E-05 | 0.17 | 0.41 | 4.2E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0038 | 0.0059 | - | - | - |
| Bromoform | 0.0014 | 4.2E-04 | 0.0019 | 5.4E-04 | 5.0E-05 | 5.9E-04 |
| Bromomethane | 0.0018 | 9.1E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-06 | 0.014 | 0.31 | 7.1E-06 | 0.31 |
| Chloroform | 0.0055 | 1.5E-06 | 0.0055 | 0.23 | 2.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.2E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.8E-06 | 2.2E-04 | 0.0058 | 3.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 4.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-05 | 0.0032 | 0.0017 | 5.3E-06 | 0.0017 |
| Formaldehyde | 0.55 | 9.6E-04 | 0.55 | 0.052 | 2.9E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.0E-07 | 7.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 8.6E-08 | 6.0E-05 | 0.0014 | 6.2E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.1E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.8E-08 | 3.1E-05 | 1.9E-05 | 9.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.8E-07 | 0.0024 | 0.045 | 1.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 6.6E-07 | 1.4E-06 | 0.0059 | 0.0017 | 0.0076 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.3E-06 | 5.4E-04 | 0.0066 | 3.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 5.9E-04 | 0.0054 | 0.0083 | 3.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 6.9E-04 | 0.0086 | 0.0079 | 3.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.20 | 0.52 | 1.1 | 0.084 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.8E-04 | 0.026 | 0.55 | 9.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 9.4E-04 | 9.4E-04 | - | 0.0035 | 0.0035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0017 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.067 | 0.067 | - | 0.029 | 0.029 |
| Hydrogen Fluoride (HF)[ac] | - | 0.020 | 0.020 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.17 | 0.33 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.013 | 0.013 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.022 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0056 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.028 | 0.057 | 0.070 | 0.0083 | 0.078 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.1E-04 | 0.0018 | 1.2E-04 | 7.1E-06 | 1.3E-04 |
| Arsenic | 0.022 | 0.0012 | 0.023 | 0.0060 | 9.1E-05 | 0.0061 |
| Barium | 0.0040 | 2.4E-04 | 0.0042 | 8.2E-04 | 1.4E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0093 | 0.046 | 0.030 | 0.0022 | 0.032 |
| Boron[c] | 0.0037 | 0.0017 | 0.0054 | - | - | - |
| Cadmium | 0.015 | 0.039 | 0.054 | 0.024 | 0.018 | 0.042 |
| Chromium (hexavalent)[ac] | - | 0.0018 | 0.0018 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0013 | 0.0080 | - | - | - |
| Cobalt | 0.0074 | 0.016 | 0.024 | 0.0060 | 0.0038 | 0.0098 |
| Lead | 0.0081 | 0.019 | 0.027 | 0.0100 | 0.0065 | 0.016 |
| Mercury - Inorganic[a] | - | 0.014 | 0.014 | - | 4.9E-04 | 4.9E-04 |
| Nickel[c] | 0.0018 | 0.0081 | 0.0099 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.3E-04 | 0.0038 | 3.0E-04 | 3.1E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.019 | 0.027 | 3.4E-04 | 2.2E-04 | 5.6E-04 |
| Thallium[c] | 0.0073 | 0.022 | 0.029 | - | - | - |
| Tin | 3.7E-04 | 4.9E-04 | 8.6E-04 | 3.0E-04 | 1.1E-04 | 4.2E-04 |
| Vanadium | 0.0075 | 0.0013 | 0.0088 | 0.0015 | 7.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0022 | 0.0043 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.1E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.1E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.1E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.6E-05 | 3.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 2.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.7E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.2E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.6E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.7E-06 | 1.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.4E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.1E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 5.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 7.8E-04 | 0.0055 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 4.0E-04 | 0.0014 | 2.8E-04 | 3.1E-05 | 3.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.7E-08 | 9.0E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.1E-07 | 1.1E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.2E-04 | 7.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.6E-08 | 7.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.3E-05 | 4.5E-04 | 4.4E-05 | 6.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.2E-08 | 2.8E-04 | 1.1E-04 | 8.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 9.4E-11 | 0.0035 |
| Benzene | 0.17 | 1.0E-04 | 0.17 | 0.41 | 7.0E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0070 | 0.0092 | - | - | - |
| Bromoform | 0.0014 | 7.7E-04 | 0.0022 | 5.4E-04 | 8.2E-05 | 6.2E-04 |
| Bromomethane | 0.0018 | 1.7E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.8E-06 | 0.014 | 0.31 | 1.2E-05 | 0.31 |
| Chloroform | 0.0055 | 2.8E-06 | 0.0055 | 0.23 | 3.3E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.7E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.5E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.0E-06 | 2.3E-04 | 0.0058 | 5.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 6.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-05 | 0.0032 | 0.0017 | 8.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0018 | 0.55 | 0.052 | 4.8E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 9.1E-07 | 7.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.6E-07 | 6.0E-05 | 0.0014 | 1.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.9E-08 | 3.1E-05 | 1.9E-05 | 1.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.1E-07 | 0.0024 | 0.045 | 2.7E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-06 | 1.9E-06 | 0.0059 | 0.0028 | 0.0087 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-05 | 5.5E-04 | 0.0066 | 5.4E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0011 | 0.0059 | 0.0083 | 5.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0013 | 0.0091 | 0.0079 | 5.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.36 | 0.69 | 1.1 | 0.13 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 3.2E-04 | 0.027 | 0.55 | 1.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 5.9E-04 | 5.9E-04 | - | 0.0027 | 0.0027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0010 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.042 | 0.042 | - | 0.022 | 0.022 |
| Hydrogen Fluoride (HF)[ac] | - | 0.013 | 0.013 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.11 | 0.27 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.012 | 0.012 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.020 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0050 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.018 | 0.046 | 0.070 | 0.0063 | 0.076 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.9E-04 | 0.0017 | 1.2E-04 | 5.4E-06 | 1.3E-04 |
| Arsenic | 0.022 | 7.3E-04 | 0.023 | 0.0060 | 6.9E-05 | 0.0061 |
| Barium | 0.0040 | 1.5E-04 | 0.0041 | 8.2E-04 | 1.0E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0058 | 0.043 | 0.030 | 0.0016 | 0.032 |
| Boron[c] | 0.0037 | 0.0011 | 0.0048 | - | - | - |
| Cadmium | 0.015 | 0.024 | 0.039 | 0.024 | 0.014 | 0.038 |
| Chromium (hexavalent)[ac] | - | 0.0011 | 0.0011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 7.9E-04 | 0.0075 | - | - | - |
| Cobalt | 0.0074 | 0.010 | 0.017 | 0.0060 | 0.0029 | 0.0089 |
| Lead | 0.0081 | 0.012 | 0.020 | 0.0100 | 0.0049 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0087 | 0.0087 | - | 3.7E-04 | 3.7E-04 |
| Nickel[c] | 0.0018 | 0.0051 | 0.0069 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.4E-05 | 0.0038 | 3.0E-04 | 2.4E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.012 | 0.020 | 3.4E-04 | 1.7E-04 | 5.1E-04 |
| Thallium[c] | 0.0073 | 0.014 | 0.021 | - | - | - |
| Tin | 3.7E-04 | 3.1E-04 | 6.7E-04 | 3.0E-04 | 8.7E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 8.1E-04 | 0.0084 | 0.0015 | 5.7E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0014 | 0.0035 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.5E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.1E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.7E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.1E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.9E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.1E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.6E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.3E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.3E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.6E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.5E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.9E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.5E-04 | 0.0013 | 2.8E-04 | 2.4E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.8E-08 | 6.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.2E-05 | 6.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.7E-08 | 4.7E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-05 | 4.4E-04 | 4.4E-05 | 5.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.5E-08 | 2.8E-04 | 1.1E-04 | 6.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.1E-11 | 0.0035 |
| Benzene | 0.17 | 6.4E-05 | 0.17 | 0.41 | 5.3E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0044 | 0.0065 | - | - | - |
| Bromoform | 0.0014 | 4.8E-04 | 0.0019 | 5.4E-04 | 6.2E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 1.0E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-06 | 0.014 | 0.31 | 8.9E-06 | 0.31 |
| Chloroform | 0.0055 | 1.8E-06 | 0.0055 | 0.23 | 2.5E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.1E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.4E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.4E-06 | 2.2E-04 | 0.0058 | 3.9E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.5E-05 | 0.0032 | 0.0017 | 6.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0011 | 0.55 | 0.052 | 3.6E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.7E-07 | 7.2E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.9E-08 | 6.0E-05 | 0.0014 | 7.8E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.5E-08 | 3.1E-05 | 1.9E-05 | 1.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.2E-07 | 0.0024 | 0.045 | 2.0E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 7.6E-07 | 1.5E-06 | 0.0059 | 0.0022 | 0.0080 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.6E-06 | 5.4E-04 | 0.0066 | 4.1E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 6.8E-04 | 0.0055 | 0.0083 | 4.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 8.0E-04 | 0.0087 | 0.0079 | 4.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.23 | 0.55 | 1.1 | 0.099 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.0E-04 | 0.026 | 0.55 | 1.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 2.1E-04 | 2.1E-04 | - | 8.2E-04 | 8.2E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 3.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.015 | 0.015 | - | 0.0068 | 0.0068 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0044 | 0.0044 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.037 | 0.20 | 0.29 | 0.0092 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0047 | 0.0047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0079 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0020 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0062 | 0.034 | 0.070 | 0.0019 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.7E-05 | 0.0015 | 1.2E-04 | 1.7E-06 | 1.2E-04 |
| Arsenic | 0.022 | 2.6E-04 | 0.022 | 0.0060 | 2.1E-05 | 0.0061 |
| Barium | 0.0040 | 5.2E-05 | 0.0040 | 8.2E-04 | 3.2E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0020 | 0.039 | 0.030 | 5.0E-04 | 0.031 |
| Boron[c] | 0.0037 | 3.7E-04 | 0.0041 | - | - | - |
| Cadmium | 0.015 | 0.0085 | 0.023 | 0.024 | 0.0042 | 0.028 |
| Chromium (hexavalent)[ac] | - | 3.9E-04 | 3.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.7E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0035 | 0.011 | 0.0060 | 8.8E-04 | 0.0069 |
| Lead | 0.0081 | 0.0041 | 0.012 | 0.0100 | 0.0015 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0030 | 0.0030 | - | 1.1E-04 | 1.1E-04 |
| Nickel[c] | 0.0018 | 0.0018 | 0.0036 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.9E-05 | 0.0037 | 3.0E-04 | 7.3E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0041 | 0.012 | 3.4E-04 | 5.1E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0048 | 0.012 | - | - | - |
| Tin | 3.7E-04 | 1.1E-04 | 4.7E-04 | 3.0E-04 | 2.7E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 2.8E-04 | 0.0078 | 0.0015 | 1.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 4.9E-04 | 0.0026 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.3E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.8E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.9E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 9.3E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.5E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.7E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.0E-05 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.2E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.1E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 9.2E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.9E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.0E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 3.8E-07 | 3.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.2E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.8E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.8E-05 | 0.0011 | 2.8E-04 | 7.3E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 8.2E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.4E-08 | 2.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.5E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.6E-08 | 1.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 5.0E-06 | 4.3E-04 | 4.4E-05 | 1.6E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.6E-08 | 2.8E-04 | 1.1E-04 | 1.9E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.2E-11 | 0.0035 |
| Benzene | 0.17 | 2.2E-05 | 0.17 | 0.41 | 1.6E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0015 | 0.0037 | - | - | - |
| Bromoform | 0.0014 | 1.7E-04 | 0.0016 | 5.4E-04 | 1.9E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 3.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.0E-07 | 0.014 | 0.31 | 2.7E-06 | 0.31 |
| Chloroform | 0.0055 | 6.2E-07 | 0.0055 | 0.23 | 7.7E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.1E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.3E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.5E-06 | 2.2E-04 | 0.0058 | 1.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.6E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-05 | 0.0032 | 0.0017 | 2.0E-06 | 0.0017 |
| Formaldehyde | 0.55 | 3.9E-04 | 0.55 | 0.052 | 1.1E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.0E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.5E-08 | 6.0E-05 | 0.0014 | 2.4E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.9E-08 | 3.1E-05 | 1.9E-05 | 3.6E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.1E-07 | 0.0024 | 0.045 | 6.2E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.3E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.7E-07 | 9.8E-07 | 0.0059 | 6.6E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.3E-06 | 5.4E-04 | 0.0066 | 1.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 2.4E-04 | 0.0051 | 0.0083 | 1.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.8E-04 | 0.0082 | 0.0079 | 1.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.079 | 0.41 | 1.1 | 0.032 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 7.0E-05 | 0.026 | 0.55 | 3.6E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.5E-04 | 1.5E-04 | - | 7.3E-04 | 7.3E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0061 | 0.0061 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0033 | 0.0033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.0082 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0049 | 0.0049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0082 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0020 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0046 | 0.033 | 0.070 | 0.0017 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-05 | 0.0015 | 1.2E-04 | 1.5E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 1.9E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 2.9E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 4.5E-04 | 0.031 |
| Boron[c] | 0.0037 | 2.8E-04 | 0.0040 | - | - | - |
| Cadmium | 0.015 | 0.0063 | 0.021 | 0.024 | 0.0038 | 0.028 |
| Chromium (hexavalent)[ac] | - | 2.9E-04 | 2.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0100 | 0.0060 | 7.9E-04 | 0.0068 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0014 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0023 | 0.0023 | - | 1.0E-04 | 1.0E-04 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-05 | 0.0037 | 3.0E-04 | 6.5E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 4.5E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 7.9E-05 | 4.5E-04 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 1.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.6E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.7E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.6E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.6E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-05 | 0.0011 | 2.8E-04 | 6.5E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-08 | 1.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 1.4E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-08 | 2.8E-04 | 1.1E-04 | 1.7E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.0E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 1.5E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0033 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 1.7E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-07 | 0.014 | 0.31 | 2.4E-06 | 0.31 |
| Chloroform | 0.0055 | 4.6E-07 | 0.0055 | 0.23 | 6.9E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.1E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-06 | 0.0032 | 0.0017 | 1.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.9E-04 | 0.55 | 0.052 | 9.9E-06 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-08 | 6.0E-05 | 0.0014 | 2.1E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 3.2E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-08 | 0.0024 | 0.045 | 5.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.9E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-07 | 9.1E-07 | 0.0059 | 5.9E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-06 | 5.4E-04 | 0.0066 | 1.1E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 1.8E-04 | 0.0050 | 0.0083 | 1.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.1E-04 | 0.0081 | 0.0079 | 1.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.058 | 0.39 | 1.1 | 0.030 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-05 | 0.026 | 0.55 | 3.2E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.5E-04 | 1.5E-04 | - | 0.0011 | 0.0011 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0091 | 0.0091 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0033 | 0.0033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.012 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0038 | 0.0038 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0063 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0016 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0046 | 0.033 | 0.070 | 0.0026 | 0.073 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-05 | 0.0015 | 1.2E-04 | 2.2E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 2.8E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 4.3E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 6.8E-04 | 0.031 |
| Boron[c] | 0.0037 | 2.8E-04 | 0.0040 | - | - | - |
| Cadmium | 0.015 | 0.0063 | 0.021 | 0.024 | 0.0057 | 0.030 |
| Chromium (hexavalent)[ac] | - | 2.9E-04 | 2.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0100 | 0.0060 | 0.0012 | 0.0072 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0020 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0023 | 0.0023 | - | 1.5E-04 | 1.5E-04 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-05 | 0.0037 | 3.0E-04 | 9.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 6.8E-05 | 4.1E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 8.0E-05 | 4.5E-04 | 3.0E-04 | 3.6E-05 | 3.4E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 2.4E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.6E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 7.0E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.4E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-05 | 0.0011 | 2.8E-04 | 9.8E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-08 | 1.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 2.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-08 | 2.8E-04 | 1.1E-04 | 2.6E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.9E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 2.2E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0033 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 2.5E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-07 | 0.014 | 0.31 | 3.6E-06 | 0.31 |
| Chloroform | 0.0055 | 4.6E-07 | 0.0055 | 0.23 | 1.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.6E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-06 | 0.0032 | 0.0017 | 2.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.9E-04 | 0.55 | 0.052 | 1.5E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-08 | 6.0E-05 | 0.0014 | 3.2E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 4.8E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-08 | 0.0024 | 0.045 | 8.3E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-07 | 9.1E-07 | 0.0059 | 8.8E-04 | 0.0068 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-06 | 5.4E-04 | 0.0066 | 1.7E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 1.8E-04 | 0.0050 | 0.0083 | 1.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.1E-04 | 0.0081 | 0.0079 | 1.7E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.058 | 0.39 | 1.1 | 0.039 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-05 | 0.026 | 0.55 | 4.8E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 2.5E-04 | 2.5E-04 | - | 9.0E-04 | 9.0E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 4.4E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.018 | 0.018 | - | 0.0075 | 0.0075 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0053 | 0.0053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.044 | 0.21 | 0.29 | 0.010 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0081 | 0.0081 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.014 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0034 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0074 | 0.036 | 0.070 | 0.0021 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-05 | 0.0015 | 1.2E-04 | 1.8E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.1E-04 | 0.022 | 0.0060 | 2.3E-05 | 0.0061 |
| Barium | 0.0040 | 6.2E-05 | 0.0040 | 8.2E-04 | 3.5E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0024 | 0.039 | 0.030 | 5.5E-04 | 0.031 |
| Boron[c] | 0.0037 | 4.5E-04 | 0.0041 | - | - | - |
| Cadmium | 0.015 | 0.010 | 0.025 | 0.024 | 0.0046 | 0.029 |
| Chromium (hexavalent)[ac] | - | 4.7E-04 | 4.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 3.3E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0042 | 0.012 | 0.0060 | 9.6E-04 | 0.0070 |
| Lead | 0.0081 | 0.0049 | 0.013 | 0.0100 | 0.0017 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0037 | 0.0037 | - | 1.2E-04 | 1.2E-04 |
| Nickel[c] | 0.0018 | 0.0021 | 0.0039 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-05 | 0.0037 | 3.0E-04 | 8.0E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0049 | 0.013 | 3.4E-04 | 5.6E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0057 | 0.013 | - | - | - |
| Tin | 3.7E-04 | 1.3E-04 | 5.0E-04 | 3.0E-04 | 2.9E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 3.4E-04 | 0.0079 | 0.0015 | 1.9E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 5.8E-04 | 0.0026 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-06 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.7E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 4.6E-07 | 4.6E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.1E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.0E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.1E-04 | 0.0011 | 2.8E-04 | 8.0E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-08 | 2.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-05 | 6.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-08 | 2.0E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-06 | 4.3E-04 | 4.4E-05 | 1.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-08 | 2.8E-04 | 1.1E-04 | 2.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.4E-11 | 0.0035 |
| Benzene | 0.17 | 2.7E-05 | 0.17 | 0.41 | 1.8E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0018 | 0.0040 | - | - | - |
| Bromoform | 0.0014 | 2.0E-04 | 0.0016 | 5.4E-04 | 2.1E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 4.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.8E-07 | 0.014 | 0.31 | 3.0E-06 | 0.31 |
| Chloroform | 0.0055 | 7.5E-07 | 0.0055 | 0.23 | 8.5E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-06 | 2.2E-04 | 0.0058 | 1.3E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.5E-05 | 0.0032 | 0.0017 | 2.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 4.6E-04 | 0.55 | 0.052 | 1.2E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.1E-08 | 6.0E-05 | 0.0014 | 2.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-08 | 3.1E-05 | 1.9E-05 | 3.9E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-07 | 0.0024 | 0.045 | 6.8E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-07 | 1.0E-06 | 0.0059 | 7.2E-04 | 0.0066 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-06 | 5.4E-04 | 0.0066 | 1.4E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 2.9E-04 | 0.0051 | 0.0083 | 1.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 3.3E-04 | 0.0082 | 0.0079 | 1.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.095 | 0.42 | 1.1 | 0.040 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-05 | 0.026 | 0.55 | 3.9E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 4.4E-04 | 4.4E-04 | - | 0.0026 | 0.0026 |
| Carbon Monoxide (CO)[c] | 0.069 | 7.9E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.031 | 0.031 | - | 0.022 | 0.022 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0094 | 0.0094 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.079 | 0.24 | 0.29 | 0.029 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.011 | 0.011 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.019 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0047 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.013 | 0.042 | 0.070 | 0.0061 | 0.076 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.4E-04 | 0.0016 | 1.2E-04 | 5.3E-06 | 1.3E-04 |
| Arsenic | 0.022 | 5.5E-04 | 0.023 | 0.0060 | 6.7E-05 | 0.0061 |
| Barium | 0.0040 | 1.1E-04 | 0.0041 | 8.2E-04 | 1.0E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0044 | 0.041 | 0.030 | 0.0016 | 0.032 |
| Boron[c] | 0.0037 | 8.0E-04 | 0.0045 | - | - | - |
| Cadmium | 0.015 | 0.018 | 0.033 | 0.024 | 0.013 | 0.038 |
| Chromium (hexavalent)[ac] | - | 8.4E-04 | 8.4E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 5.9E-04 | 0.0073 | - | - | - |
| Cobalt | 0.0074 | 0.0076 | 0.015 | 0.0060 | 0.0028 | 0.0088 |
| Lead | 0.0081 | 0.0087 | 0.017 | 0.0100 | 0.0048 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0065 | 0.0065 | - | 3.6E-04 | 3.6E-04 |
| Nickel[c] | 0.0018 | 0.0038 | 0.0056 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.3E-05 | 0.0037 | 3.0E-04 | 2.3E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0088 | 0.017 | 3.4E-04 | 1.6E-04 | 5.0E-04 |
| Thallium[c] | 0.0073 | 0.010 | 0.018 | - | - | - |
| Tin | 3.7E-04 | 2.3E-04 | 6.0E-04 | 3.0E-04 | 8.4E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 6.1E-04 | 0.0082 | 0.0015 | 5.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0010 | 0.0031 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.9E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.8E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.1E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.9E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.0E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.9E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.2E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.0E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.3E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.2E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 8.2E-07 | 8.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.9E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.0E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 7.9E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.0E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.8E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.9E-04 | 0.0012 | 2.8E-04 | 2.3E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.8E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.1E-08 | 5.1E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.4E-05 | 6.6E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.5E-08 | 3.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.1E-05 | 4.4E-04 | 4.4E-05 | 5.0E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.4E-08 | 2.8E-04 | 1.1E-04 | 6.2E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.0E-11 | 0.0035 |
| Benzene | 0.17 | 4.8E-05 | 0.17 | 0.41 | 5.1E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0033 | 0.0054 | - | - | - |
| Bromoform | 0.0014 | 3.6E-04 | 0.0018 | 5.4E-04 | 6.0E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 7.9E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.7E-07 | 0.014 | 0.31 | 8.6E-06 | 0.31 |
| Chloroform | 0.0055 | 1.3E-06 | 0.0055 | 0.23 | 2.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 7.0E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.3E-06 | 2.2E-04 | 0.0058 | 3.8E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.0E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.7E-05 | 0.0032 | 0.0017 | 6.5E-06 | 0.0017 |
| Formaldehyde | 0.55 | 8.3E-04 | 0.55 | 0.052 | 3.5E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 4.3E-07 | 7.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.4E-08 | 6.0E-05 | 0.0014 | 7.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.2E-08 | 3.1E-05 | 1.9E-05 | 1.1E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.4E-07 | 0.0024 | 0.045 | 2.0E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 5.7E-07 | 1.3E-06 | 0.0059 | 0.0021 | 0.0080 |
| Xylenes, m-, p- and o- | 5.3E-04 | 7.2E-06 | 5.4E-04 | 0.0066 | 4.0E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 5.1E-04 | 0.0053 | 0.0083 | 4.3E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 6.0E-04 | 0.0085 | 0.0079 | 4.0E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.17 | 0.50 | 1.1 | 0.096 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.5E-04 | 0.026 | 0.55 | 1.1E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.5E-04 | 1.5E-04 | - | 7.1E-04 | 7.1E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0059 | 0.0059 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0032 | 0.0032 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.0079 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0059 | 0.0059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0099 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0025 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0045 | 0.033 | 0.070 | 0.0017 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.9E-05 | 0.0015 | 1.2E-04 | 1.4E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 1.8E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 2.8E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 4.4E-04 | 0.031 |
| Boron[c] | 0.0037 | 2.7E-04 | 0.0040 | - | - | - |
| Cadmium | 0.015 | 0.0062 | 0.021 | 0.024 | 0.0037 | 0.028 |
| Chromium (hexavalent)[ac] | - | 2.8E-04 | 2.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0099 | 0.0060 | 7.6E-04 | 0.0068 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0013 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0022 | 0.0022 | - | 9.8E-05 | 9.8E-05 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.1E-05 | 0.0037 | 3.0E-04 | 6.3E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 4.4E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 7.8E-05 | 4.5E-04 | 3.0E-04 | 2.3E-05 | 3.2E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 1.5E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.5E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.2E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.8E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.9E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.3E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.5E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.7E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.4E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 8.9E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.6E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.4E-05 | 0.0011 | 2.8E-04 | 6.3E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.0E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-08 | 1.7E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.8E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 1.4E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-08 | 2.8E-04 | 1.1E-04 | 1.7E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 1.9E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 1.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0032 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 1.7E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.9E-07 | 0.014 | 0.31 | 2.4E-06 | 0.31 |
| Chloroform | 0.0055 | 4.5E-07 | 0.0055 | 0.23 | 6.7E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.0E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.0E-06 | 0.0032 | 0.0017 | 1.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.8E-04 | 0.55 | 0.052 | 9.6E-06 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-08 | 6.0E-05 | 0.0014 | 2.1E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 3.1E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.1E-08 | 0.0024 | 0.045 | 5.4E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-07 | 9.1E-07 | 0.0059 | 5.7E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-06 | 5.4E-04 | 0.0066 | 1.1E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 1.7E-04 | 0.0050 | 0.0083 | 1.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.0E-04 | 0.0081 | 0.0079 | 1.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.057 | 0.38 | 1.1 | 0.031 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.1E-05 | 0.026 | 0.55 | 3.1E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.9E-04 | 1.9E-04 | - | 0.0017 | 0.0017 |
| Carbon Monoxide (CO)[c] | 0.069 | 3.4E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.014 | 0.014 | - | 0.014 | 0.014 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0041 | 0.0041 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.034 | 0.20 | 0.29 | 0.019 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0064 | 0.0064 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.011 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0027 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0058 | 0.034 | 0.070 | 0.0039 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.2E-05 | 0.0015 | 1.2E-04 | 3.4E-06 | 1.2E-04 |
| Arsenic | 0.022 | 2.4E-04 | 0.022 | 0.0060 | 4.3E-05 | 0.0061 |
| Barium | 0.0040 | 4.8E-05 | 0.0040 | 8.2E-04 | 6.5E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0019 | 0.039 | 0.030 | 0.0010 | 0.031 |
| Boron[c] | 0.0037 | 3.5E-04 | 0.0041 | - | - | - |
| Cadmium | 0.015 | 0.0080 | 0.023 | 0.024 | 0.0087 | 0.033 |
| Chromium (hexavalent)[ac] | - | 3.6E-04 | 3.6E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.6E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0033 | 0.011 | 0.0060 | 0.0018 | 0.0078 |
| Lead | 0.0081 | 0.0038 | 0.012 | 0.0100 | 0.0031 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0028 | 0.0028 | - | 2.3E-04 | 2.3E-04 |
| Nickel[c] | 0.0018 | 0.0017 | 0.0035 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.7E-05 | 0.0037 | 3.0E-04 | 1.5E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0038 | 0.012 | 3.4E-04 | 1.0E-04 | 4.5E-04 |
| Thallium[c] | 0.0073 | 0.0044 | 0.012 | - | - | - |
| Tin | 3.7E-04 | 1.0E-04 | 4.7E-04 | 3.0E-04 | 5.4E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 2.7E-04 | 0.0078 | 0.0015 | 3.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 4.5E-04 | 0.0025 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.1E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.7E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.3E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 8.7E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.3E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.4E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.1E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.0E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 8.6E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 3.6E-07 | 3.6E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.4E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.2E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 3.7E-04 | 0.0051 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.2E-05 | 0.0011 | 2.8E-04 | 1.5E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 7.6E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.2E-08 | 2.2E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.3E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.5E-08 | 1.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.7E-06 | 4.3E-04 | 4.4E-05 | 3.2E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-08 | 2.8E-04 | 1.1E-04 | 4.0E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 4.5E-11 | 0.0035 |
| Benzene | 0.17 | 2.1E-05 | 0.17 | 0.41 | 3.3E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0014 | 0.0036 | - | - | - |
| Bromoform | 0.0014 | 1.6E-04 | 0.0016 | 5.4E-04 | 3.9E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 3.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.8E-07 | 0.014 | 0.31 | 5.6E-06 | 0.31 |
| Chloroform | 0.0055 | 5.8E-07 | 0.0055 | 0.23 | 1.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.0E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.1E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.4E-06 | 2.2E-04 | 0.0058 | 2.5E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.2E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-05 | 0.0032 | 0.0017 | 4.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 3.6E-04 | 0.55 | 0.052 | 2.3E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.2E-08 | 6.0E-05 | 0.0014 | 4.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.8E-08 | 3.1E-05 | 1.9E-05 | 7.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.0E-07 | 0.0024 | 0.045 | 1.3E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 8.9E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.5E-07 | 9.6E-07 | 0.0059 | 0.0014 | 0.0072 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.1E-06 | 5.4E-04 | 0.0066 | 2.6E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 2.2E-04 | 0.0051 | 0.0083 | 2.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.6E-04 | 0.0081 | 0.0079 | 2.6E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.074 | 0.40 | 1.1 | 0.061 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.6E-05 | 0.026 | 0.55 | 7.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 | - | 8.7E-04 | 8.7E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.1E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0085 | 0.0085 | - | 0.0072 | 0.0072 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0026 | 0.0026 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.021 | 0.18 | 0.29 | 0.0097 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0031 | 0.0031 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0052 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0013 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0036 | 0.032 | 0.070 | 0.0020 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.9E-05 | 0.0015 | 1.2E-04 | 1.8E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.5E-04 | 0.022 | 0.0060 | 2.3E-05 | 0.0061 |
| Barium | 0.0040 | 3.0E-05 | 0.0040 | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0012 | 0.038 | 0.030 | 5.4E-04 | 0.031 |
| Boron[c] | 0.0037 | 2.2E-04 | 0.0039 | - | - | - |
| Cadmium | 0.015 | 0.0050 | 0.020 | 0.024 | 0.0045 | 0.029 |
| Chromium (hexavalent)[ac] | - | 2.3E-04 | 2.3E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 1.6E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0021 | 0.0094 | 0.0060 | 9.3E-04 | 0.0070 |
| Lead | 0.0081 | 0.0024 | 0.010 | 0.0100 | 0.0016 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0018 | 0.0018 | - | 1.2E-04 | 1.2E-04 |
| Nickel[c] | 0.0018 | 0.0010 | 0.0029 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.7E-05 | 0.0037 | 3.0E-04 | 7.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0024 | 0.011 | 3.4E-04 | 5.4E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0028 | 0.010 | - | - | - |
| Tin | 3.7E-04 | 6.2E-05 | 4.3E-04 | 3.0E-04 | 2.8E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 1.6E-04 | 0.0077 | 0.0015 | 1.9E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 2.8E-04 | 0.0023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.3E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.0E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.8E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.1E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.4E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.4E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.9E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.9E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.5E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.3E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.7E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.9E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.2E-07 | 2.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.0E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.1E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.9E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.1E-05 | 0.0011 | 2.8E-04 | 7.7E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.8E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.4E-08 | 1.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.5E-05 | 6.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 9.6E-09 | 9.6E-09 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.9E-06 | 4.3E-04 | 4.4E-05 | 1.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.1E-09 | 2.8E-04 | 1.1E-04 | 2.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.3E-11 | 0.0035 |
| Benzene | 0.17 | 1.3E-05 | 0.17 | 0.41 | 1.7E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 8.9E-04 | 0.0030 | - | - | - |
| Bromoform | 0.0014 | 9.8E-05 | 0.0015 | 5.4E-04 | 2.0E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 2.1E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.3E-07 | 0.014 | 0.31 | 2.9E-06 | 0.31 |
| Chloroform | 0.0055 | 3.6E-07 | 0.0055 | 0.23 | 8.2E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.9E-07 | 2.2E-04 | 0.0058 | 1.3E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.2E-06 | 0.0032 | 0.0017 | 2.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.2E-04 | 0.55 | 0.052 | 1.2E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.0E-08 | 6.0E-05 | 0.0014 | 2.5E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.6E-08 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.1E-08 | 3.1E-05 | 1.9E-05 | 3.8E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.5E-08 | 0.0024 | 0.045 | 6.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.6E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.5E-07 | 8.7E-07 | 0.0059 | 7.0E-04 | 0.0066 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.9E-06 | 5.4E-04 | 0.0066 | 1.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 1.4E-04 | 0.0050 | 0.0083 | 1.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 1.6E-04 | 0.0080 | 0.0079 | 1.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.046 | 0.37 | 1.1 | 0.031 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.1E-05 | 0.026 | 0.55 | 3.8E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 3.3E-04 | 3.3E-04 | - | 0.0015 | 0.0015 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.9E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.024 | 0.024 | - | 0.012 | 0.012 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0071 | 0.0071 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.060 | 0.22 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0085 | 0.0085 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.014 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0035 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.010 | 0.038 | 0.070 | 0.0034 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.1E-04 | 0.0016 | 1.2E-04 | 3.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.2E-04 | 0.022 | 0.0060 | 3.8E-05 | 0.0061 |
| Barium | 0.0040 | 8.4E-05 | 0.0041 | 8.2E-04 | 5.7E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0033 | 0.040 | 0.030 | 9.0E-04 | 0.031 |
| Boron[c] | 0.0037 | 6.0E-04 | 0.0043 | - | - | - |
| Cadmium | 0.015 | 0.014 | 0.029 | 0.024 | 0.0076 | 0.032 |
| Chromium (hexavalent)[ac] | - | 6.3E-04 | 6.3E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.4E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0057 | 0.013 | 0.0060 | 0.0016 | 0.0076 |
| Lead | 0.0081 | 0.0066 | 0.015 | 0.0100 | 0.0027 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0049 | 0.0049 | - | 2.0E-04 | 2.0E-04 |
| Nickel[c] | 0.0018 | 0.0029 | 0.0047 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.7E-05 | 0.0037 | 3.0E-04 | 1.3E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0066 | 0.015 | 3.4E-04 | 9.1E-05 | 4.3E-04 |
| Thallium[c] | 0.0073 | 0.0077 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.7E-04 | 5.4E-04 | 3.0E-04 | 4.8E-05 | 3.5E-04 |
| Vanadium | 0.0075 | 4.6E-04 | 0.0080 | 0.0015 | 3.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.9E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.9E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.6E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.9E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.0E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.5E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.3E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.5E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.2E-07 | 6.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.1E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.0E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.0E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 3.2E-04 | 0.0051 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.4E-04 | 0.0012 | 2.8E-04 | 1.3E-05 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.8E-08 | 3.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.1E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.7E-08 | 2.7E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.2E-06 | 4.3E-04 | 4.4E-05 | 2.8E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.5E-08 | 2.8E-04 | 1.1E-04 | 3.5E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.9E-11 | 0.0035 |
| Benzene | 0.17 | 3.6E-05 | 0.17 | 0.41 | 2.9E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0025 | 0.0046 | - | - | - |
| Bromoform | 0.0014 | 2.7E-04 | 0.0017 | 5.4E-04 | 3.4E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 5.9E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.5E-07 | 0.014 | 0.31 | 4.8E-06 | 0.31 |
| Chloroform | 0.0055 | 1.0E-06 | 0.0055 | 0.23 | 1.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.4E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.3E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.5E-06 | 2.2E-04 | 0.0058 | 2.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.8E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.0E-05 | 0.0032 | 0.0017 | 3.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.3E-04 | 0.55 | 0.052 | 2.0E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.2E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.6E-08 | 6.0E-05 | 0.0014 | 4.3E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.1E-08 | 3.1E-05 | 1.9E-05 | 6.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.8E-07 | 0.0024 | 0.045 | 1.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 7.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.3E-07 | 1.1E-06 | 0.0059 | 0.0012 | 0.0071 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.4E-06 | 5.4E-04 | 0.0066 | 2.2E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 3.9E-04 | 0.0052 | 0.0083 | 2.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.5E-04 | 0.0083 | 0.0079 | 2.2E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.13 | 0.46 | 1.1 | 0.058 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 6.4E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 3.5E-04 | 3.5E-04 | - | 0.0019 | 0.0019 |
| Carbon Monoxide (CO)[c] | 0.069 | 6.3E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.025 | 0.025 | - | 0.016 | 0.016 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0075 | 0.0075 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.063 | 0.22 | 0.29 | 0.022 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.013 | 0.013 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.022 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0055 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.011 | 0.039 | 0.070 | 0.0046 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.1E-04 | 0.0016 | 1.2E-04 | 3.9E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.4E-04 | 0.022 | 0.0060 | 5.0E-05 | 0.0061 |
| Barium | 0.0040 | 8.8E-05 | 0.0041 | 8.2E-04 | 7.6E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0035 | 0.040 | 0.030 | 0.0012 | 0.031 |
| Boron[c] | 0.0037 | 6.4E-04 | 0.0043 | - | - | - |
| Cadmium | 0.015 | 0.015 | 0.029 | 0.024 | 0.010 | 0.034 |
| Chromium (hexavalent)[ac] | - | 6.7E-04 | 6.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.7E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0060 | 0.013 | 0.0060 | 0.0021 | 0.0081 |
| Lead | 0.0081 | 0.0069 | 0.015 | 0.0100 | 0.0036 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0052 | 0.0052 | - | 2.7E-04 | 2.7E-04 |
| Nickel[c] | 0.0018 | 0.0030 | 0.0048 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.0E-05 | 0.0037 | 3.0E-04 | 1.7E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0070 | 0.015 | 3.4E-04 | 1.2E-04 | 4.6E-04 |
| Thallium[c] | 0.0073 | 0.0081 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.8E-04 | 5.5E-04 | 3.0E-04 | 6.3E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 4.8E-04 | 0.0080 | 0.0015 | 4.2E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 8.3E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.9E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.0E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.3E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.2E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.9E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.7E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.0E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.7E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.5E-07 | 6.5E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.1E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.7E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.3E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.9E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.3E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.5E-04 | 0.0012 | 2.8E-04 | 1.7E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.0E-08 | 4.0E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.3E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.8E-08 | 2.8E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.6E-06 | 4.4E-04 | 4.4E-05 | 3.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-08 | 2.8E-04 | 1.1E-04 | 4.6E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.2E-11 | 0.0035 |
| Benzene | 0.17 | 3.8E-05 | 0.17 | 0.41 | 3.8E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0026 | 0.0047 | - | - | - |
| Bromoform | 0.0014 | 2.9E-04 | 0.0017 | 5.4E-04 | 4.5E-05 | 5.8E-04 |
| Bromomethane | 0.0018 | 6.3E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.9E-07 | 0.014 | 0.31 | 6.4E-06 | 0.31 |
| Chloroform | 0.0055 | 1.1E-06 | 0.0055 | 0.23 | 1.8E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.6E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.6E-06 | 2.2E-04 | 0.0058 | 2.9E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.1E-05 | 0.0032 | 0.0017 | 4.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.6E-04 | 0.55 | 0.052 | 2.6E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.4E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.9E-08 | 6.0E-05 | 0.0014 | 5.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.8E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.3E-08 | 3.1E-05 | 1.9E-05 | 8.5E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-07 | 0.0024 | 0.045 | 1.5E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.0E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.5E-07 | 1.2E-06 | 0.0059 | 0.0016 | 0.0074 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.7E-06 | 5.4E-04 | 0.0066 | 3.0E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 4.1E-04 | 0.0052 | 0.0083 | 3.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.7E-04 | 0.0083 | 0.0079 | 3.0E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.13 | 0.46 | 1.1 | 0.080 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.2E-04 | 0.026 | 0.55 | 8.5E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.8E-05 | 7.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.5E-04 | 6.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 6.9E-05 | 0.043 |
| Boron | 0.0031 | 4.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.5E-08 | 4.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.6E-09 | 5.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.8E-04 | 2.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.6E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 1.9E-05 | 0.0031 |
| Cadmium | 0.12 | 8.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.1E-05 | 3.1E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.4E-04 | 0.030 |
| Tin | 0.0015 | 5.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.3E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.9E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.5E-10 | 8.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-08 | 3.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-09 | 2.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.0E-11 | 0.12 |
| Benzene | 0.13 | 6.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.4E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.9E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.7E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.9E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.7E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.1E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0035 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.9E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.8E-04 | 2.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.6E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 1.9E-05 | 0.0031 |
| Cadmium | 0.12 | 8.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.1E-05 | 3.1E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.4E-04 | 0.030 |
| Tin | 0.0015 | 5.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.3E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.8E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.6E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.5E-10 | 8.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-08 | 3.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-09 | 2.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.0E-11 | 0.12 |
| Benzene | 0.13 | 6.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.3E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.9E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.6E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.9E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.7E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.1E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0035 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.9E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.9E-05 | 7.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.6E-04 | 6.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 6.9E-05 | 0.043 |
| Boron | 0.0031 | 4.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.6E-08 | 4.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.7E-09 | 5.7E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.7E-05 | 6.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.6E-04 | 5.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0015 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.7E-05 | 0.015 |
| Arsenic | 0.12 | 3.5E-05 | 0.12 |
| Barium | 0.0049 | 2.6E-06 | 0.0050 |
| Beryllium | 0.043 | 5.9E-05 | 0.043 |
| Boron | 0.0031 | 3.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0017 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.0E-06 | 4.0E-06 |
| Cobalt | 0.0060 | 7.2E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.2E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.2E-05 | 6.2E-05 |
| Nickel | 0.045 | 0.0022 | 0.047 |
| Phosphorus | 7.3E-10 | 8.9E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.0E-06 | 0.015 |
| Silver | 0.034 | 4.2E-04 | 0.035 |
| Thallium | 0.029 | 4.8E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.9E-08 | 3.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.4E-09 | 2.4E-09 |
| Hexachlorobenzene | 0.0021 | 2.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.7E-09 | 1.7E-09 |
| Pentachlorophenol | 8.2E-04 | 5.1E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.8E-08 | 6.8E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.8E-09 | 4.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.1E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.0E-10 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.6E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.5E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0070 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.2E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.9E-05 | 7.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.6E-04 | 6.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 7.0E-05 | 0.043 |
| Boron | 0.0031 | 4.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0026 | 0.047 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.6E-08 | 4.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.7E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.7E-09 | 5.7E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.9E-05 | 2.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.4E-04 | 2.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0011 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 6.4E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 7.3E-06 | 0.015 |
| Arsenic | 0.12 | 1.5E-05 | 0.12 |
| Barium | 0.0049 | 1.1E-06 | 0.0049 |
| Beryllium | 0.043 | 2.5E-05 | 0.043 |
| Boron | 0.0031 | 1.6E-05 | 0.0031 |
| Cadmium | 0.12 | 7.5E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.7E-06 | 1.7E-06 |
| Cobalt | 0.0060 | 3.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 5.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.7E-05 | 2.7E-05 |
| Nickel | 0.045 | 9.3E-04 | 0.046 |
| Phosphorus | 7.3E-10 | 3.8E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.3E-06 | 0.015 |
| Silver | 0.034 | 1.8E-04 | 0.035 |
| Thallium | 0.029 | 2.1E-04 | 0.029 |
| Tin | 0.0015 | 4.7E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 6.2E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.3E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.0E-07 | 0.0023 |
| Fluorene[a] | - | 1.7E-08 | 1.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 9.7E-08 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 7.5E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.1E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.0E-09 | 1.0E-09 |
| Hexachlorobenzene | 0.0021 | 1.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 7.2E-10 | 7.2E-10 |
| Pentachlorophenol | 8.2E-04 | 2.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.9E-08 | 2.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.1E-09 | 2.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.9E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 4.3E-11 | 0.12 |
| Benzene | 0.13 | 5.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 7.1E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 6.7E-05 | 0.0054 |
| Bromoform | 0.0046 | 7.4E-06 | 0.0046 |
| Bromomethane | 0.020 | 3.8E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.7E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 9.3E-09 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.8E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 8.7E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 8.4E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.4E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.9E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.2E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.2E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0030 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 8.5E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 5.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.2E-05 | 3.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.6E-04 | 2.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0012 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.3E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.0E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 8.0E-06 | 0.015 |
| Arsenic | 0.12 | 1.6E-05 | 0.12 |
| Barium | 0.0049 | 1.2E-06 | 0.0049 |
| Beryllium | 0.043 | 2.8E-05 | 0.043 |
| Boron | 0.0031 | 1.8E-05 | 0.0031 |
| Cadmium | 0.12 | 8.2E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.9E-06 | 1.9E-06 |
| Cobalt | 0.0060 | 3.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 5.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.9E-05 | 2.9E-05 |
| Nickel | 0.045 | 0.0010 | 0.046 |
| Phosphorus | 7.3E-10 | 4.2E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.4E-06 | 0.015 |
| Silver | 0.034 | 2.0E-04 | 0.035 |
| Thallium | 0.029 | 2.3E-04 | 0.029 |
| Tin | 0.0015 | 5.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 6.8E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.8E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.2E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.2E-07 | 0.0023 |
| Fluorene[a] | - | 1.8E-08 | 1.8E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.2E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.4E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.1E-09 | 1.1E-09 |
| Hexachlorobenzene | 0.0021 | 1.2E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 7.9E-10 | 7.9E-10 |
| Pentachlorophenol | 8.2E-04 | 2.4E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.2E-08 | 3.2E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.3E-09 | 2.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.3E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 4.7E-11 | 0.12 |
| Benzene | 0.13 | 6.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 7.8E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.4E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.1E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.2E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.0E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.6E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 9.6E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.2E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.9E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.3E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.7E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0033 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.2E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 5.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.0E-05 | 4.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.4E-04 | 3.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0015 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 9.0E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.0E-05 | 0.015 |
| Arsenic | 0.12 | 2.1E-05 | 0.12 |
| Barium | 0.0049 | 1.6E-06 | 0.0050 |
| Beryllium | 0.043 | 3.5E-05 | 0.043 |
| Boron | 0.0031 | 2.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0010 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.4E-06 | 2.4E-06 |
| Cobalt | 0.0060 | 4.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.4E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 3.7E-05 | 3.7E-05 |
| Nickel | 0.045 | 0.0013 | 0.046 |
| Phosphorus | 7.3E-10 | 5.4E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.8E-06 | 0.015 |
| Silver | 0.034 | 2.5E-04 | 0.035 |
| Thallium | 0.029 | 2.9E-04 | 0.030 |
| Tin | 0.0015 | 6.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 8.7E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.8E-07 | 0.0023 |
| Fluorene[a] | - | 2.3E-08 | 2.3E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.3E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.4E-09 | 1.4E-09 |
| Hexachlorobenzene | 0.0021 | 1.5E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.0E-09 | 1.0E-09 |
| Pentachlorophenol | 8.2E-04 | 3.1E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.1E-08 | 4.1E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.9E-09 | 2.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 6.0E-11 | 0.12 |
| Benzene | 0.13 | 7.7E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 9.9E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 9.4E-05 | 0.0054 |
| Bromoform | 0.0046 | 1.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.4E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 7.7E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.9E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 7.5E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 6.8E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.3E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0042 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.4E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.6E-05 | 2.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.2E-04 | 2.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 9.7E-04 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 5.8E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 6.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.3E-05 | 0.12 |
| Barium | 0.0049 | 1.0E-06 | 0.0049 |
| Beryllium | 0.043 | 2.3E-05 | 0.043 |
| Boron | 0.0031 | 1.5E-05 | 0.0031 |
| Cadmium | 0.12 | 6.7E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.5E-06 | 1.5E-06 |
| Cobalt | 0.0060 | 2.8E-05 | 0.0060 |
| Lead[c] | 0.0066 | 4.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.4E-05 | 2.4E-05 |
| Nickel | 0.045 | 8.4E-04 | 0.046 |
| Phosphorus | 7.3E-10 | 3.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.2E-06 | 0.015 |
| Silver | 0.034 | 1.6E-04 | 0.034 |
| Thallium | 0.029 | 1.9E-04 | 0.029 |
| Tin | 0.0015 | 4.2E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 5.6E-07 | 7.7E-04 |
| Zinc | 0.0051 | 1.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.9E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.8E-07 | 0.0023 |
| Fluorene[a] | - | 1.5E-08 | 1.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.7E-08 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.8E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.8E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 9.4E-10 | 9.4E-10 |
| Hexachlorobenzene | 0.0021 | 9.9E-07 | 0.0021 |
| Pentachlorobenzene[a] | - | 6.5E-10 | 6.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.6E-08 | 2.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.9E-09 | 1.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.9E-11 | 0.12 |
| Benzene | 0.13 | 5.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 6.4E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 6.1E-05 | 0.0054 |
| Bromoform | 0.0046 | 6.7E-06 | 0.0046 |
| Bromomethane | 0.020 | 3.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 8.4E-09 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.4E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.1E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.5E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.9E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.6E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.4E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 4.7E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0027 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.6E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.6E-05 | 7.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.3E-04 | 6.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0028 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0017 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.9E-05 | 0.015 |
| Arsenic | 0.12 | 3.9E-05 | 0.12 |
| Barium | 0.0049 | 3.0E-06 | 0.0050 |
| Beryllium | 0.043 | 6.7E-05 | 0.043 |
| Boron | 0.0031 | 4.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.5E-06 | 4.5E-06 |
| Cobalt | 0.0060 | 8.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.4E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.0E-05 | 7.0E-05 |
| Nickel | 0.045 | 0.0024 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.4E-06 | 0.015 |
| Silver | 0.034 | 4.7E-04 | 0.035 |
| Thallium | 0.029 | 5.5E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.3E-07 | 0.0023 |
| Fluorene[a] | - | 4.4E-08 | 4.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.7E-09 | 2.7E-09 |
| Hexachlorobenzene | 0.0021 | 2.9E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.9E-09 | 1.9E-09 |
| Pentachlorophenol | 8.2E-04 | 5.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.7E-08 | 7.7E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.4E-09 | 5.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.1E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.4E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.3E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0079 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.4E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.9E-04 | 2.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.7E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.7E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 2.0E-05 | 0.0031 |
| Cadmium | 0.12 | 8.9E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.4E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.2E-05 | 3.2E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.5E-04 | 0.030 |
| Tin | 0.0015 | 5.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.4E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.6E-10 | 8.6E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-08 | 3.5E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-09 | 2.5E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.1E-11 | 0.12 |
| Benzene | 0.13 | 6.6E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.5E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 8.0E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.8E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.4E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.8E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.2E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0036 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.4E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.3E-05 | 5.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.4E-04 | 4.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0020 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0012 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.7E-05 | 0.12 |
| Barium | 0.0049 | 2.1E-06 | 0.0050 |
| Beryllium | 0.043 | 4.6E-05 | 0.043 |
| Boron | 0.0031 | 3.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0014 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.1E-06 | 3.1E-06 |
| Cobalt | 0.0060 | 5.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.7E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.9E-05 | 4.9E-05 |
| Nickel | 0.045 | 0.0017 | 0.047 |
| Phosphorus | 7.3E-10 | 7.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.3E-06 | 0.015 |
| Silver | 0.034 | 3.3E-04 | 0.035 |
| Thallium | 0.029 | 3.8E-04 | 0.030 |
| Tin | 0.0015 | 8.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 7.9E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 5.4E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.0E-08 | 3.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 3.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.4E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 5.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 3.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.9E-09 | 1.9E-09 |
| Hexachlorobenzene | 0.0021 | 2.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.3E-09 | 1.3E-09 |
| Pentachlorophenol | 8.2E-04 | 4.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 5.3E-08 | 5.3E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.8E-09 | 3.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 7.2E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.8E-11 | 0.12 |
| Benzene | 0.13 | 1.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.3E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 7.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 5.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 4.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 5.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 9.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 8.9E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 4.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 9.5E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0055 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.7E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.7E-05 | 3.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.1E-04 | 3.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0014 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 8.2E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 9.3E-06 | 0.015 |
| Arsenic | 0.12 | 1.9E-05 | 0.12 |
| Barium | 0.0049 | 1.4E-06 | 0.0049 |
| Beryllium | 0.043 | 3.2E-05 | 0.043 |
| Boron | 0.0031 | 2.1E-05 | 0.0031 |
| Cadmium | 0.12 | 9.5E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.2E-06 | 2.2E-06 |
| Cobalt | 0.0060 | 3.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.4E-05 | 3.4E-05 |
| Nickel | 0.045 | 0.0012 | 0.046 |
| Phosphorus | 7.3E-10 | 4.9E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.6E-06 | 0.015 |
| Silver | 0.034 | 2.3E-04 | 0.035 |
| Thallium | 0.029 | 2.7E-04 | 0.030 |
| Tin | 0.0015 | 6.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.9E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.5E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.8E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.6E-07 | 0.0023 |
| Fluorene[a] | - | 2.1E-08 | 2.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.6E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.0E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.3E-09 | 1.3E-09 |
| Hexachlorobenzene | 0.0021 | 1.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 9.2E-10 | 9.2E-10 |
| Pentachlorophenol | 8.2E-04 | 2.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.7E-08 | 3.7E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.6E-09 | 2.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.0E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.5E-11 | 0.12 |
| Benzene | 0.13 | 7.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 9.1E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 8.6E-05 | 0.0054 |
| Bromoform | 0.0046 | 9.4E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.9E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.0E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 7.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 6.2E-09 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.0E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.1E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.6E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0038 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.4E-05 | 6.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.3E-04 | 5.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0024 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0014 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.6E-05 | 0.015 |
| Arsenic | 0.12 | 3.3E-05 | 0.12 |
| Barium | 0.0049 | 2.5E-06 | 0.0050 |
| Beryllium | 0.043 | 5.6E-05 | 0.043 |
| Boron | 0.0031 | 3.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0016 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.8E-06 | 3.8E-06 |
| Cobalt | 0.0060 | 6.8E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.2E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 5.9E-05 | 5.9E-05 |
| Nickel | 0.045 | 0.0021 | 0.047 |
| Phosphorus | 7.3E-10 | 8.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.8E-06 | 0.015 |
| Silver | 0.034 | 3.9E-04 | 0.035 |
| Thallium | 0.029 | 4.6E-04 | 0.030 |
| Tin | 0.0015 | 1.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 4.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 9.6E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.5E-07 | 0.0023 |
| Fluorene[a] | - | 3.7E-08 | 3.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 3.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 6.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.3E-09 | 2.3E-09 |
| Hexachlorobenzene | 0.0021 | 2.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.6E-09 | 1.6E-09 |
| Pentachlorophenol | 8.2E-04 | 4.9E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.5E-08 | 6.5E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.6E-09 | 4.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 8.7E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.5E-11 | 0.12 |
| Benzene | 0.13 | 1.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.6E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 8.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.3E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.2E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.1E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0066 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.2E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.0E-05 | 7.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.8E-04 | 5.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0026 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.8E-05 | 0.015 |
| Arsenic | 0.12 | 3.6E-05 | 0.12 |
| Barium | 0.0049 | 2.7E-06 | 0.0050 |
| Beryllium | 0.043 | 6.2E-05 | 0.043 |
| Boron | 0.0031 | 4.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0018 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.1E-06 | 4.1E-06 |
| Cobalt | 0.0060 | 7.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.5E-05 | 6.5E-05 |
| Nickel | 0.045 | 0.0023 | 0.047 |
| Phosphorus | 7.3E-10 | 9.3E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.1E-06 | 0.015 |
| Silver | 0.034 | 4.3E-04 | 0.035 |
| Thallium | 0.029 | 5.1E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.2E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.2E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.9E-07 | 0.0023 |
| Fluorene[a] | - | 4.1E-08 | 4.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.5E-09 | 2.5E-09 |
| Hexachlorobenzene | 0.0021 | 2.7E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.3E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.1E-08 | 7.1E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.0E-09 | 5.0E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.0E-10 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.6E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.3E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.6E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.8E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0073 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Max GLC** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.6E-09 |
| Beryllium | 7.1E-07 | 1.2E-09 |
| Cadmium | 5.9E-06 | 1.0E-07 |
| Chromium (hexavalent)[a] | - | 3.5E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.4E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 6.1E-16 |
| Benzene | 3.1E-05 | 3.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 9.4E-12 |
| Chloroform | 3.7E-06 | 1.7E-11 |
| Dichloromethane | 3.6E-07 | 1.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.5E-10 |
| Formaldehyde | 8.8E-06 | 3.7E-10 |
| Tetrachloroethene | 1.4E-06 | 4.3E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.4E-13 |
| Vinyl chloride | 3.2E-08 | 5.6E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.7E-10 |
| Lung Carcinogens | 4.7E-05 | 1.8E-07 |
| Skin Carcinogens | 2.1E-05 | 4.0E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Schools** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.1E-09 |
| Beryllium | 7.1E-07 | 5.0E-10 |
| Cadmium | 5.9E-06 | 4.3E-08 |
| Chromium (hexavalent)[a] | - | 1.5E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.0E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.6E-16 |
| Benzene | 3.1E-05 | 1.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 4.1E-12 |
| Chloroform | 3.7E-06 | 7.4E-12 |
| Dichloromethane | 3.6E-07 | 5.2E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.5E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-10 |
| Tetrachloroethene | 1.4E-06 | 1.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-13 |
| Vinyl chloride | 3.2E-08 | 2.4E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.3E-10 |
| Lung Carcinogens | 4.7E-05 | 7.6E-08 |
| Skin Carcinogens | 2.1E-05 | 1.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Daycares** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.1E-09 |
| Beryllium | 7.1E-07 | 5.0E-10 |
| Cadmium | 5.9E-06 | 4.3E-08 |
| Chromium (hexavalent)[a] | - | 1.5E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 5.9E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.6E-16 |
| Benzene | 3.1E-05 | 1.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 4.0E-12 |
| Chloroform | 3.7E-06 | 7.3E-12 |
| Dichloromethane | 3.6E-07 | 5.2E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.5E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-10 |
| Tetrachloroethene | 1.4E-06 | 1.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-13 |
| Vinyl chloride | 3.2E-08 | 2.4E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.3E-10 |
| Lung Carcinogens | 4.7E-05 | 7.6E-08 |
| Skin Carcinogens | 2.1E-05 | 1.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Farms** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.6E-09 |
| Beryllium | 7.1E-07 | 1.2E-09 |
| Cadmium | 5.9E-06 | 1.0E-07 |
| Chromium (hexavalent)[a] | - | 3.5E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 6.1E-16 |
| Benzene | 3.1E-05 | 3.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 9.4E-12 |
| Chloroform | 3.7E-06 | 1.7E-11 |
| Dichloromethane | 3.6E-07 | 1.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.5E-10 |
| Formaldehyde | 8.8E-06 | 3.7E-10 |
| Tetrachloroethene | 1.4E-06 | 4.3E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.4E-13 |
| Vinyl chloride | 3.2E-08 | 5.6E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.8E-10 |
| Lung Carcinogens | 4.7E-05 | 1.8E-07 |
| Skin Carcinogens | 2.1E-05 | 4.0E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Current/Future Commercial/Industrial 140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.2E-09 |
| Beryllium | 7.1E-07 | 9.9E-10 |
| Cadmium | 5.9E-06 | 8.5E-08 |
| Chromium (hexavalent)[a] | - | 3.0E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.2E-16 |
| Benzene | 3.1E-05 | 3.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 8.0E-12 |
| Chloroform | 3.7E-06 | 1.5E-11 |
| Dichloromethane | 3.6E-07 | 1.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.0E-10 |
| Formaldehyde | 8.8E-06 | 3.1E-10 |
| Tetrachloroethene | 1.4E-06 | 3.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 3.8E-13 |
| Vinyl chloride | 3.2E-08 | 4.8E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 6.6E-10 |
| Lung Carcinogens | 4.7E-05 | 1.5E-07 |
| Skin Carcinogens | 2.1E-05 | 3.4E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Park/Recreational** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.6E-09 |
| Beryllium | 7.1E-07 | 1.2E-09 |
| Cadmium | 5.9E-06 | 1.0E-07 |
| Chromium (hexavalent)[a] | - | 3.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 6.1E-16 |
| Benzene | 3.1E-05 | 3.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 9.5E-12 |
| Chloroform | 3.7E-06 | 1.7E-11 |
| Dichloromethane | 3.6E-07 | 1.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.6E-10 |
| Formaldehyde | 8.8E-06 | 3.7E-10 |
| Tetrachloroethene | 1.4E-06 | 4.3E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.4E-13 |
| Vinyl chloride | 3.2E-08 | 5.6E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.8E-10 |
| Lung Carcinogens | 4.7E-05 | 1.8E-07 |
| Skin Carcinogens | 2.1E-05 | 4.0E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Hospitals** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 9.6E-10 |
| Beryllium | 7.1E-07 | 4.3E-10 |
| Cadmium | 5.9E-06 | 3.7E-08 |
| Chromium (hexavalent)[a] | - | 1.3E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 5.1E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 8.7E-14 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.2E-16 |
| Benzene | 3.1E-05 | 1.3E-10 |
| Carbon tetrachloride | 9.2E-06 | 3.4E-12 |
| Chloroform | 3.7E-06 | 6.3E-12 |
| Dichloromethane | 3.6E-07 | 4.4E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.3E-10 |
| Formaldehyde | 8.8E-06 | 1.3E-10 |
| Tetrachloroethene | 1.4E-06 | 1.6E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.6E-13 |
| Vinyl chloride | 3.2E-08 | 2.1E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.8E-10 |
| Lung Carcinogens | 4.7E-05 | 6.5E-08 |
| Skin Carcinogens | 2.1E-05 | 1.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Retirement Homes** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.1E-09 |
| Beryllium | 7.1E-07 | 4.7E-10 |
| Cadmium | 5.9E-06 | 4.0E-08 |
| Chromium (hexavalent)[a] | - | 1.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 5.5E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.4E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 9.5E-14 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.5E-16 |
| Benzene | 3.1E-05 | 1.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 3.8E-12 |
| Chloroform | 3.7E-06 | 6.8E-12 |
| Dichloromethane | 3.6E-07 | 4.8E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.4E-10 |
| Formaldehyde | 8.8E-06 | 1.5E-10 |
| Tetrachloroethene | 1.4E-06 | 1.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.8E-13 |
| Vinyl chloride | 3.2E-08 | 2.2E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.1E-10 |
| Lung Carcinogens | 4.7E-05 | 7.1E-08 |
| Skin Carcinogens | 2.1E-05 | 1.6E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Bowmanville** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.3E-09 |
| Beryllium | 7.1E-07 | 6.0E-10 |
| Cadmium | 5.9E-06 | 5.1E-08 |
| Chromium (hexavalent)[a] | - | 1.8E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.8E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 7.1E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.8E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 3.1E-16 |
| Benzene | 3.1E-05 | 1.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 4.8E-12 |
| Chloroform | 3.7E-06 | 8.7E-12 |
| Dichloromethane | 3.6E-07 | 6.2E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.8E-10 |
| Formaldehyde | 8.8E-06 | 1.9E-10 |
| Tetrachloroethene | 1.4E-06 | 2.2E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.2E-13 |
| Vinyl chloride | 3.2E-08 | 2.9E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 4.0E-10 |
| Lung Carcinogens | 4.7E-05 | 9.0E-08 |
| Skin Carcinogens | 2.1E-05 | 2.1E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 8.7E-10 |
| Beryllium | 7.1E-07 | 3.9E-10 |
| Cadmium | 5.9E-06 | 3.3E-08 |
| Chromium (hexavalent)[a] | - | 1.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.6E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.1E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 7.8E-14 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.0E-16 |
| Benzene | 3.1E-05 | 1.2E-10 |
| Carbon tetrachloride | 9.2E-06 | 3.1E-12 |
| Chloroform | 3.7E-06 | 5.7E-12 |
| Dichloromethane | 3.6E-07 | 4.0E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.2E-10 |
| Formaldehyde | 8.8E-06 | 1.2E-10 |
| Tetrachloroethene | 1.4E-06 | 1.4E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.5E-13 |
| Vinyl chloride | 3.2E-08 | 1.8E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.6E-10 |
| Lung Carcinogens | 4.7E-05 | 5.8E-08 |
| Skin Carcinogens | 2.1E-05 | 1.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Rd. Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.5E-09 |
| Beryllium | 7.1E-07 | 1.1E-09 |
| Cadmium | 5.9E-06 | 9.6E-08 |
| Chromium (hexavalent)[a] | - | 3.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.3E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.9E-16 |
| Benzene | 3.1E-05 | 3.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 9.0E-12 |
| Chloroform | 3.7E-06 | 1.6E-11 |
| Dichloromethane | 3.6E-07 | 1.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.4E-10 |
| Formaldehyde | 8.8E-06 | 3.5E-10 |
| Tetrachloroethene | 1.4E-06 | 4.1E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.2E-13 |
| Vinyl chloride | 3.2E-08 | 5.4E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.4E-10 |
| Lung Carcinogens | 4.7E-05 | 1.7E-07 |
| Skin Carcinogens | 2.1E-05 | 3.9E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Maple Grove** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.2E-09 |
| Beryllium | 7.1E-07 | 5.1E-10 |
| Cadmium | 5.9E-06 | 4.4E-08 |
| Chromium (hexavalent)[a] | - | 1.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.1E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.7E-16 |
| Benzene | 3.1E-05 | 1.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 4.1E-12 |
| Chloroform | 3.7E-06 | 7.5E-12 |
| Dichloromethane | 3.6E-07 | 5.3E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.5E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-10 |
| Tetrachloroethene | 1.4E-06 | 1.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-13 |
| Vinyl chloride | 3.2E-08 | 2.4E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.4E-10 |
| Lung Carcinogens | 4.7E-05 | 7.7E-08 |
| Skin Carcinogens | 2.1E-05 | 1.8E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Oshawa Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.8E-09 |
| Beryllium | 7.1E-07 | 7.8E-10 |
| Cadmium | 5.9E-06 | 6.7E-08 |
| Chromium (hexavalent)[a] | - | 2.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 9.2E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.1E-16 |
| Benzene | 3.1E-05 | 2.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 6.3E-12 |
| Chloroform | 3.7E-06 | 1.1E-11 |
| Dichloromethane | 3.6E-07 | 8.1E-11 |
| Ethylene Dibromide | 1.1E-06 | 2.4E-10 |
| Formaldehyde | 8.8E-06 | 2.4E-10 |
| Tetrachloroethene | 1.4E-06 | 2.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.9E-13 |
| Vinyl chloride | 3.2E-08 | 3.7E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 5.2E-10 |
| Lung Carcinogens | 4.7E-05 | 1.2E-07 |
| Skin Carcinogens | 2.1E-05 | 2.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Port Darlington** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.2E-09 |
| Beryllium | 7.1E-07 | 5.4E-10 |
| Cadmium | 5.9E-06 | 4.7E-08 |
| Chromium (hexavalent)[a] | - | 1.7E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.7E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.5E-10 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.1E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.9E-16 |
| Benzene | 3.1E-05 | 1.6E-10 |
| Carbon tetrachloride | 9.2E-06 | 4.4E-12 |
| Chloroform | 3.7E-06 | 8.0E-12 |
| Dichloromethane | 3.6E-07 | 5.6E-11 |
| Ethylene Dibromide | 1.1E-06 | 1.7E-10 |
| Formaldehyde | 8.8E-06 | 1.7E-10 |
| Tetrachloroethene | 1.4E-06 | 2.0E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.1E-13 |
| Vinyl chloride | 3.2E-08 | 2.6E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.6E-10 |
| Lung Carcinogens | 4.7E-05 | 8.2E-08 |
| Skin Carcinogens | 2.1E-05 | 1.9E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Solina Rd.** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.1E-09 |
| Beryllium | 7.1E-07 | 9.4E-10 |
| Cadmium | 5.9E-06 | 8.1E-08 |
| Chromium (hexavalent)[a] | - | 2.9E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.9E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.8E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 1.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.9E-16 |
| Benzene | 3.1E-05 | 2.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.6E-12 |
| Chloroform | 3.7E-06 | 1.4E-11 |
| Dichloromethane | 3.6E-07 | 9.7E-11 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 3.0E-10 |
| Tetrachloroethene | 1.4E-06 | 3.5E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 3.6E-13 |
| Vinyl chloride | 3.2E-08 | 4.5E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 6.3E-10 |
| Lung Carcinogens | 4.7E-05 | 1.4E-07 |
| Skin Carcinogens | 2.1E-05 | 3.2E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Tooley** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.3E-09 |
| Beryllium | 7.1E-07 | 1.0E-09 |
| Cadmium | 5.9E-06 | 8.9E-08 |
| Chromium (hexavalent)[a] | - | 3.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.1E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.1E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.4E-16 |
| Benzene | 3.1E-05 | 3.1E-10 |
| Carbon tetrachloride | 9.2E-06 | 8.4E-12 |
| Chloroform | 3.7E-06 | 1.5E-11 |
| Dichloromethane | 3.6E-07 | 1.1E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.2E-10 |
| Formaldehyde | 8.8E-06 | 3.3E-10 |
| Tetrachloroethene | 1.4E-06 | 3.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 3.9E-13 |
| Vinyl chloride | 3.2E-08 | 5.0E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 6.9E-10 |
| Lung Carcinogens | 4.7E-05 | 1.6E-07 |
| Skin Carcinogens | 2.1E-05 | 3.6E-09 |

[a] Baseline Data Not Available

# APPENDIX I-2

Inhalation Results – Upset Operations (Process Upset Case) – 140,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0061 | 0.0061 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.011 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.44 | 0.44 | - | 0.23 | 0.23 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.18 | 0.34 | 0.29 | 0.049 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.18 | 0.86 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.044 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.29 | 0.32 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0020 | 0.0035 | 1.2E-04 | 5.5E-05 | 1.8E-04 |
| Arsenic | 0.022 | 0.0076 | 0.030 | 0.0060 | 7.0E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.1E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.060 | 0.097 | 0.030 | 0.017 | 0.047 |
| Boron[c] | 0.0037 | 0.011 | 0.015 | - | - | - |
| Cadmium | 0.015 | 0.25 | 0.27 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.012 | 0.012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0082 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.11 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.13 | 0.0100 | 0.050 | 0.060 |
| Mercury - Inorganic[a] | - | 0.091 | 0.091 | - | 0.0038 | 0.0038 |
| Nickel[c] | 0.0018 | 0.053 | 0.054 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.7E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.15 | - | - | - |
| Tin | 3.7E-04 | 0.0032 | 0.0036 | 3.0E-04 | 8.8E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0084 | 0.016 | 0.0015 | 5.8E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.017 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.3E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.0E-04 | 6.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.7E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.8E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.0E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.5E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.6E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0060 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0026 | 0.0036 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.4E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.0E-07 | 7.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.5E-04 | 0.0014 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.9E-07 | 4.9E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-04 | 5.8E-04 | 4.4E-05 | 5.2E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.7E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.2E-10 | 0.0035 |
| Benzene | 0.17 | 6.6E-04 | 0.17 | 0.41 | 5.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.046 | 0.048 | - | - | - |
| Bromoform | 0.0014 | 0.0050 | 0.0064 | 5.4E-04 | 6.3E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0011 | 0.0029 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 9.0E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.8E-06 | 3.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.6E-05 | 2.7E-04 | 0.0058 | 4.0E-04 | 0.0062 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-04 | 0.0035 | 0.0017 | 6.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.052 | 3.7E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.9E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.0E-06 | 6.1E-05 | 0.0014 | 7.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.9E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.8E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.3E-06 | 0.0024 | 0.045 | 2.1E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.9E-06 | 8.6E-06 | 0.0059 | 0.022 | 0.028 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-04 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0071 | 0.012 | 0.0083 | 4.5E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0083 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.5 | 1.9 | 1.1 | 0.77 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0031 | 0.0031 | - | 0.0100 | 0.0100 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0054 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.083 | 0.083 |
| Hydrogen Fluoride (HF)[ac] | - | 0.065 | 0.065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.089 | 0.25 | 0.29 | 0.018 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.069 | 0.069 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.029 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.038 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-04 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0038 | 0.026 | 0.0060 | 2.6E-04 | 0.0063 |
| Barium | 0.0040 | 7.7E-04 | 0.0047 | 8.2E-04 | 3.9E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.030 | 0.067 | 0.030 | 0.0061 | 0.036 |
| Boron[c] | 0.0037 | 0.0055 | 0.0092 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.14 | 0.024 | 0.052 | 0.076 |
| Chromium (hexavalent)[ac] | - | 0.0058 | 0.0058 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0041 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.052 | 0.060 | 0.0060 | 0.011 | 0.017 |
| Lead | 0.0081 | 0.060 | 0.068 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.045 | 0.045 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.026 | 0.028 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.3E-04 | 0.0041 | 3.0E-04 | 8.9E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.061 | 0.069 | 3.4E-04 | 6.2E-04 | 9.6E-04 |
| Thallium[c] | 0.0073 | 0.071 | 0.078 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.3E-04 |
| Vanadium | 0.0075 | 0.0042 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0072 | 0.0093 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.8E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 4.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.7E-06 | 5.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Schools**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0070 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0013 | 0.0023 | 2.8E-04 | 8.9E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-07 | 9.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-04 | 9.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-07 | 2.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-07 | 2.8E-04 | 1.1E-04 | 2.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.7E-10 | 0.0035 |
| Benzene | 0.17 | 3.3E-04 | 0.17 | 0.41 | 2.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.023 | 0.025 | - | - | - |
| Bromoform | 0.0014 | 0.0025 | 0.0039 | 5.4E-04 | 2.3E-04 | 7.7E-04 |
| Bromomethane | 0.0018 | 5.4E-04 | 0.0023 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.0E-06 | 0.014 | 0.31 | 3.3E-05 | 0.31 |
| Chloroform | 0.0055 | 9.2E-06 | 0.0055 | 0.23 | 9.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-05 | 2.4E-04 | 0.0058 | 1.5E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.8E-04 | 0.0033 | 0.0017 | 2.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0057 | 0.55 | 0.052 | 1.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-06 | 9.6E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-07 | 6.0E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-07 | 3.1E-05 | 1.9E-05 | 4.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-06 | 0.0024 | 0.045 | 7.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.9E-06 | 4.7E-06 | 0.0059 | 0.0080 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-05 | 5.8E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0035 | 0.0084 | 0.0083 | 1.7E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0041 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.77 | 1.1 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0010 | 0.027 | 0.55 | 4.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0032 | 0.0032 | - | 0.0098 | 0.0098 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0056 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.082 | 0.082 |
| Hydrogen Fluoride (HF)[ac] | - | 0.067 | 0.067 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.018 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.073 | 0.073 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.12 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.030 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.037 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0010 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0039 | 0.026 | 0.0060 | 2.5E-04 | 0.0063 |
| Barium | 0.0040 | 7.9E-04 | 0.0048 | 8.2E-04 | 3.8E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.031 | 0.068 | 0.030 | 0.0060 | 0.036 |
| Boron[c] | 0.0037 | 0.0057 | 0.0094 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.15 | 0.024 | 0.051 | 0.075 |
| Chromium (hexavalent)[ac] | - | 0.0060 | 0.0060 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0042 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.054 | 0.062 | 0.0060 | 0.010 | 0.017 |
| Lead | 0.0081 | 0.062 | 0.070 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.047 | 0.047 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.027 | 0.029 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.5E-04 | 0.0041 | 3.0E-04 | 8.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.063 | 0.071 | 3.4E-04 | 6.1E-04 | 9.5E-04 |
| Thallium[c] | 0.0073 | 0.073 | 0.080 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.2E-04 |
| Vanadium | 0.0075 | 0.0043 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0075 | 0.0095 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.7E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.6E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.1E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 5.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.9E-06 | 5.9E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.8E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.4E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.6E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.5E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0069 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0024 | 2.8E-04 | 8.7E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.6E-07 | 3.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-04 | 9.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-07 | 2.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.7E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-07 | 2.8E-04 | 1.1E-04 | 2.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.6E-10 | 0.0035 |
| Benzene | 0.17 | 3.4E-04 | 0.17 | 0.41 | 1.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.024 | 0.026 | - | - | - |
| Bromoform | 0.0014 | 0.0026 | 0.0040 | 5.4E-04 | 2.3E-04 | 7.6E-04 |
| Bromomethane | 0.0018 | 5.6E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.2E-06 | 0.014 | 0.31 | 3.2E-05 | 0.31 |
| Chloroform | 0.0055 | 9.5E-06 | 0.0055 | 0.23 | 9.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.0E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-05 | 2.4E-04 | 0.0058 | 1.4E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-04 | 0.0034 | 0.0017 | 2.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0059 | 0.55 | 0.052 | 1.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-06 | 9.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.3E-07 | 6.1E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-07 | 3.1E-05 | 1.9E-05 | 4.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-06 | 0.0024 | 0.045 | 7.4E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-06 | 4.8E-06 | 0.0059 | 0.0079 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.1E-05 | 5.9E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0037 | 0.0085 | 0.0083 | 1.6E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0043 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.79 | 1.1 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 4.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0051 | 0.0051 | - | 0.021 | 0.021 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0091 | 0.078 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.36 | 0.36 | - | 0.18 | 0.18 |
| Hydrogen Fluoride (HF)[ac] | - | 0.11 | 0.11 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.15 | 0.31 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.25 | 0.27 | 0.070 | 0.080 | 0.15 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0017 | 0.0031 | 1.2E-04 | 4.3E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0064 | 0.028 | 0.0060 | 5.5E-04 | 0.0066 |
| Barium | 0.0040 | 0.0013 | 0.0053 | 8.2E-04 | 8.3E-05 | 9.0E-04 |
| Beryllium | 0.037 | 0.051 | 0.087 | 0.030 | 0.013 | 0.043 |
| Boron[c] | 0.0037 | 0.0093 | 0.013 | - | - | - |
| Cadmium | 0.015 | 0.21 | 0.23 | 0.024 | 0.11 | 0.13 |
| Chromium (hexavalent)[ac] | - | 0.0097 | 0.0097 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0068 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.088 | 0.095 | 0.0060 | 0.023 | 0.029 |
| Lead | 0.0081 | 0.10 | 0.11 | 0.0100 | 0.039 | 0.049 |
| Mercury - Inorganic[a] | - | 0.076 | 0.076 | - | 0.0030 | 0.0030 |
| Nickel[c] | 0.0018 | 0.044 | 0.046 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.3E-04 | 0.0044 | 3.0E-04 | 1.9E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.10 | 0.11 | 3.4E-04 | 0.0013 | 0.0017 |
| Thallium[c] | 0.0073 | 0.12 | 0.13 | - | - | - |
| Tin | 3.7E-04 | 0.0027 | 0.0030 | 3.0E-04 | 6.9E-04 | 1.0E-03 |
| Vanadium | 0.0075 | 0.0071 | 0.015 | 0.0015 | 4.6E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.012 | 0.014 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 5.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.4E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.5E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.1E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.3E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.7E-04 | 8.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.5E-04 | 6.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0014 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.3E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.3E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.5E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 9.5E-06 | 9.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.6E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 9.2E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.0E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0047 | 0.0095 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0022 | 0.0032 | 2.8E-04 | 1.9E-04 | 4.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.0E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.3E-04 | 0.0012 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.1E-07 | 4.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-04 | 5.5E-04 | 4.4E-05 | 4.1E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.9E-07 | 2.8E-04 | 1.1E-04 | 5.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.7E-10 | 0.0035 |
| Benzene | 0.17 | 5.5E-04 | 0.17 | 0.41 | 4.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.038 | 0.040 | - | - | - |
| Bromoform | 0.0014 | 0.0042 | 0.0056 | 5.4E-04 | 5.0E-04 | 0.0010 |
| Bromomethane | 0.0018 | 9.1E-04 | 0.0027 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-05 | 0.014 | 0.31 | 7.1E-05 | 0.31 |
| Chloroform | 0.0055 | 1.5E-05 | 0.0055 | 0.23 | 2.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.2E-06 | 3.7E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.8E-05 | 2.6E-04 | 0.0058 | 3.2E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 4.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-04 | 0.0035 | 0.0017 | 5.3E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0096 | 0.56 | 0.052 | 2.9E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.0E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 8.6E-07 | 6.1E-05 | 0.0014 | 6.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.1E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.8E-07 | 3.1E-05 | 1.9E-05 | 9.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.8E-06 | 0.0024 | 0.045 | 1.6E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.1E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 6.6E-06 | 7.3E-06 | 0.0059 | 0.017 | 0.023 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.3E-05 | 6.2E-04 | 0.0066 | 3.3E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0059 | 0.011 | 0.0083 | 3.5E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0069 | 0.015 | 0.0079 | 3.3E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 1.3 | 1.6 | 1.1 | 0.67 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0018 | 0.028 | 0.55 | 9.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0094 | 0.0094 | - | 0.035 | 0.035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.017 | 0.086 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.67 | 0.67 | - | 0.29 | 0.29 |
| Hydrogen Fluoride (HF)[ac] | - | 0.20 | 0.20 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.28 | 0.44 | 0.29 | 0.064 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.056 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.45 | 0.48 | 0.070 | 0.13 | 0.20 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0031 | 0.0045 | 1.2E-04 | 7.1E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.012 | 0.034 | 0.0060 | 9.1E-04 | 0.0069 |
| Barium | 0.0040 | 0.0024 | 0.0063 | 8.2E-04 | 1.4E-04 | 9.6E-04 |
| Beryllium | 0.037 | 0.093 | 0.13 | 0.030 | 0.022 | 0.052 |
| Boron[c] | 0.0037 | 0.017 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.39 | 0.41 | 0.024 | 0.18 | 0.21 |
| Chromium (hexavalent)[ac] | - | 0.018 | 0.018 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.013 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.16 | 0.17 | 0.0060 | 0.038 | 0.044 |
| Lead | 0.0081 | 0.19 | 0.19 | 0.0100 | 0.065 | 0.075 |
| Mercury - Inorganic[a] | - | 0.14 | 0.14 | - | 0.0049 | 0.0049 |
| Nickel[c] | 0.0018 | 0.081 | 0.083 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0050 | 3.0E-04 | 3.1E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.19 | 0.20 | 3.4E-04 | 0.0022 | 0.0025 |
| Thallium[c] | 0.0073 | 0.22 | 0.23 | - | - | - |
| Tin | 3.7E-04 | 0.0049 | 0.0053 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.013 | 0.021 | 0.0015 | 7.6E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.022 | 0.024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-04 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.1E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.5E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.3E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.1E-04 | 9.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.1E-04 | 8.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.6E-04 | 8.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0022 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.7E-05 | 7.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.2E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.6E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.4E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0011 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.6E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0078 | 0.013 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0040 | 0.0051 | 2.8E-04 | 3.1E-04 | 5.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.7E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0012 | 0.0018 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.6E-07 | 7.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.3E-04 | 6.6E-04 | 4.4E-05 | 6.7E-06 | 5.1E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.2E-07 | 2.8E-04 | 1.1E-04 | 8.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 9.4E-10 | 0.0035 |
| Benzene | 0.17 | 0.0010 | 0.17 | 0.41 | 7.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.070 | 0.073 | - | - | - |
| Bromoform | 0.0014 | 0.0077 | 0.0091 | 5.4E-04 | 8.2E-04 | 0.0014 |
| Bromomethane | 0.0018 | 0.0017 | 0.0035 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.8E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 2.8E-05 | 0.0055 | 0.23 | 3.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.7E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.5E-05 | 4.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.0E-05 | 2.9E-04 | 0.0058 | 5.2E-04 | 0.0063 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 6.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-04 | 0.0037 | 0.0017 | 8.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.018 | 0.57 | 0.052 | 4.8E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 9.1E-06 | 1.6E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.6E-06 | 6.2E-05 | 0.0014 | 1.0E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.9E-07 | 3.2E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.1E-06 | 0.0024 | 0.045 | 2.7E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.9E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.3E-05 | 0.0059 | 0.028 | 0.034 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.9E-04 | 0.0066 | 5.4E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.011 | 0.016 | 0.0083 | 5.8E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.013 | 0.021 | 0.0079 | 5.4E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 2.4 | 2.7 | 1.1 | 0.99 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0032 | 0.029 | 0.55 | 0.0015 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0059 | 0.0059 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.010 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.42 | 0.42 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.17 | 0.33 | 0.29 | 0.049 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.28 | 0.31 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0019 | 0.0034 | 1.2E-04 | 5.4E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0073 | 0.029 | 0.0060 | 6.9E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.058 | 0.095 | 0.030 | 0.016 | 0.047 |
| Boron[c] | 0.0037 | 0.011 | 0.014 | - | - | - |
| Cadmium | 0.015 | 0.24 | 0.26 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.011 | 0.011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0079 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.10 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.12 | 0.0100 | 0.049 | 0.059 |
| Mercury - Inorganic[a] | - | 0.087 | 0.087 | - | 0.0037 | 0.0037 |
| Nickel[c] | 0.0018 | 0.051 | 0.053 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.4E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0031 | 0.0034 | 3.0E-04 | 8.7E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0081 | 0.016 | 0.0015 | 5.7E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.1E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.7E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-04 | 7.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.9E-04 | 6.3E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.1E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.6E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.5E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.9E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.3E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.3E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.6E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.5E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0059 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0025 | 0.0035 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.8E-07 | 6.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.2E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.7E-07 | 4.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.7E-04 | 4.4E-05 | 5.1E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.5E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.1E-10 | 0.0035 |
| Benzene | 0.17 | 6.4E-04 | 0.17 | 0.41 | 5.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.044 | 0.046 | - | - | - |
| Bromoform | 0.0014 | 0.0048 | 0.0063 | 5.4E-04 | 6.2E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0010 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 8.9E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.4E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.4E-05 | 2.6E-04 | 0.0058 | 3.9E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.5E-04 | 0.0035 | 0.0017 | 6.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.052 | 3.6E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.7E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.9E-07 | 6.1E-05 | 0.0014 | 7.8E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.5E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.2E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.6E-06 | 8.3E-06 | 0.0059 | 0.022 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.6E-05 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0068 | 0.012 | 0.0083 | 4.4E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0080 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.5 | 1.8 | 1.1 | 0.78 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0020 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0020 | 0.0020 | - | 0.0082 | 0.0082 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0036 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.068 | 0.068 |
| Hydrogen Fluoride (HF)[ac] | - | 0.043 | 0.043 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.059 | 0.22 | 0.29 | 0.015 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.047 | 0.047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.079 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.097 | 0.12 | 0.070 | 0.031 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.5E-04 | 0.0021 | 1.2E-04 | 1.7E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0025 | 0.025 | 0.0060 | 2.1E-04 | 0.0062 |
| Barium | 0.0040 | 5.0E-04 | 0.0045 | 8.2E-04 | 3.2E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.020 | 0.057 | 0.030 | 0.0050 | 0.035 |
| Boron[c] | 0.0037 | 0.0036 | 0.0073 | - | - | - |
| Cadmium | 0.015 | 0.083 | 0.098 | 0.024 | 0.042 | 0.067 |
| Chromium (hexavalent)[ac] | - | 0.0038 | 0.0038 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0027 | 0.0094 | - | - | - |
| Cobalt | 0.0074 | 0.034 | 0.042 | 0.0060 | 0.0088 | 0.015 |
| Lead | 0.0081 | 0.040 | 0.048 | 0.0100 | 0.015 | 0.025 |
| Mercury - Inorganic[a] | - | 0.030 | 0.030 | - | 0.0011 | 0.0011 |
| Nickel[c] | 0.0018 | 0.017 | 0.019 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.9E-04 | 0.0040 | 3.0E-04 | 7.3E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.040 | 0.048 | 3.4E-04 | 5.1E-04 | 8.5E-04 |
| Thallium[c] | 0.0073 | 0.046 | 0.054 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 2.7E-04 | 5.7E-04 |
| Vanadium | 0.0075 | 0.0028 | 0.010 | 0.0015 | 1.8E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0047 | 0.0068 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.7E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 9.1E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.6E-05 | 7.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.5E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.8E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.1E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 9.0E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.7E-06 | 3.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.2E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0018 | 0.0066 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.6E-04 | 0.0019 | 2.8E-04 | 7.3E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 8.0E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.3E-07 | 2.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.5E-04 | 8.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.6E-07 | 1.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.9E-05 | 4.8E-04 | 4.4E-05 | 1.6E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 1.9E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.2E-10 | 0.0035 |
| Benzene | 0.17 | 2.2E-04 | 0.17 | 0.41 | 1.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.015 | 0.017 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0031 | 5.4E-04 | 1.9E-04 | 7.3E-04 |
| Bromomethane | 0.0018 | 3.6E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.9E-06 | 0.014 | 0.31 | 2.7E-05 | 0.31 |
| Chloroform | 0.0055 | 6.1E-06 | 0.0055 | 0.23 | 7.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.2E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.5E-05 | 2.3E-04 | 0.0058 | 1.2E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.6E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 2.0E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0038 | 0.55 | 0.052 | 1.1E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.4E-07 | 6.0E-05 | 0.0014 | 2.4E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.6E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.9E-07 | 3.1E-05 | 1.9E-05 | 3.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.1E-06 | 0.0024 | 0.045 | 6.2E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.6E-06 | 3.3E-06 | 0.0059 | 0.0066 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.3E-05 | 5.7E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0023 | 0.0072 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0027 | 0.011 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.50 | 0.83 | 1.1 | 0.26 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.9E-04 | 0.027 | 0.55 | 3.6E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.0073 | 0.0073 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.061 | 0.061 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.045 | 0.21 | 0.29 | 0.013 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.082 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.028 | 0.098 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 1.5E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.9E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.9E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0045 | 0.035 |
| Boron[c] | 0.0037 | 0.0028 | 0.0065 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.038 | 0.062 |
| Chromium (hexavalent)[ac] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.0079 | 0.014 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.014 | 0.024 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0010 | 0.0010 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 6.5E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 4.5E-04 | 8.0E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 7.9E-04 | 0.0012 | 3.0E-04 | 2.4E-04 | 5.4E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.6E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.6E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0016 | 0.0064 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 6.5E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.4E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 1.7E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.0E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.5E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.7E-04 | 7.1E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 2.4E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 6.9E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.1E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 1.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.052 | 9.9E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 2.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 5.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0059 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.1E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0018 | 0.0066 | 0.0083 | 1.2E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.1E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.38 | 0.71 | 1.1 | 0.24 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-04 | 0.027 | 0.55 | 3.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.011 | 0.011 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.091 | 0.091 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.045 | 0.21 | 0.29 | 0.020 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.038 | 0.038 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.063 | 0.74 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.016 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.041 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 2.2E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 2.8E-04 | 0.0063 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 4.3E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0068 | 0.037 |
| Boron[c] | 0.0037 | 0.0028 | 0.0065 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.057 | 0.081 |
| Chromium (hexavalent)[ac] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.012 | 0.018 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.020 | 0.030 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0015 | 0.0015 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 9.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 6.8E-04 | 0.0010 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 8.0E-04 | 0.0012 | 3.0E-04 | 3.6E-04 | 6.6E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 2.4E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 7.0E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0024 | 0.0072 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 9.8E-05 | 3.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 2.1E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 2.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.9E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 2.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 2.5E-04 | 7.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 3.6E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 1.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.6E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 2.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.052 | 1.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 3.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 4.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 8.3E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0088 | 0.015 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.7E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0018 | 0.0066 | 0.0083 | 1.8E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.7E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.38 | 0.71 | 1.1 | 0.30 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-04 | 0.027 | 0.55 | 4.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0025 | 0.0025 | - | 0.0090 | 0.0090 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.075 | 0.075 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.072 | 0.23 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.081 | 0.081 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.034 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.034 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 3.5E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0055 | 0.036 |
| Boron[c] | 0.0037 | 0.0045 | 0.0082 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.046 | 0.071 |
| Chromium (hexavalent)[ac] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.0096 | 0.016 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.017 | 0.027 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 8.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 5.6E-04 | 9.0E-04 |
| Thallium[c] | 0.0073 | 0.057 | 0.064 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 2.9E-04 | 5.9E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0058 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0020 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 8.0E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 1.7E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.4E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 1.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.018 | 0.021 | - | - | - |
| Bromoform | 0.0014 | 0.0020 | 0.0035 | 5.4E-04 | 2.1E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.8E-06 | 0.014 | 0.31 | 3.0E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 8.5E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.5E-04 | 0.0033 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.052 | 1.2E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.1E-07 | 6.0E-05 | 0.0014 | 2.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 3.9E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 6.8E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.0072 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 1.4E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0029 | 0.0077 | 0.0083 | 1.5E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 1.4E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.62 | 0.95 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-04 | 0.027 | 0.55 | 3.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0044 | 0.0044 | - | 0.026 | 0.026 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0079 | 0.077 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.31 | 0.31 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.094 | 0.094 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.13 | 0.29 | 0.29 | 0.047 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.19 | 0.87 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.047 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.21 | 0.24 | 0.070 | 0.098 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0014 | 0.0029 | 1.2E-04 | 5.3E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0055 | 0.028 | 0.0060 | 6.7E-04 | 0.0067 |
| Barium | 0.0040 | 0.0011 | 0.0051 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.044 | 0.080 | 0.030 | 0.016 | 0.046 |
| Boron[c] | 0.0037 | 0.0080 | 0.012 | - | - | - |
| Cadmium | 0.015 | 0.18 | 0.20 | 0.024 | 0.13 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.0084 | 0.0084 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0059 | 0.013 | - | - | - |
| Cobalt | 0.0074 | 0.076 | 0.083 | 0.0060 | 0.028 | 0.034 |
| Lead | 0.0081 | 0.087 | 0.095 | 0.0100 | 0.048 | 0.058 |
| Mercury - Inorganic[a] | - | 0.065 | 0.065 | - | 0.0036 | 0.0036 |
| Nickel[c] | 0.0018 | 0.038 | 0.040 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.3E-04 | 0.0043 | 3.0E-04 | 2.3E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.088 | 0.096 | 3.4E-04 | 0.0016 | 0.0020 |
| Thallium[c] | 0.0073 | 0.10 | 0.11 | - | - | - |
| Tin | 3.7E-04 | 0.0023 | 0.0027 | 3.0E-04 | 8.4E-04 | 0.0011 |
| Vanadium | 0.0075 | 0.0061 | 0.014 | 0.0015 | 5.6E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.010 | 0.013 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.8E-05 | 7.9E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.1E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.0E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.9E-05 | 7.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.2E-04 | 5.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.6E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.0E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.2E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 8.2E-06 | 8.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.9E-05 | 3.7E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.0E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 7.9E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.6E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0058 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0019 | 0.0029 | 2.8E-04 | 2.3E-04 | 5.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.8E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.1E-07 | 5.1E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.4E-04 | 0.0011 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.1E-04 | 5.3E-04 | 4.4E-05 | 5.0E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.4E-07 | 2.8E-04 | 1.1E-04 | 6.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.0E-10 | 0.0035 |
| Benzene | 0.17 | 4.8E-04 | 0.17 | 0.41 | 5.1E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.033 | 0.035 | - | - | - |
| Bromoform | 0.0014 | 0.0036 | 0.0050 | 5.4E-04 | 6.0E-04 | 0.0011 |
| Bromomethane | 0.0018 | 7.9E-04 | 0.0026 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.7E-06 | 0.014 | 0.31 | 8.6E-05 | 0.31 |
| Chloroform | 0.0055 | 1.3E-05 | 0.0055 | 0.23 | 2.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 7.0E-06 | 3.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.3E-05 | 2.5E-04 | 0.0058 | 3.8E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.0E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.7E-04 | 0.0034 | 0.0017 | 6.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0083 | 0.56 | 0.052 | 3.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 4.3E-06 | 1.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.4E-07 | 6.1E-05 | 0.0014 | 7.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.2E-07 | 3.1E-05 | 1.9E-05 | 1.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.4E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 5.7E-06 | 6.4E-06 | 0.0059 | 0.021 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 7.2E-05 | 6.1E-04 | 0.0066 | 4.0E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0051 | 0.0100 | 0.0083 | 4.3E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0060 | 0.014 | 0.0079 | 4.0E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.1 | 1.4 | 1.1 | 0.75 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0015 | 0.028 | 0.55 | 0.0011 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.0067 | 0.0067 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.056 | 0.056 |
| Hydrogen Fluoride (HF)[ac] | - | 0.032 | 0.032 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.044 | 0.21 | 0.29 | 0.012 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.059 | 0.059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.099 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.025 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.072 | 0.10 | 0.070 | 0.025 | 0.096 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.9E-04 | 0.0020 | 1.2E-04 | 1.4E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.7E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.6E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0042 | 0.034 |
| Boron[c] | 0.0037 | 0.0027 | 0.0064 | - | - | - |
| Cadmium | 0.015 | 0.062 | 0.077 | 0.024 | 0.035 | 0.059 |
| Chromium (hexavalent)[ac] | - | 0.0028 | 0.0028 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.033 | 0.0060 | 0.0072 | 0.013 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.012 | 0.022 |
| Mercury - Inorganic[a] | - | 0.022 | 0.022 | - | 9.3E-04 | 9.3E-04 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.1E-04 | 0.0039 | 3.0E-04 | 6.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.038 | 3.4E-04 | 4.2E-04 | 7.6E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.042 | - | - | - |
| Tin | 3.7E-04 | 7.8E-04 | 0.0011 | 3.0E-04 | 2.2E-04 | 5.2E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.4E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0035 | 0.0056 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.2E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.8E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.9E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.3E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.7E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.4E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.3E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 8.9E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0015 | 0.0062 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.4E-04 | 0.0017 | 2.8E-04 | 6.0E-05 | 3.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.0E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-07 | 1.7E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.8E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.3E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-07 | 2.8E-04 | 1.1E-04 | 1.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 1.8E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.013 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.6E-04 | 6.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.9E-06 | 0.014 | 0.31 | 2.2E-05 | 0.31 |
| Chloroform | 0.0055 | 4.5E-06 | 0.0055 | 0.23 | 6.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.0E-04 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.0E-05 | 0.0033 | 0.0017 | 1.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0028 | 0.55 | 0.052 | 9.1E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-07 | 6.0E-05 | 0.0014 | 2.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.1E-07 | 0.0024 | 0.045 | 5.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-06 | 2.7E-06 | 0.0059 | 0.0054 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-05 | 5.6E-04 | 0.0066 | 1.0E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0017 | 0.0066 | 0.0083 | 1.1E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0020 | 0.0099 | 0.0079 | 1.0E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.38 | 0.70 | 1.1 | 0.25 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.1E-04 | 0.027 | 0.55 | 2.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0019 | 0.0019 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0034 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.041 | 0.041 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.056 | 0.22 | 0.29 | 0.031 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.064 | 0.064 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.79 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.027 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.092 | 0.12 | 0.070 | 0.063 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.2E-04 | 0.0021 | 1.2E-04 | 3.4E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0024 | 0.024 | 0.0060 | 4.3E-04 | 0.0065 |
| Barium | 0.0040 | 4.8E-04 | 0.0045 | 8.2E-04 | 6.5E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.019 | 0.056 | 0.030 | 0.010 | 0.041 |
| Boron[c] | 0.0037 | 0.0035 | 0.0072 | - | - | - |
| Cadmium | 0.015 | 0.080 | 0.094 | 0.024 | 0.087 | 0.11 |
| Chromium (hexavalent)[ac] | - | 0.0036 | 0.0036 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0026 | 0.0093 | - | - | - |
| Cobalt | 0.0074 | 0.033 | 0.040 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.038 | 0.046 | 0.0100 | 0.031 | 0.041 |
| Mercury - Inorganic[a] | - | 0.028 | 0.028 | - | 0.0023 | 0.0023 |
| Nickel[c] | 0.0018 | 0.017 | 0.018 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.7E-04 | 0.0039 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.038 | 0.046 | 3.4E-04 | 0.0010 | 0.0014 |
| Thallium[c] | 0.0073 | 0.044 | 0.052 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 5.4E-04 | 8.5E-04 |
| Vanadium | 0.0075 | 0.0026 | 0.010 | 0.0015 | 3.6E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0045 | 0.0066 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.1E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.6E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.3E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 8.7E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.3E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.4E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 8.6E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.6E-06 | 3.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.1E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0037 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.2E-04 | 0.0018 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 7.6E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.2E-07 | 2.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.3E-04 | 8.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.5E-07 | 1.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.7E-05 | 4.7E-04 | 4.4E-05 | 3.2E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 4.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 4.5E-10 | 0.0035 |
| Benzene | 0.17 | 2.1E-04 | 0.17 | 0.41 | 3.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0030 | 5.4E-04 | 3.9E-04 | 9.2E-04 |
| Bromomethane | 0.0018 | 3.4E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.8E-06 | 0.014 | 0.31 | 5.6E-05 | 0.31 |
| Chloroform | 0.0055 | 5.8E-06 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.0E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.1E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.4E-05 | 2.3E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 4.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0036 | 0.55 | 0.052 | 2.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.2E-07 | 6.0E-05 | 0.0014 | 4.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.5E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.8E-07 | 3.1E-05 | 1.9E-05 | 7.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.0E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 8.9E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 2.5E-06 | 3.2E-06 | 0.0059 | 0.014 | 0.019 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.1E-05 | 5.7E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0022 | 0.0071 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0026 | 0.010 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.48 | 0.81 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.6E-04 | 0.027 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0012 | 0.0012 | - | 0.0087 | 0.0087 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0021 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.085 | 0.085 | - | 0.072 | 0.072 |
| Hydrogen Fluoride (HF)[ac] | - | 0.026 | 0.026 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.035 | 0.20 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.031 | 0.031 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.052 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.058 | 0.086 | 0.070 | 0.033 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.9E-04 | 0.0019 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0015 | 0.024 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 3.0E-04 | 0.0043 | 8.2E-04 | 3.4E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.012 | 0.049 | 0.030 | 0.0054 | 0.036 |
| Boron[c] | 0.0037 | 0.0022 | 0.0059 | - | - | - |
| Cadmium | 0.015 | 0.050 | 0.064 | 0.024 | 0.045 | 0.069 |
| Chromium (hexavalent)[ac] | - | 0.0023 | 0.0023 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0016 | 0.0083 | - | - | - |
| Cobalt | 0.0074 | 0.021 | 0.028 | 0.0060 | 0.0093 | 0.015 |
| Lead | 0.0081 | 0.024 | 0.032 | 0.0100 | 0.016 | 0.026 |
| Mercury - Inorganic[a] | - | 0.018 | 0.018 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.010 | 0.012 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.7E-04 | 0.0038 | 3.0E-04 | 7.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.024 | 0.032 | 3.4E-04 | 5.4E-04 | 8.8E-04 |
| Thallium[c] | 0.0073 | 0.028 | 0.035 | - | - | - |
| Tin | 3.7E-04 | 6.2E-04 | 9.9E-04 | 3.0E-04 | 2.8E-04 | 5.8E-04 |
| Vanadium | 0.0075 | 0.0016 | 0.0092 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0028 | 0.0049 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.3E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.0E-05 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.9E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.7E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.9E-05 | 4.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.5E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.2E-06 | 2.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0019 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.1E-04 | 0.0015 | 2.8E-04 | 7.7E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.8E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.4E-07 | 1.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.5E-04 | 7.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 9.6E-08 | 9.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.9E-05 | 4.6E-04 | 4.4E-05 | 1.7E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.1E-08 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.3E-10 | 0.0035 |
| Benzene | 0.17 | 1.3E-04 | 0.17 | 0.41 | 1.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0089 | 0.011 | - | - | - |
| Bromoform | 0.0014 | 9.8E-04 | 0.0024 | 5.4E-04 | 2.0E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 2.1E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.3E-06 | 0.014 | 0.31 | 2.9E-05 | 0.31 |
| Chloroform | 0.0055 | 3.6E-06 | 0.0055 | 0.23 | 8.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.9E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.9E-06 | 2.3E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.2E-05 | 0.0032 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0022 | 0.55 | 0.052 | 1.2E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-06 | 7.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.0E-07 | 6.0E-05 | 0.0014 | 2.5E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.1E-07 | 3.1E-05 | 1.9E-05 | 3.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.5E-07 | 0.0024 | 0.045 | 6.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.5E-06 | 2.3E-06 | 0.0059 | 0.0070 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.9E-05 | 5.5E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0014 | 0.0062 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0016 | 0.0095 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.30 | 0.63 | 1.1 | 0.24 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.1E-04 | 0.027 | 0.55 | 3.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0033 | 0.0033 | - | 0.015 | 0.015 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0059 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.24 | 0.24 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.071 | 0.071 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.097 | 0.26 | 0.29 | 0.027 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.085 | 0.085 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.035 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.16 | 0.19 | 0.070 | 0.055 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.0E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0042 | 0.026 | 0.0060 | 3.8E-04 | 0.0064 |
| Barium | 0.0040 | 8.4E-04 | 0.0048 | 8.2E-04 | 5.7E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.033 | 0.070 | 0.030 | 0.0090 | 0.039 |
| Boron[c] | 0.0037 | 0.0060 | 0.0098 | - | - | - |
| Cadmium | 0.015 | 0.14 | 0.15 | 0.024 | 0.076 | 0.100 |
| Chromium (hexavalent)[ac] | - | 0.0063 | 0.0063 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0044 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.057 | 0.065 | 0.0060 | 0.016 | 0.022 |
| Lead | 0.0081 | 0.066 | 0.074 | 0.0100 | 0.027 | 0.037 |
| Mercury - Inorganic[a] | - | 0.049 | 0.049 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.029 | 0.031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.7E-04 | 0.0041 | 3.0E-04 | 1.3E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.066 | 0.075 | 3.4E-04 | 9.1E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.077 | 0.084 | - | - | - |
| Tin | 3.7E-04 | 0.0017 | 0.0021 | 3.0E-04 | 4.8E-04 | 7.8E-04 |
| Vanadium | 0.0075 | 0.0046 | 0.012 | 0.0015 | 3.1E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0079 | 0.0100 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.9E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.6E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.5E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-04 | 5.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.3E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.5E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.2E-06 | 6.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.0E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.0E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.0E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0032 | 0.0080 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0025 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.8E-07 | 3.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.1E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.7E-07 | 2.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.2E-05 | 5.1E-04 | 4.4E-05 | 2.8E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.5E-07 | 2.8E-04 | 1.1E-04 | 3.5E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.9E-10 | 0.0035 |
| Benzene | 0.17 | 3.6E-04 | 0.17 | 0.41 | 2.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.025 | 0.027 | - | - | - |
| Bromoform | 0.0014 | 0.0027 | 0.0042 | 5.4E-04 | 3.4E-04 | 8.8E-04 |
| Bromomethane | 0.0018 | 5.9E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.5E-06 | 0.014 | 0.31 | 4.8E-05 | 0.31 |
| Chloroform | 0.0055 | 1.0E-05 | 0.0055 | 0.23 | 1.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.4E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.3E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.5E-05 | 2.4E-04 | 0.0058 | 2.2E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.8E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.0E-04 | 0.0034 | 0.0017 | 3.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0063 | 0.55 | 0.052 | 2.0E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.2E-06 | 9.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.6E-07 | 6.1E-05 | 0.0014 | 4.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.1E-07 | 3.1E-05 | 1.9E-05 | 6.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.8E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 7.8E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.3E-06 | 5.0E-06 | 0.0059 | 0.012 | 0.018 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.4E-05 | 5.9E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0039 | 0.0087 | 0.0083 | 2.4E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0045 | 0.012 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.84 | 1.2 | 1.1 | 0.46 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 6.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0035 | 0.0035 | - | 0.019 | 0.019 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0063 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.25 | 0.25 | - | 0.16 | 0.16 |
| Hydrogen Fluoride (HF)[ac] | - | 0.075 | 0.075 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.10 | 0.26 | 0.29 | 0.035 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.055 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.17 | 0.20 | 0.070 | 0.073 | 0.14 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.9E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0044 | 0.026 | 0.0060 | 5.0E-04 | 0.0065 |
| Barium | 0.0040 | 8.8E-04 | 0.0049 | 8.2E-04 | 7.6E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.035 | 0.071 | 0.030 | 0.012 | 0.042 |
| Boron[c] | 0.0037 | 0.0064 | 0.010 | - | - | - |
| Cadmium | 0.015 | 0.15 | 0.16 | 0.024 | 0.10 | 0.12 |
| Chromium (hexavalent)[ac] | - | 0.0067 | 0.0067 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0047 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.060 | 0.068 | 0.0060 | 0.021 | 0.027 |
| Lead | 0.0081 | 0.069 | 0.078 | 0.0100 | 0.036 | 0.046 |
| Mercury - Inorganic[a] | - | 0.052 | 0.052 | - | 0.0027 | 0.0027 |
| Nickel[c] | 0.0018 | 0.030 | 0.032 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.0E-04 | 0.0042 | 3.0E-04 | 1.7E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.070 | 0.078 | 3.4E-04 | 0.0012 | 0.0015 |
| Thallium[c] | 0.0073 | 0.081 | 0.089 | - | - | - |
| Tin | 3.7E-04 | 0.0018 | 0.0022 | 3.0E-04 | 6.3E-04 | 9.3E-04 |
| Vanadium | 0.0075 | 0.0048 | 0.012 | 0.0015 | 4.2E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.0083 | 0.010 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.0E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.2E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.9E-05 | 7.4E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.7E-04 | 5.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0012 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.6E-05 | 7.0E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.0E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.7E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.5E-06 | 6.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.1E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.7E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0043 | 0.0091 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0015 | 0.0025 | 2.8E-04 | 1.7E-04 | 4.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.0E-07 | 4.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.3E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.6E-05 | 5.1E-04 | 4.4E-05 | 3.7E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-07 | 2.8E-04 | 1.1E-04 | 4.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.2E-10 | 0.0035 |
| Benzene | 0.17 | 3.8E-04 | 0.17 | 0.41 | 3.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.026 | 0.028 | - | - | - |
| Bromoform | 0.0014 | 0.0029 | 0.0043 | 5.4E-04 | 4.5E-04 | 9.9E-04 |
| Bromomethane | 0.0018 | 6.3E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.9E-06 | 0.014 | 0.31 | 6.4E-05 | 0.31 |
| Chloroform | 0.0055 | 1.1E-05 | 0.0055 | 0.23 | 1.8E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.6E-06 | 3.5E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.6E-05 | 2.5E-04 | 0.0058 | 2.9E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.1E-04 | 0.0034 | 0.0017 | 4.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0066 | 0.56 | 0.052 | 2.6E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.4E-06 | 1.0E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.9E-07 | 6.1E-05 | 0.0014 | 5.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.8E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.3E-07 | 3.1E-05 | 1.9E-05 | 8.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-06 | 0.0024 | 0.045 | 1.5E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.0E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.5E-06 | 5.3E-06 | 0.0059 | 0.016 | 0.022 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.7E-05 | 5.9E-04 | 0.0066 | 3.0E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0041 | 0.0089 | 0.0083 | 3.2E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0047 | 0.013 | 0.0079 | 3.0E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 0.88 | 1.2 | 1.1 | 0.64 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0012 | 0.027 | 0.55 | 8.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.5E-04 | 9.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.7E-06 | 6.7E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.2E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.9E-09 | 7.9E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.1E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.9E-05 | 4.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.1E-04 | 4.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.5E-05 | 0.12 |
| Barium | 0.0049 | 1.9E-06 | 0.0050 |
| Beryllium | 0.043 | 4.3E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.9E-06 | 2.9E-06 |
| Cobalt | 0.0060 | 5.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.1E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.6E-05 | 4.6E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.1E-04 | 0.035 |
| Thallium | 0.029 | 3.6E-04 | 0.030 |
| Tin | 0.0015 | 8.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.6E-07 | 0.0023 |
| Fluorene[a] | - | 5.5E-08 | 5.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Schools**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.4E-09 | 3.4E-09 |
| Hexachlorobenzene | 0.0021 | 3.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.6E-08 | 9.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.8E-09 | 6.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.6E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0048 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.1E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.9E-05 | 4.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.1E-04 | 4.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.5E-05 | 0.12 |
| Barium | 0.0049 | 1.9E-06 | 0.0050 |
| Beryllium | 0.043 | 4.3E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.9E-06 | 2.9E-06 |
| Cobalt | 0.0060 | 5.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.1E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.5E-05 | 4.5E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.0E-04 | 0.035 |
| Thallium | 0.029 | 3.5E-04 | 0.030 |
| Tin | 0.0015 | 8.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.6E-07 | 0.0023 |
| Fluorene[a] | - | 5.5E-08 | 5.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.4E-09 | 3.4E-09 |
| Hexachlorobenzene | 0.0021 | 3.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.6E-08 | 9.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.8E-09 | 6.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.9E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.6E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.6E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0048 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.1E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.5E-04 | 9.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.8E-06 | 6.8E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.3E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.9E-09 | 7.9E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.2E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.7E-05 | 9.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.1E-04 | 8.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0026 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0026 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.5E-05 | 0.015 |
| Arsenic | 0.12 | 5.0E-05 | 0.12 |
| Barium | 0.0049 | 3.8E-06 | 0.0050 |
| Beryllium | 0.043 | 8.6E-05 | 0.043 |
| Boron | 0.0031 | 5.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0025 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.8E-06 | 5.8E-06 |
| Cobalt | 0.0060 | 1.0E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.0E-05 | 9.0E-05 |
| Nickel | 0.045 | 0.0031 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.3E-06 | 0.015 |
| Silver | 0.034 | 6.0E-04 | 0.035 |
| Thallium | 0.029 | 7.0E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.2E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.8E-09 | 6.8E-09 |
| Hexachlorobenzene | 0.0021 | 7.2E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.7E-09 | 4.7E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.9E-07 | 1.9E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.8E-10 | 0.12 |
| Benzene | 0.13 | 3.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.4E-04 | 0.0058 |
| Bromoform | 0.0046 | 4.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 7.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.8E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.6E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.5E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0095 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.6E-04 | 9.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.8E-06 | 6.8E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.3E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.0E-09 | 8.0E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.2E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.2E-05 | 4.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.5E-04 | 3.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0011 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0011 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.1E-05 | 0.015 |
| Arsenic | 0.12 | 2.2E-05 | 0.12 |
| Barium | 0.0049 | 1.6E-06 | 0.0050 |
| Beryllium | 0.043 | 3.7E-05 | 0.043 |
| Boron | 0.0031 | 2.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0011 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.5E-06 | 2.5E-06 |
| Cobalt | 0.0060 | 4.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.7E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 3.9E-05 | 3.9E-05 |
| Nickel | 0.045 | 0.0013 | 0.046 |
| Phosphorus | 7.3E-10 | 5.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.9E-06 | 0.015 |
| Silver | 0.034 | 2.6E-04 | 0.035 |
| Thallium | 0.029 | 3.0E-04 | 0.030 |
| Tin | 0.0015 | 6.8E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 9.0E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.3E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.7E-07 | 0.0023 |
| Fluorene[a] | - | 4.7E-08 | 4.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.7E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.9E-09 | 2.9E-09 |
| Hexachlorobenzene | 0.0021 | 3.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.2E-08 | 8.2E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.8E-09 | 5.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.9E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.6E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.2E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.6E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.9E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.3E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.4E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.0E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0041 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.7E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.6E-05 | 4.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.8E-04 | 3.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0012 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0012 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.4E-05 | 0.12 |
| Barium | 0.0049 | 1.8E-06 | 0.0050 |
| Beryllium | 0.043 | 4.0E-05 | 0.043 |
| Boron | 0.0031 | 2.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0012 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.7E-06 | 2.7E-06 |
| Cobalt | 0.0060 | 4.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 8.5E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.2E-05 | 4.2E-05 |
| Nickel | 0.045 | 0.0015 | 0.046 |
| Phosphorus | 7.3E-10 | 6.1E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.0E-06 | 0.015 |
| Silver | 0.034 | 2.8E-04 | 0.035 |
| Thallium | 0.029 | 3.3E-04 | 0.030 |
| Tin | 0.0015 | 7.4E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 9.8E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.4E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Hexachlorobenzene | 0.0021 | 3.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.0E-08 | 9.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.3E-10 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0045 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 8.5E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.8E-05 | 5.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.9E-04 | 4.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0015 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.5E-05 | 0.015 |
| Arsenic | 0.12 | 3.0E-05 | 0.12 |
| Barium | 0.0049 | 2.3E-06 | 0.0050 |
| Beryllium | 0.043 | 5.1E-05 | 0.043 |
| Boron | 0.0031 | 3.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0015 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.5E-06 | 3.5E-06 |
| Cobalt | 0.0060 | 6.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.1E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 5.4E-05 | 5.4E-05 |
| Nickel | 0.045 | 0.0019 | 0.047 |
| Phosphorus | 7.3E-10 | 7.8E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.6E-06 | 0.015 |
| Silver | 0.034 | 3.6E-04 | 0.035 |
| Thallium | 0.029 | 4.2E-04 | 0.030 |
| Tin | 0.0015 | 9.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.3E-06 | 7.7E-04 |
| Zinc | 0.0051 | 4.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 7.9E-07 | 0.0023 |
| Fluorene[a] | - | 6.5E-08 | 6.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.2E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 7.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.1E-09 | 4.1E-09 |
| Hexachlorobenzene | 0.0021 | 4.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.8E-09 | 2.8E-09 |
| Pentachlorophenol | 8.2E-04 | 8.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.1E-07 | 1.1E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 8.1E-09 | 8.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.5E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 2.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.6E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 9.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.9E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 9.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.3E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0057 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.1E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.8E-05 | 3.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.1E-04 | 3.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0010 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0010 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 9.6E-06 | 0.015 |
| Arsenic | 0.12 | 2.0E-05 | 0.12 |
| Barium | 0.0049 | 1.5E-06 | 0.0050 |
| Beryllium | 0.043 | 3.3E-05 | 0.043 |
| Boron | 0.0031 | 2.1E-05 | 0.0031 |
| Cadmium | 0.12 | 9.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.2E-06 | 2.2E-06 |
| Cobalt | 0.0060 | 4.0E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.0E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.5E-05 | 3.5E-05 |
| Nickel | 0.045 | 0.0012 | 0.046 |
| Phosphorus | 7.3E-10 | 5.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.7E-06 | 0.015 |
| Silver | 0.034 | 2.3E-04 | 0.035 |
| Thallium | 0.029 | 2.7E-04 | 0.030 |
| Tin | 0.0015 | 6.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 8.1E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.1E-07 | 0.0023 |
| Fluorene[a] | - | 4.2E-08 | 4.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.6E-09 | 2.6E-09 |
| Hexachlorobenzene | 0.0021 | 2.8E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.4E-08 | 7.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.2E-09 | 5.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.9E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.8E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.7E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.9E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.2E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0037 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.0E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.1E-04 | 9.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0030 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.8E-05 | 0.015 |
| Arsenic | 0.12 | 5.7E-05 | 0.12 |
| Barium | 0.0049 | 4.3E-06 | 0.0050 |
| Beryllium | 0.043 | 9.7E-05 | 0.043 |
| Boron | 0.0031 | 6.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0028 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.5E-06 | 6.5E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.0E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.0E-04 | 1.0E-04 |
| Nickel | 0.045 | 0.0035 | 0.048 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.9E-06 | 0.015 |
| Silver | 0.034 | 6.8E-04 | 0.035 |
| Thallium | 0.029 | 7.9E-04 | 0.030 |
| Tin | 0.0015 | 1.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.2E-07 | 1.2E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.3E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.3E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.6E-09 | 7.6E-09 |
| Hexachlorobenzene | 0.0021 | 8.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.3E-09 | 5.3E-09 |
| Pentachlorophenol | 8.2E-04 | 1.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.1E-07 | 2.1E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.5E-08 | 1.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.2E-10 | 0.12 |
| Benzene | 0.13 | 4.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.2E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.9E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 8.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.0E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.1E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.9E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.1E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.6E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.7E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.0E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.0E-05 | 5.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.2E-04 | 4.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.6E-05 | 0.12 |
| Barium | 0.0049 | 2.0E-06 | 0.0050 |
| Beryllium | 0.043 | 4.4E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.0E-06 | 3.0E-06 |
| Cobalt | 0.0060 | 5.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.2E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.6E-05 | 4.6E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.1E-04 | 0.035 |
| Thallium | 0.029 | 3.6E-04 | 0.030 |
| Tin | 0.0015 | 8.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.7E-07 | 0.0023 |
| Fluorene[a] | - | 5.6E-08 | 5.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.5E-09 | 3.5E-09 |
| Hexachlorobenzene | 0.0021 | 3.7E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.4E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.8E-08 | 9.8E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.9E-09 | 6.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.1E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.6E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0049 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.2E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.6E-05 | 7.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.4E-04 | 6.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0020 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0021 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.9E-05 | 0.015 |
| Arsenic | 0.12 | 4.0E-05 | 0.12 |
| Barium | 0.0049 | 3.0E-06 | 0.0050 |
| Beryllium | 0.043 | 6.7E-05 | 0.043 |
| Boron | 0.0031 | 4.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.5E-06 | 4.5E-06 |
| Cobalt | 0.0060 | 8.2E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.4E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.1E-05 | 7.1E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.4E-06 | 0.015 |
| Silver | 0.034 | 4.7E-04 | 0.035 |
| Thallium | 0.029 | 5.5E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.0E-06 | 0.0023 |
| Fluorene[a] | - | 8.5E-08 | 8.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 8.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 9.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.3E-09 | 5.3E-09 |
| Hexachlorobenzene | 0.0021 | 5.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 3.7E-09 | 3.7E-09 |
| Pentachlorophenol | 8.2E-04 | 1.1E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.5E-07 | 1.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.1E-08 | 1.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.2E-10 | 0.12 |
| Benzene | 0.13 | 2.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 3.4E-04 | 0.0057 |
| Bromoform | 0.0046 | 3.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 6.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.4E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 7.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.2E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.2E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.5E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 7.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.2E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.6E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0075 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.4E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.3E-05 | 5.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.4E-04 | 4.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0014 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0014 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.8E-05 | 0.12 |
| Barium | 0.0049 | 2.1E-06 | 0.0050 |
| Beryllium | 0.043 | 4.7E-05 | 0.043 |
| Boron | 0.0031 | 3.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0014 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.2E-06 | 3.2E-06 |
| Cobalt | 0.0060 | 5.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.9E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.9E-05 | 4.9E-05 |
| Nickel | 0.045 | 0.0017 | 0.047 |
| Phosphorus | 7.3E-10 | 7.1E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.4E-06 | 0.015 |
| Silver | 0.034 | 3.3E-04 | 0.035 |
| Thallium | 0.029 | 3.8E-04 | 0.030 |
| Tin | 0.0015 | 8.7E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 7.2E-07 | 0.0023 |
| Fluorene[a] | - | 6.0E-08 | 6.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.7E-09 | 3.7E-09 |
| Hexachlorobenzene | 0.0021 | 3.9E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.6E-09 | 2.6E-09 |
| Pentachlorophenol | 8.2E-04 | 7.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.0E-07 | 1.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 7.4E-09 | 7.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.5E-10 | 0.12 |
| Benzene | 0.13 | 2.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.4E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.4E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.7E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.4E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 8.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.0E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.9E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 8.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0052 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.9E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.2E-05 | 9.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.7E-04 | 7.7E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0024 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0025 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.3E-05 | 0.015 |
| Arsenic | 0.12 | 4.8E-05 | 0.12 |
| Barium | 0.0049 | 3.6E-06 | 0.0050 |
| Beryllium | 0.043 | 8.1E-05 | 0.043 |
| Boron | 0.0031 | 5.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0024 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.5E-06 | 5.5E-06 |
| Cobalt | 0.0060 | 9.9E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.7E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.5E-05 | 8.5E-05 |
| Nickel | 0.045 | 0.0030 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.1E-06 | 0.015 |
| Silver | 0.034 | 5.7E-04 | 0.035 |
| Thallium | 0.029 | 6.7E-04 | 0.030 |
| Tin | 0.0015 | 1.5E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.8E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 1.0E-07 | 1.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.4E-09 | 6.4E-09 |
| Hexachlorobenzene | 0.0021 | 6.8E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.5E-09 | 4.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.8E-07 | 1.8E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.7E-10 | 0.12 |
| Benzene | 0.13 | 3.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.2E-04 | 0.0057 |
| Bromoform | 0.0046 | 4.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.4E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 7.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.7E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.5E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.7E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.0E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.4E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0090 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.7E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.0E-04 | 1.0E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.5E-04 | 8.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0027 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.6E-05 | 0.015 |
| Arsenic | 0.12 | 5.3E-05 | 0.12 |
| Barium | 0.0049 | 4.0E-06 | 0.0050 |
| Beryllium | 0.043 | 8.9E-05 | 0.043 |
| Boron | 0.0031 | 5.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.0E-06 | 6.0E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.9E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.4E-05 | 9.4E-05 |
| Nickel | 0.045 | 0.0033 | 0.048 |
| Phosphorus | 7.3E-10 | 1.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.5E-06 | 0.015 |
| Silver | 0.034 | 6.3E-04 | 0.035 |
| Thallium | 0.029 | 7.3E-04 | 0.030 |
| Tin | 0.0015 | 1.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.2E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.1E-09 | 7.1E-09 |
| Hexachlorobenzene | 0.0021 | 7.5E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.9E-09 | 4.9E-09 |
| Pentachlorophenol | 8.2E-04 | 1.5E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.0E-07 | 2.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.9E-10 | 0.12 |
| Benzene | 0.13 | 3.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.6E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 8.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.9E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.0E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.6E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.9E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.0E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.6E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.2E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0099 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.9E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Max GLC** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.8E-09 |
| Beryllium | 7.1E-07 | 1.7E-09 |
| Cadmium | 5.9E-06 | 1.4E-07 |
| Chromium (hexavalent)[a] | - | 5.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 9.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 6.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.7E-15 |
| Benzene | 3.1E-05 | 9.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.6E-11 |
| Chloroform | 3.7E-06 | 4.8E-11 |
| Dichloromethane | 3.6E-07 | 3.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 9.9E-10 |
| Formaldehyde | 8.8E-06 | 1.0E-09 |
| Tetrachloroethene | 1.4E-06 | 1.2E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.2E-12 |
| Vinyl chloride | 3.2E-08 | 1.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.6E-07 |
| Skin Carcinogens | 2.1E-05 | 7.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Schools** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.6E-09 |
| Beryllium | 7.1E-07 | 7.3E-10 |
| Cadmium | 5.9E-06 | 6.2E-08 |
| Chromium (hexavalent)[a] | - | 2.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.4E-16 |
| Benzene | 3.1E-05 | 4.3E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 2.1E-11 |
| Dichloromethane | 3.6E-07 | 1.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.3E-10 |
| Formaldehyde | 8.8E-06 | 4.4E-10 |
| Tetrachloroethene | 1.4E-06 | 5.2E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.3E-13 |
| Vinyl chloride | 3.2E-08 | 6.7E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 9.3E-10 |
| Lung Carcinogens | 4.7E-05 | 1.1E-07 |
| Skin Carcinogens | 2.1E-05 | 3.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Daycares** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.6E-09 |
| Beryllium | 7.1E-07 | 7.3E-10 |
| Cadmium | 5.9E-06 | 6.2E-08 |
| Chromium (hexavalent)[a] | - | 2.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.8E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.4E-16 |
| Benzene | 3.1E-05 | 4.2E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 2.1E-11 |
| Dichloromethane | 3.6E-07 | 1.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.3E-10 |
| Formaldehyde | 8.8E-06 | 4.4E-10 |
| Tetrachloroethene | 1.4E-06 | 5.2E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.3E-13 |
| Vinyl chloride | 3.2E-08 | 6.7E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 9.3E-10 |
| Lung Carcinogens | 4.7E-05 | 1.1E-07 |
| Skin Carcinogens | 2.1E-05 | 3.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Farms** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.8E-09 |
| Beryllium | 7.1E-07 | 1.7E-09 |
| Cadmium | 5.9E-06 | 1.5E-07 |
| Chromium (hexavalent)[a] | - | 5.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 9.7E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 6.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.7E-15 |
| Benzene | 3.1E-05 | 9.9E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.6E-11 |
| Chloroform | 3.7E-06 | 4.8E-11 |
| Dichloromethane | 3.6E-07 | 3.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 9.9E-10 |
| Formaldehyde | 8.8E-06 | 1.0E-09 |
| Tetrachloroethene | 1.4E-06 | 1.2E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.2E-12 |
| Vinyl chloride | 3.2E-08 | 1.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.6E-07 |
| Skin Carcinogens | 2.1E-05 | 7.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Current/Future Commercial/Industrial 140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.3E-09 |
| Beryllium | 7.1E-07 | 1.4E-09 |
| Cadmium | 5.9E-06 | 1.2E-07 |
| Chromium (hexavalent)[a] | - | 4.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 8.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.5E-15 |
| Benzene | 3.1E-05 | 8.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.2E-11 |
| Chloroform | 3.7E-06 | 4.1E-11 |
| Dichloromethane | 3.6E-07 | 2.9E-10 |
| Ethylene Dibromide | 1.1E-06 | 8.5E-10 |
| Formaldehyde | 8.8E-06 | 8.8E-10 |
| Tetrachloroethene | 1.4E-06 | 1.0E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.1E-12 |
| Vinyl chloride | 3.2E-08 | 1.3E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.9E-09 |
| Lung Carcinogens | 4.7E-05 | 2.2E-07 |
| Skin Carcinogens | 2.1E-05 | 6.6E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Park/Recreational** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.8E-09 |
| Beryllium | 7.1E-07 | 1.7E-09 |
| Cadmium | 5.9E-06 | 1.5E-07 |
| Chromium (hexavalent)[a] | - | 5.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 9.7E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 6.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.7E-15 |
| Benzene | 3.1E-05 | 9.9E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.6E-11 |
| Chloroform | 3.7E-06 | 4.8E-11 |
| Dichloromethane | 3.6E-07 | 3.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 1.0E-09 |
| Formaldehyde | 8.8E-06 | 1.0E-09 |
| Tetrachloroethene | 1.4E-06 | 1.2E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.2E-12 |
| Vinyl chloride | 3.2E-08 | 1.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.6E-07 |
| Skin Carcinogens | 2.1E-05 | 7.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Hospitals** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.4E-09 |
| Beryllium | 7.1E-07 | 6.2E-10 |
| Cadmium | 5.9E-06 | 5.3E-08 |
| Chromium (hexavalent)[a] | - | 1.9E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.9E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 6.3E-16 |
| Benzene | 3.1E-05 | 3.6E-10 |
| Carbon tetrachloride | 9.2E-06 | 9.7E-12 |
| Chloroform | 3.7E-06 | 1.8E-11 |
| Dichloromethane | 3.6E-07 | 1.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.6E-10 |
| Formaldehyde | 8.8E-06 | 3.8E-10 |
| Tetrachloroethene | 1.4E-06 | 4.4E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.5E-13 |
| Vinyl chloride | 3.2E-08 | 5.7E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.9E-10 |
| Lung Carcinogens | 4.7E-05 | 9.4E-08 |
| Skin Carcinogens | 2.1E-05 | 2.8E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Retirement Homes** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.5E-09 |
| Beryllium | 7.1E-07 | 6.8E-10 |
| Cadmium | 5.9E-06 | 5.8E-08 |
| Chromium (hexavalent)[a] | - | 2.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.1E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.6E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.7E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 6.9E-16 |
| Benzene | 3.1E-05 | 4.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 1.9E-11 |
| Dichloromethane | 3.6E-07 | 1.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.0E-10 |
| Formaldehyde | 8.8E-06 | 4.1E-10 |
| Tetrachloroethene | 1.4E-06 | 4.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.9E-13 |
| Vinyl chloride | 3.2E-08 | 6.3E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.7E-10 |
| Lung Carcinogens | 4.7E-05 | 1.0E-07 |
| Skin Carcinogens | 2.1E-05 | 3.1E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Bowmanville** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.0E-09 |
| Beryllium | 7.1E-07 | 8.6E-10 |
| Cadmium | 5.9E-06 | 7.4E-08 |
| Chromium (hexavalent)[a] | - | 2.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.0E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 8.8E-16 |
| Benzene | 3.1E-05 | 5.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.3E-11 |
| Chloroform | 3.7E-06 | 2.4E-11 |
| Dichloromethane | 3.6E-07 | 1.7E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.1E-10 |
| Formaldehyde | 8.8E-06 | 5.2E-10 |
| Tetrachloroethene | 1.4E-06 | 6.1E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 6.3E-13 |
| Vinyl chloride | 3.2E-08 | 8.0E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.1E-09 |
| Lung Carcinogens | 4.7E-05 | 1.3E-07 |
| Skin Carcinogens | 2.1E-05 | 3.9E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.3E-09 |
| Beryllium | 7.1E-07 | 5.6E-10 |
| Cadmium | 5.9E-06 | 4.8E-08 |
| Chromium (hexavalent)[a] | - | 1.7E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 1.7E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.7E-16 |
| Benzene | 3.1E-05 | 3.3E-10 |
| Carbon tetrachloride | 9.2E-06 | 8.7E-12 |
| Chloroform | 3.7E-06 | 1.6E-11 |
| Dichloromethane | 3.6E-07 | 1.1E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.3E-10 |
| Formaldehyde | 8.8E-06 | 3.4E-10 |
| Tetrachloroethene | 1.4E-06 | 4.0E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.1E-13 |
| Vinyl chloride | 3.2E-08 | 5.2E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.2E-10 |
| Lung Carcinogens | 4.7E-05 | 8.5E-08 |
| Skin Carcinogens | 2.1E-05 | 2.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Rd. Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.7E-09 |
| Beryllium | 7.1E-07 | 1.6E-09 |
| Cadmium | 5.9E-06 | 1.4E-07 |
| Chromium (hexavalent)[a] | - | 4.9E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 9.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 6.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.6E-15 |
| Benzene | 3.1E-05 | 9.5E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.5E-11 |
| Chloroform | 3.7E-06 | 4.6E-11 |
| Dichloromethane | 3.6E-07 | 3.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 9.5E-10 |
| Formaldehyde | 8.8E-06 | 9.9E-10 |
| Tetrachloroethene | 1.4E-06 | 1.2E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.2E-12 |
| Vinyl chloride | 3.2E-08 | 1.5E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.1E-09 |
| Lung Carcinogens | 4.7E-05 | 2.5E-07 |
| Skin Carcinogens | 2.1E-05 | 7.4E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Maple Grove** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.7E-09 |
| Beryllium | 7.1E-07 | 7.4E-10 |
| Cadmium | 5.9E-06 | 6.3E-08 |
| Chromium (hexavalent)[a] | - | 2.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.5E-16 |
| Benzene | 3.1E-05 | 4.3E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.2E-11 |
| Chloroform | 3.7E-06 | 2.1E-11 |
| Dichloromethane | 3.6E-07 | 1.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.3E-10 |
| Formaldehyde | 8.8E-06 | 4.5E-10 |
| Tetrachloroethene | 1.4E-06 | 5.3E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.4E-13 |
| Vinyl chloride | 3.2E-08 | 6.8E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 9.5E-10 |
| Lung Carcinogens | 4.7E-05 | 1.1E-07 |
| Skin Carcinogens | 2.1E-05 | 3.4E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Oshawa Subdivision** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.5E-09 |
| Beryllium | 7.1E-07 | 1.1E-09 |
| Cadmium | 5.9E-06 | 9.7E-08 |
| Chromium (hexavalent)[a] | - | 3.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.6E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 6.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 4.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.1E-15 |
| Benzene | 3.1E-05 | 6.6E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.8E-11 |
| Chloroform | 3.7E-06 | 3.2E-11 |
| Dichloromethane | 3.6E-07 | 2.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 6.6E-10 |
| Formaldehyde | 8.8E-06 | 6.9E-10 |
| Tetrachloroethene | 1.4E-06 | 8.0E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 8.2E-13 |
| Vinyl chloride | 3.2E-08 | 1.0E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.4E-09 |
| Lung Carcinogens | 4.7E-05 | 1.7E-07 |
| Skin Carcinogens | 2.1E-05 | 5.1E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Port Darlington** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 1.8E-09 |
| Beryllium | 7.1E-07 | 7.9E-10 |
| Cadmium | 5.9E-06 | 6.8E-08 |
| Chromium (hexavalent)[a] | - | 2.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 2.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.8E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.5E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.1E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 8.0E-16 |
| Benzene | 3.1E-05 | 4.6E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.2E-11 |
| Chloroform | 3.7E-06 | 2.2E-11 |
| Dichloromethane | 3.6E-07 | 1.6E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.6E-10 |
| Formaldehyde | 8.8E-06 | 4.8E-10 |
| Tetrachloroethene | 1.4E-06 | 5.6E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.7E-13 |
| Vinyl chloride | 3.2E-08 | 7.3E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.0E-09 |
| Lung Carcinogens | 4.7E-05 | 1.2E-07 |
| Skin Carcinogens | 2.1E-05 | 3.6E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Solina Rd.** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.1E-09 |
| Beryllium | 7.1E-07 | 1.4E-09 |
| Cadmium | 5.9E-06 | 1.2E-07 |
| Chromium (hexavalent)[a] | - | 4.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 7.8E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.4E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.4E-15 |
| Benzene | 3.1E-05 | 8.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.1E-11 |
| Chloroform | 3.7E-06 | 3.9E-11 |
| Dichloromethane | 3.6E-07 | 2.7E-10 |
| Ethylene Dibromide | 1.1E-06 | 8.0E-10 |
| Formaldehyde | 8.8E-06 | 8.3E-10 |
| Tetrachloroethene | 1.4E-06 | 9.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.0E-12 |
| Vinyl chloride | 3.2E-08 | 1.3E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.8E-09 |
| Lung Carcinogens | 4.7E-05 | 2.1E-07 |
| Skin Carcinogens | 2.1E-05 | 6.2E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Tooley** **140,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.4E-09 |
| Beryllium | 7.1E-07 | 1.5E-09 |
| Cadmium | 5.9E-06 | 1.3E-07 |
| Chromium (hexavalent)[a] | - | 4.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 8.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 1.5E-15 |
| Benzene | 3.1E-05 | 8.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 2.3E-11 |
| Chloroform | 3.7E-06 | 4.3E-11 |
| Dichloromethane | 3.6E-07 | 3.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 8.8E-10 |
| Formaldehyde | 8.8E-06 | 9.1E-10 |
| Tetrachloroethene | 1.4E-06 | 1.1E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.1E-12 |
| Vinyl chloride | 3.2E-08 | 1.4E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.9E-09 |
| Lung Carcinogens | 4.7E-05 | 2.3E-07 |
| Skin Carcinogens | 2.1E-05 | 6.8E-09 |

[a] Baseline Data Not Available

# APPENDIX I-3

Inhalation Results – Normal Operations (Project Alone Case) – 400,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0061 | 0.0061 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.011 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.44 | 0.44 | - | 0.23 | 0.23 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.22 | 0.38 | 0.29 | 0.052 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.18 | 0.86 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.044 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.29 | 0.32 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0020 | 0.0035 | 1.2E-04 | 5.5E-05 | 1.8E-04 |
| Arsenic | 0.022 | 0.0076 | 0.030 | 0.0060 | 7.0E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.1E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.060 | 0.097 | 0.030 | 0.017 | 0.047 |
| Boron[c] | 0.0037 | 0.011 | 0.015 | - | - | - |
| Cadmium | 0.015 | 0.25 | 0.27 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[a] | - | 0.012 | 0.012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0082 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.11 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.13 | 0.0100 | 0.050 | 0.060 |
| Mercury - Inorganic[a] | - | 0.091 | 0.091 | - | 0.0038 | 0.0038 |
| Nickel[c] | 0.0018 | 0.053 | 0.054 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.7E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.15 | - | - | - |
| Tin | 3.7E-04 | 0.0032 | 0.0036 | 3.0E-04 | 8.8E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0084 | 0.016 | 0.0015 | 5.8E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.017 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.3E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.0E-04 | 6.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.7E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.8E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.0E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.5E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.6E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0060 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0026 | 0.0036 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.4E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.0E-07 | 7.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.5E-04 | 0.0014 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.9E-07 | 4.9E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-04 | 5.8E-04 | 4.4E-05 | 5.2E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.7E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.2E-10 | 0.0035 |
| Benzene | 0.17 | 6.6E-04 | 0.17 | 0.41 | 5.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.046 | 0.048 | - | - | - |
| Bromoform | 0.0014 | 0.0050 | 0.0064 | 5.4E-04 | 6.3E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0011 | 0.0029 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 9.0E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.8E-06 | 3.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.6E-05 | 2.7E-04 | 0.0058 | 4.0E-04 | 0.0062 |
| Ethylbenzene | - | - | - | 0.0012 | 5.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-04 | 0.0035 | 0.0017 | 6.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.052 | 3.7E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.9E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.0E-06 | 6.1E-05 | 0.0014 | 7.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.9E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.8E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.3E-06 | 0.0024 | 0.045 | 2.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.9E-06 | 8.6E-06 | 0.0059 | 0.022 | 0.028 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-04 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0071 | 0.012 | 0.0083 | 4.5E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0083 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.6 | 1.9 | 1.1 | 0.77 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0031 | 0.0031 | - | 0.0100 | 0.0100 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0054 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.083 | 0.083 |
| Hydrogen Fluoride (HF)[ac] | - | 0.065 | 0.065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.11 | 0.27 | 0.29 | 0.021 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.069 | 0.069 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.029 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.038 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-04 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0038 | 0.026 | 0.0060 | 2.6E-04 | 0.0063 |
| Barium | 0.0040 | 7.7E-04 | 0.0047 | 8.2E-04 | 3.9E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.030 | 0.067 | 0.030 | 0.0061 | 0.036 |
| Boron[c] | 0.0037 | 0.0055 | 0.0092 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.14 | 0.024 | 0.052 | 0.076 |
| Chromium (hexavalent)[a] | - | 0.0058 | 0.0058 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0041 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.052 | 0.060 | 0.0060 | 0.011 | 0.017 |
| Lead | 0.0081 | 0.060 | 0.068 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.045 | 0.045 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.026 | 0.028 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.3E-04 | 0.0041 | 3.0E-04 | 8.9E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.061 | 0.069 | 3.4E-04 | 6.2E-04 | 9.6E-04 |
| Thallium[c] | 0.0073 | 0.071 | 0.078 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.3E-04 |
| Vanadium | 0.0075 | 0.0042 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0072 | 0.0093 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.8E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 4.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.7E-06 | 5.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0070 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0013 | 0.0023 | 2.8E-04 | 8.9E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-07 | 9.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-04 | 9.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-07 | 2.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-07 | 2.8E-04 | 1.1E-04 | 2.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.7E-10 | 0.0035 |
| Benzene | 0.17 | 3.3E-04 | 0.17 | 0.41 | 2.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.023 | 0.025 | - | - | - |
| Bromoform | 0.0014 | 0.0025 | 0.0039 | 5.4E-04 | 2.3E-04 | 7.7E-04 |
| Bromomethane | 0.0018 | 5.4E-04 | 0.0023 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.0E-06 | 0.014 | 0.31 | 3.3E-05 | 0.31 |
| Chloroform | 0.0055 | 9.2E-06 | 0.0055 | 0.23 | 9.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-05 | 2.4E-04 | 0.0058 | 1.5E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.8E-04 | 0.0033 | 0.0017 | 2.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0057 | 0.55 | 0.052 | 1.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-06 | 9.6E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-07 | 6.0E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-07 | 3.1E-05 | 1.9E-05 | 4.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-06 | 0.0024 | 0.045 | 7.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 5.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.9E-06 | 4.7E-06 | 0.0059 | 0.0080 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-05 | 5.8E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0035 | 0.0084 | 0.0083 | 1.7E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0041 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.79 | 1.1 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 4.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0032 | 0.0032 | - | 0.0098 | 0.0098 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0056 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.082 | 0.082 |
| Hydrogen Fluoride (HF)[ac] | - | 0.067 | 0.067 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.12 | 0.28 | 0.29 | 0.021 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.073 | 0.073 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.12 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.030 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.037 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0010 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0039 | 0.026 | 0.0060 | 2.5E-04 | 0.0063 |
| Barium | 0.0040 | 7.9E-04 | 0.0048 | 8.2E-04 | 3.8E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.031 | 0.068 | 0.030 | 0.0060 | 0.036 |
| Boron[c] | 0.0037 | 0.0057 | 0.0094 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.15 | 0.024 | 0.051 | 0.075 |
| Chromium (hexavalent)[a] | - | 0.0060 | 0.0060 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0042 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.054 | 0.062 | 0.0060 | 0.010 | 0.017 |
| Lead | 0.0081 | 0.062 | 0.070 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.047 | 0.047 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.027 | 0.029 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.5E-04 | 0.0041 | 3.0E-04 | 8.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.063 | 0.071 | 3.4E-04 | 6.1E-04 | 9.5E-04 |
| Thallium[c] | 0.0073 | 0.073 | 0.080 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.2E-04 |
| Vanadium | 0.0075 | 0.0043 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0075 | 0.0095 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.7E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.6E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.1E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 5.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.9E-06 | 5.9E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.8E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.4E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.6E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.5E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0069 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0024 | 2.8E-04 | 8.7E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.6E-07 | 3.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-04 | 9.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-07 | 2.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.7E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-07 | 2.8E-04 | 1.1E-04 | 2.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.6E-10 | 0.0035 |
| Benzene | 0.17 | 3.4E-04 | 0.17 | 0.41 | 1.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.024 | 0.026 | - | - | - |
| Bromoform | 0.0014 | 0.0026 | 0.0040 | 5.4E-04 | 2.3E-04 | 7.6E-04 |
| Bromomethane | 0.0018 | 5.6E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.2E-06 | 0.014 | 0.31 | 3.2E-05 | 0.31 |
| Chloroform | 0.0055 | 9.5E-06 | 0.0055 | 0.23 | 9.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.0E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-05 | 2.4E-04 | 0.0058 | 1.4E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-04 | 0.0034 | 0.0017 | 2.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0059 | 0.55 | 0.052 | 1.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-06 | 9.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.3E-07 | 6.1E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-07 | 3.1E-05 | 1.9E-05 | 4.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-06 | 0.0024 | 0.045 | 7.4E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 5.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-06 | 4.8E-06 | 0.0059 | 0.0079 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.1E-05 | 5.9E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0037 | 0.0085 | 0.0083 | 1.6E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0043 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.82 | 1.1 | 1.1 | 0.34 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 4.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0051 | 0.0051 | - | 0.021 | 0.021 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0091 | 0.078 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.36 | 0.36 | - | 0.18 | 0.18 |
| Hydrogen Fluoride (HF)[ac] | - | 0.11 | 0.11 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.19 | 0.35 | 0.29 | 0.045 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.25 | 0.27 | 0.070 | 0.080 | 0.15 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0017 | 0.0031 | 1.2E-04 | 4.3E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0064 | 0.028 | 0.0060 | 5.5E-04 | 0.0066 |
| Barium | 0.0040 | 0.0013 | 0.0053 | 8.2E-04 | 8.3E-05 | 9.0E-04 |
| Beryllium | 0.037 | 0.051 | 0.087 | 0.030 | 0.013 | 0.043 |
| Boron[c] | 0.0037 | 0.0093 | 0.013 | - | - | - |
| Cadmium | 0.015 | 0.21 | 0.23 | 0.024 | 0.11 | 0.13 |
| Chromium (hexavalent)[a] | - | 0.0097 | 0.0097 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0068 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.088 | 0.095 | 0.0060 | 0.023 | 0.029 |
| Lead | 0.0081 | 0.10 | 0.11 | 0.0100 | 0.039 | 0.049 |
| Mercury - Inorganic[a] | - | 0.076 | 0.076 | - | 0.0030 | 0.0030 |
| Nickel[c] | 0.0018 | 0.044 | 0.046 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.3E-04 | 0.0044 | 3.0E-04 | 1.9E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.10 | 0.11 | 3.4E-04 | 0.0013 | 0.0017 |
| Thallium[c] | 0.0073 | 0.12 | 0.13 | - | - | - |
| Tin | 3.7E-04 | 0.0027 | 0.0030 | 3.0E-04 | 6.9E-04 | 1.0E-03 |
| Vanadium | 0.0075 | 0.0071 | 0.015 | 0.0015 | 4.6E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.012 | 0.014 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 5.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.4E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.5E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.1E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.3E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.7E-04 | 8.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.5E-04 | 6.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0014 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.3E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.3E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.5E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 9.5E-06 | 9.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.6E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 9.2E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.0E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0047 | 0.0095 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0022 | 0.0032 | 2.8E-04 | 1.9E-04 | 4.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.0E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.3E-04 | 0.0012 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.1E-07 | 4.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-04 | 5.5E-04 | 4.4E-05 | 4.1E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.9E-07 | 2.8E-04 | 1.1E-04 | 5.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.7E-10 | 0.0035 |
| Benzene | 0.17 | 5.5E-04 | 0.17 | 0.41 | 4.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.038 | 0.040 | - | - | - |
| Bromoform | 0.0014 | 0.0042 | 0.0056 | 5.4E-04 | 5.0E-04 | 0.0010 |
| Bromomethane | 0.0018 | 9.1E-04 | 0.0027 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-05 | 0.014 | 0.31 | 7.1E-05 | 0.31 |
| Chloroform | 0.0055 | 1.5E-05 | 0.0055 | 0.23 | 2.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.2E-06 | 3.7E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.8E-05 | 2.6E-04 | 0.0058 | 3.2E-04 | 0.0061 |
| Ethylbenzene | - | - | - | 0.0012 | 4.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-04 | 0.0035 | 0.0017 | 5.3E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0096 | 0.56 | 0.052 | 2.9E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.0E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 8.6E-07 | 6.1E-05 | 0.0014 | 6.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.1E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.8E-07 | 3.1E-05 | 1.9E-05 | 9.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.8E-06 | 0.0024 | 0.045 | 1.6E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.1E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 6.6E-06 | 7.3E-06 | 0.0059 | 0.017 | 0.023 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.3E-05 | 6.2E-04 | 0.0066 | 3.3E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0059 | 0.011 | 0.0083 | 3.5E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0069 | 0.015 | 0.0079 | 3.3E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 1.3 | 1.7 | 1.1 | 0.67 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0018 | 0.028 | 0.55 | 9.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0094 | 0.0094 | - | 0.035 | 0.035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.017 | 0.086 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.67 | 0.67 | - | 0.29 | 0.29 |
| Hydrogen Fluoride (HF)[ac] | - | 0.20 | 0.20 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.28 | 0.44 | 0.29 | 0.070 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.056 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.45 | 0.48 | 0.070 | 0.13 | 0.20 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0031 | 0.0045 | 1.2E-04 | 7.1E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.012 | 0.034 | 0.0060 | 9.1E-04 | 0.0069 |
| Barium | 0.0040 | 0.0024 | 0.0063 | 8.2E-04 | 1.4E-04 | 9.6E-04 |
| Beryllium | 0.037 | 0.093 | 0.13 | 0.030 | 0.022 | 0.052 |
| Boron[c] | 0.0037 | 0.017 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.39 | 0.41 | 0.024 | 0.18 | 0.21 |
| Chromium (hexavalent)[a] | - | 0.018 | 0.018 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.013 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.16 | 0.17 | 0.0060 | 0.038 | 0.044 |
| Lead | 0.0081 | 0.19 | 0.19 | 0.0100 | 0.065 | 0.075 |
| Mercury - Inorganic[a] | - | 0.14 | 0.14 | - | 0.0049 | 0.0049 |
| Nickel[c] | 0.0018 | 0.081 | 0.083 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0050 | 3.0E-04 | 3.1E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.19 | 0.20 | 3.4E-04 | 0.0022 | 0.0025 |
| Thallium[c] | 0.0073 | 0.22 | 0.23 | - | - | - |
| Tin | 3.7E-04 | 0.0049 | 0.0053 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.013 | 0.021 | 0.0015 | 7.6E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.022 | 0.024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-04 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.1E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.5E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.3E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.1E-04 | 9.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.1E-04 | 8.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.6E-04 | 8.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0022 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.7E-05 | 7.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.2E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.6E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.4E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0011 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.6E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0078 | 0.013 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0040 | 0.0051 | 2.8E-04 | 3.1E-04 | 5.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.7E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0012 | 0.0018 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.6E-07 | 7.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.3E-04 | 6.6E-04 | 4.4E-05 | 6.7E-06 | 5.1E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.2E-07 | 2.8E-04 | 1.1E-04 | 8.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 9.4E-10 | 0.0035 |
| Benzene | 0.17 | 0.0010 | 0.17 | 0.41 | 7.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.070 | 0.073 | - | - | - |
| Bromoform | 0.0014 | 0.0077 | 0.0091 | 5.4E-04 | 8.2E-04 | 0.0014 |
| Bromomethane | 0.0018 | 0.0017 | 0.0035 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.8E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 2.8E-05 | 0.0055 | 0.23 | 3.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.7E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.5E-05 | 4.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.0E-05 | 2.9E-04 | 0.0058 | 5.2E-04 | 0.0063 |
| Ethylbenzene | - | - | - | 0.0012 | 6.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-04 | 0.0037 | 0.0017 | 8.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.018 | 0.57 | 0.052 | 4.8E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 9.1E-06 | 1.6E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.6E-06 | 6.2E-05 | 0.0014 | 1.0E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.9E-07 | 3.2E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.1E-06 | 0.0024 | 0.045 | 2.7E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.9E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.3E-05 | 0.0059 | 0.028 | 0.034 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.9E-04 | 0.0066 | 5.4E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.011 | 0.016 | 0.0083 | 5.8E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.013 | 0.021 | 0.0079 | 5.4E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 2.4 | 2.7 | 1.1 | 1.00 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0033 | 0.030 | 0.55 | 0.0015 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0059 | 0.0059 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.010 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.42 | 0.42 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.23 | 0.39 | 0.29 | 0.059 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.28 | 0.31 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0019 | 0.0034 | 1.2E-04 | 5.4E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0073 | 0.029 | 0.0060 | 6.9E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.058 | 0.095 | 0.030 | 0.016 | 0.047 |
| Boron[c] | 0.0037 | 0.011 | 0.014 | - | - | - |
| Cadmium | 0.015 | 0.24 | 0.26 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[a] | - | 0.011 | 0.011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0079 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.10 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.12 | 0.0100 | 0.049 | 0.059 |
| Mercury - Inorganic[a] | - | 0.087 | 0.087 | - | 0.0037 | 0.0037 |
| Nickel[c] | 0.0018 | 0.051 | 0.053 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.4E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0031 | 0.0034 | 3.0E-04 | 8.7E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0081 | 0.016 | 0.0015 | 5.7E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.1E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.7E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-04 | 7.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.9E-04 | 6.3E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.1E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.6E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.5E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.9E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.3E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.3E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.6E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.5E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0059 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0025 | 0.0035 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.8E-07 | 6.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.2E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.7E-07 | 4.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.7E-04 | 4.4E-05 | 5.1E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.5E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.1E-10 | 0.0035 |
| Benzene | 0.17 | 6.4E-04 | 0.17 | 0.41 | 5.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.044 | 0.046 | - | - | - |
| Bromoform | 0.0014 | 0.0048 | 0.0063 | 5.4E-04 | 6.2E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0010 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 8.9E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.4E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.4E-05 | 2.6E-04 | 0.0058 | 3.9E-04 | 0.0061 |
| Ethylbenzene | - | - | - | 0.0012 | 5.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.5E-04 | 0.0035 | 0.0017 | 6.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.052 | 3.6E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.7E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.9E-07 | 6.1E-05 | 0.0014 | 7.8E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.5E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.2E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.6E-06 | 8.3E-06 | 0.0059 | 0.022 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.6E-05 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0068 | 0.012 | 0.0083 | 4.4E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0080 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.5 | 1.9 | 1.1 | 0.79 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0020 | 0.0020 | - | 0.0082 | 0.0082 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0036 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.068 | 0.068 |
| Hydrogen Fluoride (HF)[ac] | - | 0.043 | 0.043 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.059 | 0.22 | 0.29 | 0.017 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.047 | 0.047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.079 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.097 | 0.12 | 0.070 | 0.031 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.5E-04 | 0.0021 | 1.2E-04 | 1.7E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0025 | 0.025 | 0.0060 | 2.1E-04 | 0.0062 |
| Barium | 0.0040 | 5.0E-04 | 0.0045 | 8.2E-04 | 3.2E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.020 | 0.057 | 0.030 | 0.0050 | 0.035 |
| Boron[c] | 0.0037 | 0.0036 | 0.0073 | - | - | - |
| Cadmium | 0.015 | 0.083 | 0.098 | 0.024 | 0.042 | 0.067 |
| Chromium (hexavalent)[a] | - | 0.0038 | 0.0038 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0027 | 0.0094 | - | - | - |
| Cobalt | 0.0074 | 0.034 | 0.042 | 0.0060 | 0.0088 | 0.015 |
| Lead | 0.0081 | 0.040 | 0.048 | 0.0100 | 0.015 | 0.025 |
| Mercury - Inorganic[a] | - | 0.030 | 0.030 | - | 0.0011 | 0.0011 |
| Nickel[c] | 0.0018 | 0.017 | 0.019 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.9E-04 | 0.0040 | 3.0E-04 | 7.3E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.040 | 0.048 | 3.4E-04 | 5.1E-04 | 8.5E-04 |
| Thallium[c] | 0.0073 | 0.046 | 0.054 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 2.7E-04 | 5.7E-04 |
| Vanadium | 0.0075 | 0.0028 | 0.010 | 0.0015 | 1.8E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0047 | 0.0068 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.7E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 9.1E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.6E-05 | 7.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.5E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.8E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.1E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 9.0E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.7E-06 | 3.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.2E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0018 | 0.0066 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.6E-04 | 0.0019 | 2.8E-04 | 7.3E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 8.0E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.3E-07 | 2.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.5E-04 | 8.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.6E-07 | 1.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.9E-05 | 4.8E-04 | 4.4E-05 | 1.6E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 1.9E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.2E-10 | 0.0035 |
| Benzene | 0.17 | 2.2E-04 | 0.17 | 0.41 | 1.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.015 | 0.017 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0031 | 5.4E-04 | 1.9E-04 | 7.3E-04 |
| Bromomethane | 0.0018 | 3.6E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.9E-06 | 0.014 | 0.31 | 2.7E-05 | 0.31 |
| Chloroform | 0.0055 | 6.1E-06 | 0.0055 | 0.23 | 7.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.2E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.5E-05 | 2.3E-04 | 0.0058 | 1.2E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.6E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 2.0E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0038 | 0.55 | 0.052 | 1.1E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.4E-07 | 6.0E-05 | 0.0014 | 2.4E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.6E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.9E-07 | 3.1E-05 | 1.9E-05 | 3.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.1E-06 | 0.0024 | 0.045 | 6.2E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 4.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.6E-06 | 3.3E-06 | 0.0059 | 0.0066 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.3E-05 | 5.7E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0023 | 0.0072 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0027 | 0.011 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.50 | 0.83 | 1.1 | 0.26 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 7.0E-04 | 0.027 | 0.55 | 3.6E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.0073 | 0.0073 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.061 | 0.061 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.051 | 0.21 | 0.29 | 0.017 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.082 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.028 | 0.098 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 1.5E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.9E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.9E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0045 | 0.035 |
| Boron[c] | 0.0037 | 0.0028 | 0.0065 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.038 | 0.062 |
| Chromium (hexavalent)[a] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.0079 | 0.014 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.014 | 0.024 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0010 | 0.0010 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 6.5E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 4.5E-04 | 8.0E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 7.9E-04 | 0.0012 | 3.0E-04 | 2.4E-04 | 5.4E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.6E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.6E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0016 | 0.0064 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 6.5E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.4E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 1.7E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.0E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.5E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.7E-04 | 7.1E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 2.4E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 6.9E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.1E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 1.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.052 | 9.9E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 2.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 5.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 3.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0059 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.1E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0018 | 0.0066 | 0.0083 | 1.2E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.1E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.39 | 0.72 | 1.1 | 0.25 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.3E-04 | 0.027 | 0.55 | 3.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.011 | 0.011 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.091 | 0.091 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.059 | 0.22 | 0.29 | 0.023 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.038 | 0.038 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.063 | 0.74 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.016 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.041 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 2.2E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 2.8E-04 | 0.0063 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 4.3E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0068 | 0.037 |
| Boron[c] | 0.0037 | 0.0028 | 0.0065 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.057 | 0.081 |
| Chromium (hexavalent)[a] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.012 | 0.018 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.020 | 0.030 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0015 | 0.0015 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 9.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 6.8E-04 | 0.0010 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 8.0E-04 | 0.0012 | 3.0E-04 | 3.6E-04 | 6.6E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 2.4E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 7.0E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0024 | 0.0072 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 9.8E-05 | 3.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 2.1E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 2.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.9E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 2.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 2.5E-04 | 7.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 3.6E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 1.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.6E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 2.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 2.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.052 | 1.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 3.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 4.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 8.3E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 5.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0088 | 0.015 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.7E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0018 | 0.0066 | 0.0083 | 1.8E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.7E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.40 | 0.72 | 1.1 | 0.31 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.3E-04 | 0.027 | 0.55 | 4.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0025 | 0.0025 | - | 0.0090 | 0.0090 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.075 | 0.075 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.10 | 0.27 | 0.29 | 0.022 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.081 | 0.081 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.034 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.034 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 3.5E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0055 | 0.036 |
| Boron[c] | 0.0037 | 0.0045 | 0.0082 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.046 | 0.071 |
| Chromium (hexavalent)[a] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.0096 | 0.016 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.017 | 0.027 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 8.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 5.6E-04 | 9.0E-04 |
| Thallium[c] | 0.0073 | 0.057 | 0.064 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 2.9E-04 | 5.9E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0058 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0020 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 8.0E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 1.7E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.4E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 1.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.018 | 0.021 | - | - | - |
| Bromoform | 0.0014 | 0.0020 | 0.0035 | 5.4E-04 | 2.1E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.8E-06 | 0.014 | 0.31 | 3.0E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 8.5E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.5E-04 | 0.0033 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.052 | 1.2E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.1E-07 | 6.0E-05 | 0.0014 | 2.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 3.9E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 6.8E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 4.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.0072 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 1.4E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0029 | 0.0077 | 0.0083 | 1.5E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 1.4E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.65 | 0.98 | 1.1 | 0.34 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.6E-04 | 0.027 | 0.55 | 3.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0044 | 0.0044 | - | 0.026 | 0.026 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0079 | 0.077 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.31 | 0.31 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.094 | 0.094 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.18 | 0.34 | 0.29 | 0.061 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.19 | 0.87 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.047 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.21 | 0.24 | 0.070 | 0.098 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0014 | 0.0029 | 1.2E-04 | 5.3E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0055 | 0.028 | 0.0060 | 6.7E-04 | 0.0067 |
| Barium | 0.0040 | 0.0011 | 0.0051 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.044 | 0.080 | 0.030 | 0.016 | 0.046 |
| Boron[c] | 0.0037 | 0.0080 | 0.012 | - | - | - |
| Cadmium | 0.015 | 0.18 | 0.20 | 0.024 | 0.13 | 0.16 |
| Chromium (hexavalent)[a] | - | 0.0084 | 0.0084 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0059 | 0.013 | - | - | - |
| Cobalt | 0.0074 | 0.076 | 0.083 | 0.0060 | 0.028 | 0.034 |
| Lead | 0.0081 | 0.087 | 0.095 | 0.0100 | 0.048 | 0.058 |
| Mercury - Inorganic[a] | - | 0.065 | 0.065 | - | 0.0036 | 0.0036 |
| Nickel[c] | 0.0018 | 0.038 | 0.040 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.3E-04 | 0.0043 | 3.0E-04 | 2.3E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.088 | 0.096 | 3.4E-04 | 0.0016 | 0.0020 |
| Thallium[c] | 0.0073 | 0.10 | 0.11 | - | - | - |
| Tin | 3.7E-04 | 0.0023 | 0.0027 | 3.0E-04 | 8.4E-04 | 0.0011 |
| Vanadium | 0.0075 | 0.0061 | 0.014 | 0.0015 | 5.6E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.010 | 0.013 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.8E-05 | 7.9E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.1E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.0E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.9E-05 | 7.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.2E-04 | 5.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.6E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.0E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.2E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 8.2E-06 | 8.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.9E-05 | 3.7E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.0E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 7.9E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.6E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0058 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0019 | 0.0029 | 2.8E-04 | 2.3E-04 | 5.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.8E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.1E-07 | 5.1E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.4E-04 | 0.0011 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.1E-04 | 5.3E-04 | 4.4E-05 | 5.0E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.4E-07 | 2.8E-04 | 1.1E-04 | 6.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.0E-10 | 0.0035 |
| Benzene | 0.17 | 4.8E-04 | 0.17 | 0.41 | 5.1E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.033 | 0.035 | - | - | - |
| Bromoform | 0.0014 | 0.0036 | 0.0050 | 5.4E-04 | 6.0E-04 | 0.0011 |
| Bromomethane | 0.0018 | 7.9E-04 | 0.0026 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.7E-06 | 0.014 | 0.31 | 8.6E-05 | 0.31 |
| Chloroform | 0.0055 | 1.3E-05 | 0.0055 | 0.23 | 2.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 7.0E-06 | 3.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.3E-05 | 2.5E-04 | 0.0058 | 3.8E-04 | 0.0061 |
| Ethylbenzene | - | - | - | 0.0012 | 5.0E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.7E-04 | 0.0034 | 0.0017 | 6.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0083 | 0.56 | 0.052 | 3.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 4.3E-06 | 1.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.4E-07 | 6.1E-05 | 0.0014 | 7.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.2E-07 | 3.1E-05 | 1.9E-05 | 1.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.4E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 5.7E-06 | 6.4E-06 | 0.0059 | 0.021 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 7.2E-05 | 6.1E-04 | 0.0066 | 4.0E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0051 | 0.0100 | 0.0083 | 4.3E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0060 | 0.014 | 0.0079 | 4.0E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.2 | 1.5 | 1.1 | 0.77 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0015 | 0.028 | 0.55 | 0.0011 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.0067 | 0.0067 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.056 | 0.056 |
| Hydrogen Fluoride (HF)[ac] | - | 0.032 | 0.032 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.052 | 0.21 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.059 | 0.059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.099 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.025 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.072 | 0.10 | 0.070 | 0.025 | 0.096 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.9E-04 | 0.0020 | 1.2E-04 | 1.4E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.7E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.6E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0042 | 0.034 |
| Boron[c] | 0.0037 | 0.0027 | 0.0064 | - | - | - |
| Cadmium | 0.015 | 0.062 | 0.077 | 0.024 | 0.035 | 0.059 |
| Chromium (hexavalent)[a] | - | 0.0028 | 0.0028 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.033 | 0.0060 | 0.0072 | 0.013 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.012 | 0.022 |
| Mercury - Inorganic[a] | - | 0.022 | 0.022 | - | 9.3E-04 | 9.3E-04 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.1E-04 | 0.0039 | 3.0E-04 | 6.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.038 | 3.4E-04 | 4.2E-04 | 7.6E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.042 | - | - | - |
| Tin | 3.7E-04 | 7.8E-04 | 0.0011 | 3.0E-04 | 2.2E-04 | 5.2E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.4E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0035 | 0.0056 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.2E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.8E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.9E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.3E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.7E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.4E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.3E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 8.9E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0015 | 0.0062 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.4E-04 | 0.0017 | 2.8E-04 | 6.0E-05 | 3.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.0E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-07 | 1.7E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.8E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.3E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-07 | 2.8E-04 | 1.1E-04 | 1.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 1.8E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.013 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.6E-04 | 6.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.9E-06 | 0.014 | 0.31 | 2.2E-05 | 0.31 |
| Chloroform | 0.0055 | 4.5E-06 | 0.0055 | 0.23 | 6.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.0E-04 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 1.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.0E-05 | 0.0033 | 0.0017 | 1.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0028 | 0.55 | 0.052 | 9.1E-05 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-07 | 6.0E-05 | 0.0014 | 2.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.1E-07 | 0.0024 | 0.045 | 5.1E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 3.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-06 | 2.7E-06 | 0.0059 | 0.0054 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-05 | 5.6E-04 | 0.0066 | 1.0E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0017 | 0.0066 | 0.0083 | 1.1E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0020 | 0.0099 | 0.0079 | 1.0E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.38 | 0.71 | 1.1 | 0.25 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-04 | 0.027 | 0.55 | 2.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0019 | 0.0019 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0034 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.041 | 0.041 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.078 | 0.24 | 0.29 | 0.036 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.064 | 0.064 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.79 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.027 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.092 | 0.12 | 0.070 | 0.063 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.2E-04 | 0.0021 | 1.2E-04 | 3.4E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0024 | 0.024 | 0.0060 | 4.3E-04 | 0.0065 |
| Barium | 0.0040 | 4.8E-04 | 0.0045 | 8.2E-04 | 6.5E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.019 | 0.056 | 0.030 | 0.010 | 0.041 |
| Boron[c] | 0.0037 | 0.0035 | 0.0072 | - | - | - |
| Cadmium | 0.015 | 0.080 | 0.094 | 0.024 | 0.087 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.0036 | 0.0036 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0026 | 0.0093 | - | - | - |
| Cobalt | 0.0074 | 0.033 | 0.040 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.038 | 0.046 | 0.0100 | 0.031 | 0.041 |
| Mercury - Inorganic[a] | - | 0.028 | 0.028 | - | 0.0023 | 0.0023 |
| Nickel[c] | 0.0018 | 0.017 | 0.018 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.7E-04 | 0.0039 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.038 | 0.046 | 3.4E-04 | 0.0010 | 0.0014 |
| Thallium[c] | 0.0073 | 0.044 | 0.052 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 5.4E-04 | 8.5E-04 |
| Vanadium | 0.0075 | 0.0026 | 0.010 | 0.0015 | 3.6E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0045 | 0.0066 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.1E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.6E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.3E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 8.7E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.3E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.4E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 8.6E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.6E-06 | 3.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.1E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0037 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.2E-04 | 0.0018 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 7.6E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.2E-07 | 2.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.3E-04 | 8.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.5E-07 | 1.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.7E-05 | 4.7E-04 | 4.4E-05 | 3.2E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 4.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 4.5E-10 | 0.0035 |
| Benzene | 0.17 | 2.1E-04 | 0.17 | 0.41 | 3.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0030 | 5.4E-04 | 3.9E-04 | 9.2E-04 |
| Bromomethane | 0.0018 | 3.4E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.8E-06 | 0.014 | 0.31 | 5.6E-05 | 0.31 |
| Chloroform | 0.0055 | 5.8E-06 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.0E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.1E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.4E-05 | 2.3E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 4.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0036 | 0.55 | 0.052 | 2.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.2E-07 | 6.0E-05 | 0.0014 | 4.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.5E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.8E-07 | 3.1E-05 | 1.9E-05 | 7.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.0E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 8.9E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 2.5E-06 | 3.2E-06 | 0.0059 | 0.014 | 0.019 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.1E-05 | 5.7E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0022 | 0.0071 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0026 | 0.010 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.50 | 0.83 | 1.1 | 0.48 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.7E-04 | 0.027 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0012 | 0.0012 | - | 0.0087 | 0.0087 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0021 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.085 | 0.085 | - | 0.072 | 0.072 |
| Hydrogen Fluoride (HF)[ac] | - | 0.026 | 0.026 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.047 | 0.21 | 0.29 | 0.020 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.031 | 0.031 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.052 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.058 | 0.086 | 0.070 | 0.033 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.9E-04 | 0.0019 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0015 | 0.024 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 3.0E-04 | 0.0043 | 8.2E-04 | 3.4E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.012 | 0.049 | 0.030 | 0.0054 | 0.036 |
| Boron[c] | 0.0037 | 0.0022 | 0.0059 | - | - | - |
| Cadmium | 0.015 | 0.050 | 0.064 | 0.024 | 0.045 | 0.069 |
| Chromium (hexavalent)[a] | - | 0.0023 | 0.0023 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0016 | 0.0083 | - | - | - |
| Cobalt | 0.0074 | 0.021 | 0.028 | 0.0060 | 0.0093 | 0.015 |
| Lead | 0.0081 | 0.024 | 0.032 | 0.0100 | 0.016 | 0.026 |
| Mercury - Inorganic[a] | - | 0.018 | 0.018 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.010 | 0.012 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.7E-04 | 0.0038 | 3.0E-04 | 7.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.024 | 0.032 | 3.4E-04 | 5.4E-04 | 8.8E-04 |
| Thallium[c] | 0.0073 | 0.028 | 0.035 | - | - | - |
| Tin | 3.7E-04 | 6.2E-04 | 9.9E-04 | 3.0E-04 | 2.8E-04 | 5.8E-04 |
| Vanadium | 0.0075 | 0.0016 | 0.0092 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0028 | 0.0049 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.3E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.0E-05 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.9E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.7E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.9E-05 | 4.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.5E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.2E-06 | 2.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0019 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.1E-04 | 0.0015 | 2.8E-04 | 7.7E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.8E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.4E-07 | 1.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.5E-04 | 7.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 9.6E-08 | 9.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.9E-05 | 4.6E-04 | 4.4E-05 | 1.7E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.1E-08 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.3E-10 | 0.0035 |
| Benzene | 0.17 | 1.3E-04 | 0.17 | 0.41 | 1.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0089 | 0.011 | - | - | - |
| Bromoform | 0.0014 | 9.8E-04 | 0.0024 | 5.4E-04 | 2.0E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 2.1E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.3E-06 | 0.014 | 0.31 | 2.9E-05 | 0.31 |
| Chloroform | 0.0055 | 3.6E-06 | 0.0055 | 0.23 | 8.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.9E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.9E-06 | 2.3E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.2E-05 | 0.0032 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0022 | 0.55 | 0.052 | 1.2E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-06 | 7.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.0E-07 | 6.0E-05 | 0.0014 | 2.5E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.1E-07 | 3.1E-05 | 1.9E-05 | 3.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.5E-07 | 0.0024 | 0.045 | 6.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 4.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.5E-06 | 2.3E-06 | 0.0059 | 0.0070 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.9E-05 | 5.5E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0014 | 0.0062 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0016 | 0.0095 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.31 | 0.64 | 1.1 | 0.24 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.2E-04 | 0.027 | 0.55 | 3.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0033 | 0.0033 | - | 0.015 | 0.015 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0059 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.24 | 0.24 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.071 | 0.071 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.12 | 0.28 | 0.29 | 0.032 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.085 | 0.085 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.035 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.16 | 0.19 | 0.070 | 0.055 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.0E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0042 | 0.026 | 0.0060 | 3.8E-04 | 0.0064 |
| Barium | 0.0040 | 8.4E-04 | 0.0048 | 8.2E-04 | 5.7E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.033 | 0.070 | 0.030 | 0.0090 | 0.039 |
| Boron[c] | 0.0037 | 0.0060 | 0.0098 | - | - | - |
| Cadmium | 0.015 | 0.14 | 0.15 | 0.024 | 0.076 | 0.100 |
| Chromium (hexavalent)[a] | - | 0.0063 | 0.0063 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0044 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.057 | 0.065 | 0.0060 | 0.016 | 0.022 |
| Lead | 0.0081 | 0.066 | 0.074 | 0.0100 | 0.027 | 0.037 |
| Mercury - Inorganic[a] | - | 0.049 | 0.049 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.029 | 0.031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.7E-04 | 0.0041 | 3.0E-04 | 1.3E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.066 | 0.075 | 3.4E-04 | 9.1E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.077 | 0.084 | - | - | - |
| Tin | 3.7E-04 | 0.0017 | 0.0021 | 3.0E-04 | 4.8E-04 | 7.8E-04 |
| Vanadium | 0.0075 | 0.0046 | 0.012 | 0.0015 | 3.1E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0079 | 0.0100 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.9E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.6E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.5E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-04 | 5.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.3E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.5E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.2E-06 | 6.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.0E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.0E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.0E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0032 | 0.0080 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0025 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.8E-07 | 3.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.1E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.7E-07 | 2.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.2E-05 | 5.1E-04 | 4.4E-05 | 2.8E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.5E-07 | 2.8E-04 | 1.1E-04 | 3.5E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.9E-10 | 0.0035 |
| Benzene | 0.17 | 3.6E-04 | 0.17 | 0.41 | 2.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.025 | 0.027 | - | - | - |
| Bromoform | 0.0014 | 0.0027 | 0.0042 | 5.4E-04 | 3.4E-04 | 8.8E-04 |
| Bromomethane | 0.0018 | 5.9E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.5E-06 | 0.014 | 0.31 | 4.8E-05 | 0.31 |
| Chloroform | 0.0055 | 1.0E-05 | 0.0055 | 0.23 | 1.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.4E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.3E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.5E-05 | 2.4E-04 | 0.0058 | 2.2E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 2.8E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.0E-04 | 0.0034 | 0.0017 | 3.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0063 | 0.55 | 0.052 | 2.0E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.2E-06 | 9.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.6E-07 | 6.1E-05 | 0.0014 | 4.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.1E-07 | 3.1E-05 | 1.9E-05 | 6.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.8E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.8E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.3E-06 | 5.0E-06 | 0.0059 | 0.012 | 0.018 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.4E-05 | 5.9E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0039 | 0.0087 | 0.0083 | 2.4E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0045 | 0.012 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.86 | 1.2 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0012 | 0.027 | 0.55 | 6.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0035 | 0.0035 | - | 0.019 | 0.019 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0063 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.25 | 0.25 | - | 0.16 | 0.16 |
| Hydrogen Fluoride (HF)[ac] | - | 0.075 | 0.075 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.13 | 0.30 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.055 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.17 | 0.20 | 0.070 | 0.073 | 0.14 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.9E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0044 | 0.026 | 0.0060 | 5.0E-04 | 0.0065 |
| Barium | 0.0040 | 8.8E-04 | 0.0049 | 8.2E-04 | 7.6E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.035 | 0.071 | 0.030 | 0.012 | 0.042 |
| Boron[c] | 0.0037 | 0.0064 | 0.010 | - | - | - |
| Cadmium | 0.015 | 0.15 | 0.16 | 0.024 | 0.10 | 0.12 |
| Chromium (hexavalent)[a] | - | 0.0067 | 0.0067 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0047 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.060 | 0.068 | 0.0060 | 0.021 | 0.027 |
| Lead | 0.0081 | 0.069 | 0.078 | 0.0100 | 0.036 | 0.046 |
| Mercury - Inorganic[a] | - | 0.052 | 0.052 | - | 0.0027 | 0.0027 |
| Nickel[c] | 0.0018 | 0.030 | 0.032 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.0E-04 | 0.0042 | 3.0E-04 | 1.7E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.070 | 0.078 | 3.4E-04 | 0.0012 | 0.0015 |
| Thallium[c] | 0.0073 | 0.081 | 0.089 | - | - | - |
| Tin | 3.7E-04 | 0.0018 | 0.0022 | 3.0E-04 | 6.3E-04 | 9.3E-04 |
| Vanadium | 0.0075 | 0.0048 | 0.012 | 0.0015 | 4.2E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.0083 | 0.010 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.0E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.2E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.9E-05 | 7.4E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.7E-04 | 5.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0012 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.6E-05 | 7.0E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.0E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.7E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.5E-06 | 6.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.1E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.7E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0043 | 0.0091 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0015 | 0.0025 | 2.8E-04 | 1.7E-04 | 4.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.0E-07 | 4.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.3E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.6E-05 | 5.1E-04 | 4.4E-05 | 3.7E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-07 | 2.8E-04 | 1.1E-04 | 4.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.2E-10 | 0.0035 |
| Benzene | 0.17 | 3.8E-04 | 0.17 | 0.41 | 3.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.026 | 0.028 | - | - | - |
| Bromoform | 0.0014 | 0.0029 | 0.0043 | 5.4E-04 | 4.5E-04 | 9.9E-04 |
| Bromomethane | 0.0018 | 6.3E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.9E-06 | 0.014 | 0.31 | 6.4E-05 | 0.31 |
| Chloroform | 0.0055 | 1.1E-05 | 0.0055 | 0.23 | 1.8E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.6E-06 | 3.5E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.6E-05 | 2.5E-04 | 0.0058 | 2.9E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.1E-04 | 0.0034 | 0.0017 | 4.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0066 | 0.56 | 0.052 | 2.6E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 3.4E-06 | 1.0E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.9E-07 | 6.1E-05 | 0.0014 | 5.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.8E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.3E-07 | 3.1E-05 | 1.9E-05 | 8.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-06 | 0.0024 | 0.045 | 1.5E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.0E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.5E-06 | 5.3E-06 | 0.0059 | 0.016 | 0.022 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.7E-05 | 5.9E-04 | 0.0066 | 3.0E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0041 | 0.0089 | 0.0083 | 3.2E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0047 | 0.013 | 0.0079 | 3.0E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 0.91 | 1.2 | 1.1 | 0.65 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0012 | 0.027 | 0.55 | 8.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0065 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0039 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.4E-05 | 0.015 |
| Arsenic | 0.12 | 9.0E-05 | 0.12 |
| Barium | 0.0049 | 6.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0045 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.0E-05 | 1.0E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.2E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.6E-04 | 1.6E-04 |
| Nickel | 0.045 | 0.0056 | 0.050 |
| Phosphorus | 7.3E-10 | 2.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.7E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.8E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 1.0E-07 | 1.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.6E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.3E-09 | 6.3E-09 |
| Pentachlorobenzene[a] | - | 4.4E-09 | 4.4E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.8E-07 | 1.8E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.9E-10 | 0.12 |
| Benzene | 0.13 | 3.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 3.0E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.4E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.1E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.7E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.9E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.4E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.2E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.8E-05 | 8.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.3E-04 | 7.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.6E-05 | 0.12 |
| Barium | 0.0049 | 3.4E-06 | 0.0050 |
| Beryllium | 0.043 | 7.7E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.2E-06 | 5.2E-06 |
| Cobalt | 0.0060 | 9.4E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.1E-05 | 8.1E-05 |
| Nickel | 0.045 | 0.0028 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.9E-06 | 0.015 |
| Silver | 0.034 | 5.5E-04 | 0.035 |
| Thallium | 0.029 | 6.3E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.9E-08 | 8.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0091 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.8E-05 | 8.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.3E-04 | 7.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.5E-05 | 0.12 |
| Barium | 0.0049 | 3.4E-06 | 0.0050 |
| Beryllium | 0.043 | 7.7E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.2E-06 | 5.2E-06 |
| Cobalt | 0.0060 | 9.4E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.1E-05 | 8.1E-05 |
| Nickel | 0.045 | 0.0028 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.9E-06 | 0.015 |
| Silver | 0.034 | 5.4E-04 | 0.035 |
| Thallium | 0.029 | 6.3E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.1E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.4E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.9E-08 | 8.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.1E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0091 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.6E-04 | 1.6E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0013 | 0.0013 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0059 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.5E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0035 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.0E-05 | 0.015 |
| Arsenic | 0.12 | 8.2E-05 | 0.12 |
| Barium | 0.0049 | 6.2E-06 | 0.0050 |
| Beryllium | 0.043 | 1.4E-04 | 0.043 |
| Boron | 0.0031 | 9.0E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0041 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.4E-06 | 9.4E-06 |
| Cobalt | 0.0060 | 1.7E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.9E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0051 | 0.050 |
| Phosphorus | 7.3E-10 | 2.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.0E-06 | 0.015 |
| Silver | 0.034 | 9.8E-04 | 0.035 |
| Thallium | 0.029 | 0.0011 | 0.030 |
| Tin | 0.0015 | 2.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Fluorene[a] | - | 9.2E-08 | 9.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 9.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.7E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.7E-09 | 5.7E-09 |
| Pentachlorobenzene[a] | - | 4.0E-09 | 4.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.2E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.6E-07 | 1.6E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.1E-08 | 1.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 3.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.7E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.3E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.5E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.016 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.9E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0048 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.6E-05 | 0.12 |
| Barium | 0.0049 | 5.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.6E-06 | 7.6E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.4E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0041 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.7E-06 | 0.015 |
| Silver | 0.034 | 7.9E-04 | 0.035 |
| Thallium | 0.029 | 9.2E-04 | 0.030 |
| Tin | 0.0015 | 2.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.9E-07 | 0.0023 |
| Fluorene[a] | - | 7.4E-08 | 7.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorobenzene[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorophenol | 8.2E-04 | 9.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.2E-09 | 9.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.4E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0014 | 0.0014 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0062 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.2E-05 | 0.015 |
| Arsenic | 0.12 | 8.6E-05 | 0.12 |
| Barium | 0.0049 | 6.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.4E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0043 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.8E-06 | 9.8E-06 |
| Cobalt | 0.0060 | 1.8E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.1E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0054 | 0.050 |
| Phosphorus | 7.3E-10 | 2.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.4E-06 | 0.015 |
| Silver | 0.034 | 0.0010 | 0.035 |
| Thallium | 0.029 | 0.0012 | 0.030 |
| Tin | 0.0015 | 2.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 9.6E-08 | 9.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.8E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorobenzene[a] | - | 4.2E-09 | 4.2E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.7E-07 | 1.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.2E-08 | 1.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 3.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.9E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.4E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.4E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.8E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.1E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.2E-05 | 7.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.0E-04 | 6.0E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.8E-05 | 0.015 |
| Arsenic | 0.12 | 3.7E-05 | 0.12 |
| Barium | 0.0049 | 2.8E-06 | 0.0050 |
| Beryllium | 0.043 | 6.3E-05 | 0.043 |
| Boron | 0.0031 | 4.1E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0019 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.3E-06 | 4.3E-06 |
| Cobalt | 0.0060 | 7.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.7E-05 | 6.7E-05 |
| Nickel | 0.045 | 0.0023 | 0.047 |
| Phosphorus | 7.3E-10 | 9.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.2E-06 | 0.015 |
| Silver | 0.034 | 4.5E-04 | 0.035 |
| Thallium | 0.029 | 5.2E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.4E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.0E-07 | 0.0023 |
| Fluorene[a] | - | 4.2E-08 | 4.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.8E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.6E-09 | 2.6E-09 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.3E-08 | 7.3E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.2E-09 | 5.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.8E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.9E-11 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.8E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.6E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.0E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.0E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0075 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.5E-05 | 8.5E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.1E-04 | 7.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0032 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0019 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.4E-05 | 0.12 |
| Barium | 0.0049 | 3.3E-06 | 0.0050 |
| Beryllium | 0.043 | 7.5E-05 | 0.043 |
| Boron | 0.0031 | 4.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0022 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.0E-06 | 5.0E-06 |
| Cobalt | 0.0060 | 9.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.9E-05 | 7.9E-05 |
| Nickel | 0.045 | 0.0027 | 0.048 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.8E-06 | 0.015 |
| Silver | 0.034 | 5.3E-04 | 0.035 |
| Thallium | 0.029 | 6.2E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.0E-07 | 0.0023 |
| Fluorene[a] | - | 4.9E-08 | 4.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.1E-09 | 3.1E-09 |
| Pentachlorobenzene[a] | - | 2.1E-09 | 2.1E-09 |
| Pentachlorophenol | 8.2E-04 | 6.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.6E-08 | 8.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.1E-09 | 6.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.3E-11 | 0.12 |
| Benzene | 0.13 | 1.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.1E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.6E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.4E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0089 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.8E-05 | 9.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.2E-04 | 8.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0037 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.9E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0022 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.5E-05 | 0.015 |
| Arsenic | 0.12 | 5.1E-05 | 0.12 |
| Barium | 0.0049 | 3.9E-06 | 0.0050 |
| Beryllium | 0.043 | 8.7E-05 | 0.043 |
| Boron | 0.0031 | 5.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.8E-06 | 5.8E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.1E-05 | 9.1E-05 |
| Nickel | 0.045 | 0.0032 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.4E-06 | 0.015 |
| Silver | 0.034 | 6.1E-04 | 0.035 |
| Thallium | 0.029 | 7.1E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.3E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Fluorene[a] | - | 5.7E-08 | 5.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.6E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.5E-09 | 3.5E-09 |
| Pentachlorobenzene[a] | - | 2.5E-09 | 2.5E-09 |
| Pentachlorophenol | 8.2E-04 | 7.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.0E-07 | 1.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 7.1E-09 | 7.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.9E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.2E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 8.0E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.9E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.010 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.8E-05 | 6.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.6E-04 | 5.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0015 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.7E-05 | 0.015 |
| Arsenic | 0.12 | 3.5E-05 | 0.12 |
| Barium | 0.0049 | 2.6E-06 | 0.0050 |
| Beryllium | 0.043 | 6.0E-05 | 0.043 |
| Boron | 0.0031 | 3.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0018 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.0E-06 | 4.0E-06 |
| Cobalt | 0.0060 | 7.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.3E-05 | 6.3E-05 |
| Nickel | 0.045 | 0.0022 | 0.047 |
| Phosphorus | 7.3E-10 | 9.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.0E-06 | 0.015 |
| Silver | 0.034 | 4.2E-04 | 0.035 |
| Thallium | 0.029 | 4.9E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.9E-08 | 3.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.3E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorobenzene[a] | - | 1.7E-09 | 1.7E-09 |
| Pentachlorophenol | 8.2E-04 | 5.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.9E-08 | 6.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.9E-09 | 4.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.2E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.4E-11 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0054 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.5E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.6E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0070 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.6E-04 | 1.6E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0014 | 0.0014 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0061 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.2E-05 | 0.015 |
| Arsenic | 0.12 | 8.5E-05 | 0.12 |
| Barium | 0.0049 | 6.4E-06 | 0.0050 |
| Beryllium | 0.043 | 1.4E-04 | 0.043 |
| Boron | 0.0031 | 9.3E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0043 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.7E-06 | 9.7E-06 |
| Cobalt | 0.0060 | 1.8E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.0E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0053 | 0.050 |
| Phosphorus | 7.3E-10 | 2.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.3E-06 | 0.015 |
| Silver | 0.034 | 0.0010 | 0.035 |
| Thallium | 0.029 | 0.0012 | 0.030 |
| Tin | 0.0015 | 2.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Fluorene[a] | - | 9.5E-08 | 9.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 9.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.8E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.9E-09 | 5.9E-09 |
| Pentachlorobenzene[a] | - | 4.1E-09 | 4.1E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.7E-07 | 1.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.2E-08 | 1.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 3.1E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.8E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.3E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.8E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.0E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.3E-05 | 8.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.9E-04 | 6.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0031 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.1E-05 | 0.015 |
| Arsenic | 0.12 | 4.3E-05 | 0.12 |
| Barium | 0.0049 | 3.2E-06 | 0.0050 |
| Beryllium | 0.043 | 7.3E-05 | 0.043 |
| Boron | 0.0031 | 4.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0021 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.9E-06 | 4.9E-06 |
| Cobalt | 0.0060 | 8.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.7E-05 | 7.7E-05 |
| Nickel | 0.045 | 0.0027 | 0.047 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.7E-06 | 0.015 |
| Silver | 0.034 | 5.1E-04 | 0.035 |
| Thallium | 0.029 | 6.0E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.8E-07 | 0.0023 |
| Fluorene[a] | - | 4.8E-08 | 4.8E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.0E-09 | 3.0E-09 |
| Pentachlorobenzene[a] | - | 2.1E-09 | 2.1E-09 |
| Pentachlorophenol | 8.2E-04 | 6.3E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.4E-08 | 8.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.9E-09 | 5.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.0E-11 | 0.12 |
| Benzene | 0.13 | 1.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.4E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.5E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.4E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.3E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0086 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0046 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.9E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 9.0E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.2E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.7E-07 | 0.0023 |
| Fluorene[a] | - | 7.2E-08 | 7.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.5E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.3E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 7.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.5E-09 | 4.5E-09 |
| Pentachlorobenzene[a] | - | 3.1E-09 | 3.1E-09 |
| Pentachlorophenol | 8.2E-04 | 9.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 8.9E-09 | 8.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.0E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.9E-05 | 8.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.4E-04 | 7.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.3E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.3E-05 | 0.015 |
| Arsenic | 0.12 | 4.6E-05 | 0.12 |
| Barium | 0.0049 | 3.5E-06 | 0.0050 |
| Beryllium | 0.043 | 7.9E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.3E-06 | 5.3E-06 |
| Cobalt | 0.0060 | 9.6E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.7E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.3E-05 | 8.3E-05 |
| Nickel | 0.045 | 0.0029 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.0E-06 | 0.015 |
| Silver | 0.034 | 5.5E-04 | 0.035 |
| Thallium | 0.029 | 6.4E-04 | 0.030 |
| Tin | 0.0015 | 1.5E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.2E-08 | 5.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.6E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.0E-08 | 9.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.4E-09 | 6.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.7E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.9E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 1.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0093 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.7E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0047 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.6E-05 | 0.12 |
| Barium | 0.0049 | 5.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.5E-06 | 7.5E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.4E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0041 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.6E-06 | 0.015 |
| Silver | 0.034 | 7.9E-04 | 0.035 |
| Thallium | 0.029 | 9.2E-04 | 0.030 |
| Tin | 0.0015 | 2.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.9E-07 | 0.0023 |
| Fluorene[a] | - | 7.4E-08 | 7.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorobenzene[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorophenol | 8.2E-04 | 9.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.1E-09 | 9.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.4E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0050 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0030 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.4E-05 | 0.015 |
| Arsenic | 0.12 | 6.9E-05 | 0.12 |
| Barium | 0.0049 | 5.2E-06 | 0.0050 |
| Beryllium | 0.043 | 1.2E-04 | 0.043 |
| Boron | 0.0031 | 7.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0034 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.9E-06 | 7.9E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.5E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0043 | 0.049 |
| Phosphorus | 7.3E-10 | 1.8E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.9E-06 | 0.015 |
| Silver | 0.034 | 8.2E-04 | 0.035 |
| Thallium | 0.029 | 9.6E-04 | 0.030 |
| Tin | 0.0015 | 2.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.8E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 9.3E-07 | 0.0023 |
| Fluorene[a] | - | 7.7E-08 | 7.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 8.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.8E-09 | 4.8E-09 |
| Pentachlorobenzene[a] | - | 3.3E-09 | 3.3E-09 |
| Pentachlorophenol | 8.2E-04 | 1.0E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.5E-09 | 9.5E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.8E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.1E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 7.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 2.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.1E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.014 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.5E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Max GLC** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 5.8E-09 |
| Beryllium | 7.1E-07 | 2.6E-09 |
| Cadmium | 5.9E-06 | 2.2E-07 |
| Chromium (hexavalent)[a] | - | 7.8E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 7.9E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 7.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.9E-16 |
| Benzene | 3.1E-05 | 7.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.5E-11 |
| Chloroform | 3.7E-06 | 3.8E-11 |
| Dichloromethane | 3.6E-07 | 2.7E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.8E-10 |
| Formaldehyde | 8.8E-06 | 8.1E-10 |
| Tetrachloroethene | 1.4E-06 | 9.5E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 9.7E-13 |
| Vinyl chloride | 3.2E-08 | 1.2E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.7E-09 |
| Lung Carcinogens | 4.7E-05 | 3.9E-07 |
| Skin Carcinogens | 2.1E-05 | 8.9E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Schools** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.9E-09 |
| Beryllium | 7.1E-07 | 1.3E-09 |
| Cadmium | 5.9E-06 | 1.1E-07 |
| Chromium (hexavalent)[a] | - | 4.0E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.5E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.0E-16 |
| Benzene | 3.1E-05 | 3.9E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.7E-12 |
| Chloroform | 3.7E-06 | 1.9E-11 |
| Dichloromethane | 3.6E-07 | 1.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 4.1E-10 |
| Tetrachloroethene | 1.4E-06 | 4.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.9E-13 |
| Vinyl chloride | 3.2E-08 | 6.2E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.6E-10 |
| Lung Carcinogens | 4.7E-05 | 2.0E-07 |
| Skin Carcinogens | 2.1E-05 | 4.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Daycares** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.9E-09 |
| Beryllium | 7.1E-07 | 1.3E-09 |
| Cadmium | 5.9E-06 | 1.1E-07 |
| Chromium (hexavalent)[a] | - | 3.9E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.5E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.8E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.0E-16 |
| Benzene | 3.1E-05 | 3.9E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.7E-12 |
| Chloroform | 3.7E-06 | 1.9E-11 |
| Dichloromethane | 3.6E-07 | 1.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 4.1E-10 |
| Tetrachloroethene | 1.4E-06 | 4.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.9E-13 |
| Vinyl chloride | 3.2E-08 | 6.2E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.6E-10 |
| Lung Carcinogens | 4.7E-05 | 2.0E-07 |
| Skin Carcinogens | 2.1E-05 | 4.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Farms** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 5.3E-09 |
| Beryllium | 7.1E-07 | 2.3E-09 |
| Cadmium | 5.9E-06 | 2.0E-07 |
| Chromium (hexavalent)[a] | - | 7.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 7.2E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.8E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 7.0E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 4.8E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.0E-16 |
| Benzene | 3.1E-05 | 7.1E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.4E-11 |
| Chloroform | 3.7E-06 | 3.4E-11 |
| Dichloromethane | 3.6E-07 | 2.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.2E-10 |
| Formaldehyde | 8.8E-06 | 7.4E-10 |
| Tetrachloroethene | 1.4E-06 | 8.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 8.9E-13 |
| Vinyl chloride | 3.2E-08 | 1.1E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.6E-09 |
| Lung Carcinogens | 4.7E-05 | 3.6E-07 |
| Skin Carcinogens | 2.1E-05 | 8.1E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Current/Future Commercial/Industrial 400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.3E-09 |
| Beryllium | 7.1E-07 | 1.9E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.7E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.8E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 5.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.8E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.3E-16 |
| Benzene | 3.1E-05 | 5.7E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 2.8E-11 |
| Dichloromethane | 3.6E-07 | 2.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.2E-10 |
| Formaldehyde | 8.8E-06 | 5.9E-10 |
| Tetrachloroethene | 1.4E-06 | 7.0E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 7.1E-13 |
| Vinyl chloride | 3.2E-08 | 9.1E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.3E-09 |
| Lung Carcinogens | 4.7E-05 | 2.9E-07 |
| Skin Carcinogens | 2.1E-05 | 6.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Park/Recreational** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 5.6E-09 |
| Beryllium | 7.1E-07 | 2.5E-09 |
| Cadmium | 5.9E-06 | 2.1E-07 |
| Chromium (hexavalent)[a] | - | 7.5E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 7.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 7.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.5E-16 |
| Benzene | 3.1E-05 | 7.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.5E-11 |
| Chloroform | 3.7E-06 | 3.6E-11 |
| Dichloromethane | 3.6E-07 | 2.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.5E-10 |
| Formaldehyde | 8.8E-06 | 7.7E-10 |
| Tetrachloroethene | 1.4E-06 | 9.1E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 9.3E-13 |
| Vinyl chloride | 3.2E-08 | 1.2E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.6E-09 |
| Lung Carcinogens | 4.7E-05 | 3.7E-07 |
| Skin Carcinogens | 2.1E-05 | 8.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Hospitals** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.4E-09 |
| Beryllium | 7.1E-07 | 1.1E-09 |
| Cadmium | 5.9E-06 | 9.1E-08 |
| Chromium (hexavalent)[a] | - | 3.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.1E-16 |
| Benzene | 3.1E-05 | 3.2E-10 |
| Carbon tetrachloride | 9.2E-06 | 6.3E-12 |
| Chloroform | 3.7E-06 | 1.6E-11 |
| Dichloromethane | 3.6E-07 | 1.1E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.4E-10 |
| Formaldehyde | 8.8E-06 | 3.4E-10 |
| Tetrachloroethene | 1.4E-06 | 3.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.0E-13 |
| Vinyl chloride | 3.2E-08 | 5.1E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 7.1E-10 |
| Lung Carcinogens | 4.7E-05 | 1.6E-07 |
| Skin Carcinogens | 2.1E-05 | 3.7E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Retirement Homes** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.8E-09 |
| Beryllium | 7.1E-07 | 1.3E-09 |
| Cadmium | 5.9E-06 | 1.1E-07 |
| Chromium (hexavalent)[a] | - | 3.8E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.9E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.5E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.7E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.6E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.9E-16 |
| Benzene | 3.1E-05 | 3.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.5E-12 |
| Chloroform | 3.7E-06 | 1.9E-11 |
| Dichloromethane | 3.6E-07 | 1.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.8E-10 |
| Formaldehyde | 8.8E-06 | 4.0E-10 |
| Tetrachloroethene | 1.4E-06 | 4.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.8E-13 |
| Vinyl chloride | 3.2E-08 | 6.1E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.4E-10 |
| Lung Carcinogens | 4.7E-05 | 1.9E-07 |
| Skin Carcinogens | 2.1E-05 | 4.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Bowmanville** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.3E-09 |
| Beryllium | 7.1E-07 | 1.5E-09 |
| Cadmium | 5.9E-06 | 1.3E-07 |
| Chromium (hexavalent)[a] | - | 4.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 4.3E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.6E-16 |
| Benzene | 3.1E-05 | 4.4E-10 |
| Carbon tetrachloride | 9.2E-06 | 8.6E-12 |
| Chloroform | 3.7E-06 | 2.1E-11 |
| Dichloromethane | 3.6E-07 | 1.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.3E-10 |
| Formaldehyde | 8.8E-06 | 4.6E-10 |
| Tetrachloroethene | 1.4E-06 | 5.4E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.5E-13 |
| Vinyl chloride | 3.2E-08 | 7.0E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 9.7E-10 |
| Lung Carcinogens | 4.7E-05 | 2.2E-07 |
| Skin Carcinogens | 2.1E-05 | 5.0E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.3E-09 |
| Beryllium | 7.1E-07 | 1.0E-09 |
| Cadmium | 5.9E-06 | 8.6E-08 |
| Chromium (hexavalent)[a] | - | 3.0E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.1E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.0E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 3.9E-16 |
| Benzene | 3.1E-05 | 3.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 5.9E-12 |
| Chloroform | 3.7E-06 | 1.5E-11 |
| Dichloromethane | 3.6E-07 | 1.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.2E-10 |
| Formaldehyde | 8.8E-06 | 3.2E-10 |
| Tetrachloroethene | 1.4E-06 | 3.7E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 3.8E-13 |
| Vinyl chloride | 3.2E-08 | 4.8E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 6.7E-10 |
| Lung Carcinogens | 4.7E-05 | 1.5E-07 |
| Skin Carcinogens | 2.1E-05 | 3.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Rd. Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 5.5E-09 |
| Beryllium | 7.1E-07 | 2.4E-09 |
| Cadmium | 5.9E-06 | 2.1E-07 |
| Chromium (hexavalent)[a] | - | 7.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 7.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 7.2E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 4.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.4E-16 |
| Benzene | 3.1E-05 | 7.3E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.4E-11 |
| Chloroform | 3.7E-06 | 3.6E-11 |
| Dichloromethane | 3.6E-07 | 2.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.4E-10 |
| Formaldehyde | 8.8E-06 | 7.6E-10 |
| Tetrachloroethene | 1.4E-06 | 9.0E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 9.2E-13 |
| Vinyl chloride | 3.2E-08 | 1.2E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.6E-09 |
| Lung Carcinogens | 4.7E-05 | 3.7E-07 |
| Skin Carcinogens | 2.1E-05 | 8.4E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Maple Grove** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 2.8E-09 |
| Beryllium | 7.1E-07 | 1.2E-09 |
| Cadmium | 5.9E-06 | 1.1E-07 |
| Chromium (hexavalent)[a] | - | 3.7E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 3.8E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.5E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.5E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.7E-16 |
| Benzene | 3.1E-05 | 3.7E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.3E-12 |
| Chloroform | 3.7E-06 | 1.8E-11 |
| Dichloromethane | 3.6E-07 | 1.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.7E-10 |
| Formaldehyde | 8.8E-06 | 3.9E-10 |
| Tetrachloroethene | 1.4E-06 | 4.5E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 4.6E-13 |
| Vinyl chloride | 3.2E-08 | 5.9E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.1E-10 |
| Lung Carcinogens | 4.7E-05 | 1.9E-07 |
| Skin Carcinogens | 2.1E-05 | 4.2E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Oshawa Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.1E-09 |
| Beryllium | 7.1E-07 | 1.8E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 5.4E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.7E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.1E-16 |
| Benzene | 3.1E-05 | 5.6E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 2.7E-11 |
| Dichloromethane | 3.6E-07 | 1.9E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.1E-10 |
| Formaldehyde | 8.8E-06 | 5.8E-10 |
| Tetrachloroethene | 1.4E-06 | 6.8E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 6.9E-13 |
| Vinyl chloride | 3.2E-08 | 8.8E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.8E-07 |
| Skin Carcinogens | 2.1E-05 | 6.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Port Darlington** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.0E-09 |
| Beryllium | 7.1E-07 | 1.3E-09 |
| Cadmium | 5.9E-06 | 1.1E-07 |
| Chromium (hexavalent)[a] | - | 4.0E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 1.6E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 3.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 2.7E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.1E-16 |
| Benzene | 3.1E-05 | 4.0E-10 |
| Carbon tetrachloride | 9.2E-06 | 7.8E-12 |
| Chloroform | 3.7E-06 | 1.9E-11 |
| Dichloromethane | 3.6E-07 | 1.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 4.2E-10 |
| Tetrachloroethene | 1.4E-06 | 4.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 5.0E-13 |
| Vinyl chloride | 3.2E-08 | 6.3E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 8.8E-10 |
| Lung Carcinogens | 4.7E-05 | 2.0E-07 |
| Skin Carcinogens | 2.1E-05 | 4.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Solina Rd.** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.2E-09 |
| Beryllium | 7.1E-07 | 1.9E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.7E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.8E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 5.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 3.8E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.2E-16 |
| Benzene | 3.1E-05 | 5.7E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 2.8E-11 |
| Dichloromethane | 3.6E-07 | 1.9E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.2E-10 |
| Formaldehyde | 8.8E-06 | 5.9E-10 |
| Tetrachloroethene | 1.4E-06 | 6.9E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 7.1E-13 |
| Vinyl chloride | 3.2E-08 | 9.0E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.8E-07 |
| Skin Carcinogens | 2.1E-05 | 6.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Tooley** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Project Alone Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.4E-09 |
| Beryllium | 7.1E-07 | 2.0E-09 |
| Cadmium | 5.9E-06 | 1.7E-07 |
| Chromium (hexavalent)[a] | - | 6.0E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 6.0E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 2.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 5.8E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 4.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.6E-16 |
| Benzene | 3.1E-05 | 5.9E-10 |
| Carbon tetrachloride | 9.2E-06 | 1.2E-11 |
| Chloroform | 3.7E-06 | 2.9E-11 |
| Dichloromethane | 3.6E-07 | 2.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.4E-10 |
| Formaldehyde | 8.8E-06 | 6.2E-10 |
| Tetrachloroethene | 1.4E-06 | 7.2E-11 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 7.4E-13 |
| Vinyl chloride | 3.2E-08 | 9.4E-10 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.3E-09 |
| Lung Carcinogens | 4.7E-05 | 3.0E-07 |
| Skin Carcinogens | 2.1E-05 | 6.8E-09 |

[a] Baseline Data Not Available

# APPENDIX I-4

Inhalation Results – Upset Operations (Process Upset Case) – 400,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.010 | 0.010 | - | 0.040 | 0.040 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.018 | 0.087 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.74 | 0.74 | - | 0.33 | 0.33 |
| Hydrogen Fluoride (HF)[ac] | - | 0.22 | 0.22 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.35 | 0.51 | 0.29 | 0.085 | 0.38 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.14 | 0.14 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.23 | 0.91 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.057 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.49 | 0.52 | 0.070 | 0.15 | 0.22 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0034 | 0.0048 | 1.2E-04 | 8.1E-05 | 2.0E-04 |
| Arsenic | 0.022 | 0.013 | 0.035 | 0.0060 | 0.0010 | 0.0071 |
| Barium | 0.0040 | 0.0026 | 0.0066 | 8.2E-04 | 1.6E-04 | 9.8E-04 |
| Beryllium | 0.037 | 0.10 | 0.14 | 0.030 | 0.025 | 0.055 |
| Boron[c] | 0.0037 | 0.019 | 0.023 | - | - | - |
| Cadmium | 0.015 | 0.43 | 0.44 | 0.024 | 0.21 | 0.23 |
| Chromium (hexavalent)[a] | - | 0.020 | 0.020 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.014 | 0.021 | - | - | - |
| Cobalt | 0.0074 | 0.18 | 0.19 | 0.0060 | 0.043 | 0.049 |
| Lead | 0.0081 | 0.20 | 0.21 | 0.0100 | 0.074 | 0.084 |
| Mercury - Inorganic[a] | - | 0.15 | 0.15 | - | 0.0056 | 0.0056 |
| Nickel[c] | 0.0018 | 0.089 | 0.091 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0015 | 0.0051 | 3.0E-04 | 3.6E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.21 | 0.21 | 3.4E-04 | 0.0025 | 0.0028 |
| Thallium[c] | 0.0073 | 0.24 | 0.25 | - | - | - |
| Tin | 3.7E-04 | 0.0054 | 0.0058 | 3.0E-04 | 0.0013 | 0.0016 |
| Vanadium | 0.0075 | 0.014 | 0.022 | 0.0015 | 8.6E-04 | 0.0024 |
| Zinc[c] | 0.0021 | 0.025 | 0.027 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.1E-04 | 0.0032 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.9E-05 | 8.4E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.0E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.7E-05 | 7.4E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.4E-04 | 1.0E-03 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.3E-04 | 8.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.1E-04 | 8.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0026 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.6E-05 | 5.2E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.5E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.1E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.9E-05 | 1.9E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 9.3E-05 | 4.2E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.4E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.9E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0012 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 6.2E-04 | 0.0020 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0089 | 0.014 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0044 | 0.0055 | 2.8E-04 | 3.6E-04 | 6.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.1E-07 | 1.3E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.2E-06 | 1.2E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0013 | 0.0019 | - | - | - |
| Pentachlorobenzene[ac] | - | 8.3E-07 | 8.3E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.5E-04 | 6.8E-04 | 4.4E-05 | 7.7E-06 | 5.1E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.9E-07 | 2.8E-04 | 1.1E-04 | 9.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 7.9E-10 | 0.0035 |
| Benzene | 0.17 | 0.0011 | 0.17 | 0.41 | 7.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.057 | 0.059 | - | - | - |
| Bromoform | 0.0014 | 0.0062 | 0.0077 | 5.4E-04 | 6.9E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0018 | 0.0036 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.5E-05 | 0.014 | 0.31 | 9.8E-05 | 0.31 |
| Chloroform | 0.0055 | 3.1E-05 | 0.0055 | 0.23 | 3.8E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.1E-05 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.7E-05 | 4.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.7E-05 | 3.0E-04 | 0.0058 | 5.9E-04 | 0.0063 |
| Ethylbenzene | - | - | - | 0.0012 | 7.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.6E-04 | 0.0036 | 0.0017 | 7.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.019 | 0.57 | 0.052 | 5.4E-04 | 0.053 |
| O-terphenyl[c] | 6.6E-06 | 1.0E-05 | 1.7E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.7E-06 | 6.2E-05 | 0.0014 | 1.2E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 8.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 9.7E-07 | 3.2E-05 | 1.9E-05 | 1.8E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.6E-06 | 0.0024 | 0.045 | 3.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.1E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.3E-05 | 1.4E-05 | 0.0059 | 0.032 | 0.038 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.7E-04 | 7.0E-04 | 0.0066 | 6.1E-04 | 0.0072 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.012 | 0.017 | 0.0083 | 6.6E-04 | 0.0089 |
| Nasal Irritants | 0.0079 | 0.014 | 0.022 | 0.0079 | 6.2E-04 | 0.0085 |
| Respiratory Irritants | 0.33 | 2.6 | 3.0 | 1.1 | 1.1 | 2.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0035 | 0.030 | 0.55 | 0.0017 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0057 | 0.0057 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.010 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.41 | 0.41 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.20 | 0.36 | 0.29 | 0.037 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.059 | 0.059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.098 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.27 | 0.30 | 0.070 | 0.065 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0019 | 0.0033 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0071 | 0.029 | 0.0060 | 4.5E-04 | 0.0065 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 6.8E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.056 | 0.093 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.0037 | 0.010 | 0.014 | - | - | - |
| Cadmium | 0.015 | 0.24 | 0.25 | 0.024 | 0.090 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.011 | 0.011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0076 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.098 | 0.11 | 0.0060 | 0.019 | 0.025 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.085 | 0.085 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.049 | 0.051 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.1E-04 | 0.0045 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.13 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0030 | 0.0033 | 3.0E-04 | 5.6E-04 | 8.7E-04 |
| Vanadium | 0.0075 | 0.0079 | 0.015 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.013 | 0.016 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.3E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.9E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.6E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.8E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-04 | 7.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.8E-04 | 6.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.9E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.5E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.2E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.8E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.1E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.4E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Schools**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0039 | 0.0086 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0024 | 0.0035 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.6E-07 | 6.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.0E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.6E-07 | 4.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.7E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.4E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 6.2E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.032 | 0.034 | - | - | - |
| Bromoform | 0.0014 | 0.0034 | 0.0049 | 5.4E-04 | 3.0E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 0.0010 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.3E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.9E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.1E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.3E-05 | 2.6E-04 | 0.0058 | 2.6E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.5E-04 | 0.0034 | 0.0017 | 3.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.052 | 2.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.5E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.6E-07 | 6.1E-05 | 0.0014 | 5.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.4E-07 | 3.1E-05 | 1.9E-05 | 7.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.1E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.2E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.4E-06 | 8.1E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.3E-05 | 6.3E-04 | 0.0066 | 2.7E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0066 | 0.011 | 0.0083 | 2.9E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0077 | 0.016 | 0.0079 | 2.7E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.5 | 1.8 | 1.1 | 0.48 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 7.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0063 | 0.0063 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.011 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.45 | 0.45 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.22 | 0.38 | 0.29 | 0.036 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.058 | 0.058 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.096 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.30 | 0.33 | 0.070 | 0.064 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0020 | 0.0035 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0078 | 0.030 | 0.0060 | 4.4E-04 | 0.0065 |
| Barium | 0.0040 | 0.0016 | 0.0056 | 8.2E-04 | 6.7E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.062 | 0.099 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.0037 | 0.011 | 0.015 | - | - | - |
| Cadmium | 0.015 | 0.26 | 0.27 | 0.024 | 0.088 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.012 | 0.012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0084 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.11 | 0.11 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.12 | 0.13 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.093 | 0.093 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.054 | 0.056 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.9E-04 | 0.0046 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.14 | 0.15 | - | - | - |
| Tin | 3.7E-04 | 0.0033 | 0.0036 | 3.0E-04 | 5.6E-04 | 8.6E-04 |
| Vanadium | 0.0075 | 0.0086 | 0.016 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.015 | 0.017 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.4E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.5E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.1E-04 | 8.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.1E-04 | 6.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.5E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.8E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 9.0E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.1E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.2E-05 | 1.2E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.6E-05 | 3.9E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 7.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.7E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0038 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0027 | 0.0037 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.5E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.6E-04 | 0.0014 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.0E-07 | 5.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-04 | 5.8E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.8E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 6.8E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.035 | 0.037 | - | - | - |
| Bromoform | 0.0014 | 0.0038 | 0.0052 | 5.4E-04 | 2.9E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 0.0011 | 0.0029 | - | - | - |
| Carbon tetrachloride | 0.014 | 9.1E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 1.9E-05 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.0E-05 | 3.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.7E-05 | 2.7E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.8E-04 | 0.0034 | 0.0017 | 3.1E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.012 | 0.56 | 0.052 | 2.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 6.1E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.1E-06 | 6.1E-05 | 0.0014 | 5.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.9E-07 | 3.1E-05 | 1.9E-05 | 7.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.4E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.1E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 8.1E-06 | 8.8E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-04 | 6.4E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0073 | 0.012 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0085 | 0.016 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.6 | 1.9 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0089 | 0.0089 | - | 0.035 | 0.035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.016 | 0.085 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.64 | 0.64 | - | 0.29 | 0.29 |
| Hydrogen Fluoride (HF)[ac] | - | 0.19 | 0.19 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.30 | 0.46 | 0.29 | 0.078 | 0.37 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.049 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.43 | 0.45 | 0.070 | 0.13 | 0.20 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0029 | 0.0044 | 1.2E-04 | 7.1E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.011 | 0.033 | 0.0060 | 9.0E-04 | 0.0069 |
| Barium | 0.0040 | 0.0022 | 0.0062 | 8.2E-04 | 1.4E-04 | 9.5E-04 |
| Beryllium | 0.037 | 0.088 | 0.13 | 0.030 | 0.022 | 0.052 |
| Boron[c] | 0.0037 | 0.016 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.37 | 0.39 | 0.024 | 0.18 | 0.20 |
| Chromium (hexavalent)[a] | - | 0.017 | 0.017 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.012 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.15 | 0.16 | 0.0060 | 0.037 | 0.043 |
| Lead | 0.0081 | 0.18 | 0.18 | 0.0100 | 0.065 | 0.075 |
| Mercury - Inorganic[a] | - | 0.13 | 0.13 | - | 0.0048 | 0.0048 |
| Nickel[c] | 0.0018 | 0.077 | 0.079 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0049 | 3.0E-04 | 3.1E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.18 | 0.19 | 3.4E-04 | 0.0022 | 0.0025 |
| Thallium[c] | 0.0073 | 0.21 | 0.21 | - | - | - |
| Tin | 3.7E-04 | 0.0047 | 0.0050 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.012 | 0.020 | 0.0015 | 7.5E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.021 | 0.023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.7E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.3E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.6E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.1E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.9E-04 | 9.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.4E-04 | 7.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0022 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.2E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.0E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.4E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.0E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0010 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.3E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0077 | 0.012 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0038 | 0.0049 | 2.8E-04 | 3.1E-04 | 5.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.6E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.0E-06 | 1.0E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0011 | 0.0017 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.2E-04 | 6.5E-04 | 4.4E-05 | 6.7E-06 | 5.0E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.8E-07 | 2.8E-04 | 1.1E-04 | 8.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 6.9E-10 | 0.0035 |
| Benzene | 0.17 | 9.7E-04 | 0.17 | 0.41 | 6.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.049 | 0.051 | - | - | - |
| Bromoform | 0.0014 | 0.0054 | 0.0068 | 5.4E-04 | 6.0E-04 | 0.0011 |
| Bromomethane | 0.0018 | 0.0016 | 0.0034 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.3E-05 | 0.014 | 0.31 | 8.6E-05 | 0.31 |
| Chloroform | 0.0055 | 2.7E-05 | 0.0055 | 0.23 | 3.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.2E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.4E-05 | 4.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.7E-05 | 2.9E-04 | 0.0058 | 5.2E-04 | 0.0063 |
| Ethylbenzene | - | - | - | 0.0012 | 6.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.9E-04 | 0.0036 | 0.0017 | 6.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.017 | 0.57 | 0.052 | 4.7E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 8.7E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.5E-06 | 6.1E-05 | 0.0014 | 1.0E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.2E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.4E-07 | 3.2E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.8E-06 | 0.0024 | 0.045 | 2.6E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.9E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.2E-05 | 0.0059 | 0.028 | 0.034 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.8E-04 | 0.0066 | 5.3E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.010 | 0.015 | 0.0083 | 5.8E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.012 | 0.020 | 0.0079 | 5.3E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 2.3 | 2.6 | 1.1 | 0.97 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0031 | 0.029 | 0.55 | 0.0015 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.015 | 0.015 | - | 0.049 | 0.049 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.026 | 0.095 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | **1.0** | **1.0** | - | 0.41 | 0.41 |
| Hydrogen Fluoride (HF)[ac] | - | 0.31 | 0.31 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.46 | 0.62 | 0.29 | 0.10 | 0.40 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.17 | 0.17 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.28 | 0.96 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.071 | 0.37 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.70 | 0.73 | 0.070 | 0.18 | 0.25 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0048 | 0.0062 | 1.2E-04 | 1.0E-04 | 2.2E-04 |
| Arsenic | 0.022 | 0.018 | 0.040 | 0.0060 | 0.0013 | 0.0073 |
| Barium | 0.0040 | 0.0037 | 0.0077 | 8.2E-04 | 1.9E-04 | 0.0010 |
| Beryllium | 0.037 | 0.15 | 0.18 | 0.030 | 0.030 | 0.061 |
| Boron[c] | 0.0037 | 0.027 | 0.030 | - | - | - |
| Cadmium | 0.015 | 0.61 | 0.62 | 0.024 | 0.26 | 0.28 |
| Chromium (hexavalent)[a] | - | 0.028 | 0.028 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.020 | 0.026 | - | - | - |
| Cobalt | 0.0074 | 0.25 | 0.26 | 0.0060 | 0.053 | 0.059 |
| Lead | 0.0081 | 0.29 | 0.30 | 0.0100 | 0.091 | 0.10 |
| Mercury - Inorganic[a] | - | 0.22 | 0.22 | - | 0.0068 | 0.0068 |
| Nickel[c] | 0.0018 | 0.13 | 0.13 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0021 | 0.0058 | 3.0E-04 | 4.4E-05 | 3.5E-04 |
| Silver | 0.0083 | 0.29 | 0.30 | 3.4E-04 | 0.0031 | 0.0034 |
| Thallium[c] | 0.0073 | 0.34 | 0.35 | - | - | - |
| Tin | 3.7E-04 | 0.0077 | 0.0080 | 3.0E-04 | 0.0016 | 0.0019 |
| Vanadium | 0.0075 | 0.020 | 0.028 | 0.0015 | 0.0011 | 0.0026 |
| Zinc[c] | 0.0021 | 0.035 | 0.037 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.6E-04 | 0.0032 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-04 | 8.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.1E-05 | 8.6E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.6E-05 | 3.6E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.7E-05 | 7.6E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.8E-04 | 0.0011 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.3E-04 | 9.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.2E-04 | 0.0011 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0031 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-04 | 8.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.6E-05 | 5.4E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-05 | 3.5E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.3E-04 | 0.0037 | - | - | - |
| Fluorene[ac] | - | 2.7E-05 | 2.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-04 | 4.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.7E-05 | 1.3E-04 |
| Perylene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0016 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 8.7E-04 | 0.0023 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.011 | 0.016 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0063 | 0.0073 | 2.8E-04 | 4.4E-04 | 7.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 5.8E-07 | 1.4E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-06 | 1.7E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0018 | 0.0024 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-06 | 1.2E-06 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.6E-04 | 7.9E-04 | 4.4E-05 | 9.4E-06 | 5.3E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-06 | 2.8E-04 | 1.1E-04 | 1.2E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 9.7E-10 | 0.0035 |
| Benzene | 0.17 | 0.0016 | 0.17 | 0.41 | 9.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.080 | 0.082 | - | - | - |
| Bromoform | 0.0014 | 0.0088 | 0.010 | 5.4E-04 | 8.4E-04 | 0.0014 |
| Bromomethane | 0.0018 | 0.0026 | 0.0044 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.1E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 4.4E-05 | 0.0056 | 0.23 | 4.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-05 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.3E-05 | 5.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-04 | 3.3E-04 | 0.0058 | 7.3E-04 | 0.0065 |
| Ethylbenzene | - | - | - | 0.0012 | 9.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 6.4E-04 | 0.0038 | 0.0017 | 9.0E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.028 | 0.58 | 0.052 | 6.7E-04 | 0.053 |
| O-terphenyl[c] | 6.6E-06 | 1.4E-05 | 2.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-06 | 6.2E-05 | 0.0014 | 1.4E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-05 | 6.4E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-06 | 3.2E-05 | 1.9E-05 | 2.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 7.9E-06 | 0.0024 | 0.045 | 3.7E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.6E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-05 | 2.0E-05 | 0.0059 | 0.040 | 0.046 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-04 | 7.7E-04 | 0.0066 | 7.5E-04 | 0.0074 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.017 | 0.022 | 0.0083 | 8.2E-04 | 0.0091 |
| Nasal Irritants | 0.0079 | 0.020 | 0.028 | 0.0079 | 7.5E-04 | 0.0086 |
| Respiratory Irritants | 0.33 | 3.7 | 4.0 | 1.1 | 1.4 | 2.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0050 | 0.031 | 0.55 | 0.0021 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0090 | 0.0090 | - | 0.044 | 0.044 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.016 | 0.085 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.64 | 0.64 | - | 0.37 | 0.37 |
| Hydrogen Fluoride (HF)[ac] | - | 0.19 | 0.19 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.31 | 0.48 | 0.29 | 0.097 | 0.39 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.15 | 0.15 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.25 | 0.93 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.062 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.43 | 0.46 | 0.070 | 0.17 | 0.24 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0029 | 0.0044 | 1.2E-04 | 9.0E-05 | 2.1E-04 |
| Arsenic | 0.022 | 0.011 | 0.033 | 0.0060 | 0.0012 | 0.0072 |
| Barium | 0.0040 | 0.0023 | 0.0062 | 8.2E-04 | 1.7E-04 | 9.9E-04 |
| Beryllium | 0.037 | 0.089 | 0.13 | 0.030 | 0.027 | 0.058 |
| Boron[c] | 0.0037 | 0.016 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.37 | 0.39 | 0.024 | 0.23 | 0.25 |
| Chromium (hexavalent)[a] | - | 0.017 | 0.017 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.012 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.15 | 0.16 | 0.0060 | 0.048 | 0.054 |
| Lead | 0.0081 | 0.18 | 0.19 | 0.0100 | 0.082 | 0.092 |
| Mercury - Inorganic[a] | - | 0.13 | 0.13 | - | 0.0062 | 0.0062 |
| Nickel[c] | 0.0018 | 0.078 | 0.079 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0050 | 3.0E-04 | 4.0E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.18 | 0.19 | 3.4E-04 | 0.0028 | 0.0031 |
| Thallium[c] | 0.0073 | 0.21 | 0.22 | - | - | - |
| Tin | 3.7E-04 | 0.0047 | 0.0051 | 3.0E-04 | 0.0014 | 0.0017 |
| Vanadium | 0.0075 | 0.012 | 0.020 | 0.0015 | 9.6E-04 | 0.0025 |
| Zinc[c] | 0.0021 | 0.021 | 0.023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.7E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.3E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.6E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.1E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.0E-04 | 9.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.4E-04 | 7.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0028 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.3E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.0E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.4E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.1E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.5E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0010 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.4E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0099 | 0.015 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0039 | 0.0049 | 2.8E-04 | 4.0E-04 | 6.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.6E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.0E-06 | 1.0E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0011 | 0.0017 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.2E-04 | 6.5E-04 | 4.4E-05 | 8.5E-06 | 5.2E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.9E-07 | 2.8E-04 | 1.1E-04 | 1.1E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 8.8E-10 | 0.0035 |
| Benzene | 0.17 | 9.7E-04 | 0.17 | 0.41 | 8.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.050 | 0.052 | - | - | - |
| Bromoform | 0.0014 | 0.0054 | 0.0069 | 5.4E-04 | 7.6E-04 | 0.0013 |
| Bromomethane | 0.0018 | 0.0016 | 0.0034 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.3E-05 | 0.014 | 0.31 | 1.1E-04 | 0.31 |
| Chloroform | 0.0055 | 2.7E-05 | 0.0055 | 0.23 | 4.2E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.3E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.4E-05 | 4.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.7E-05 | 2.9E-04 | 0.0058 | 6.6E-04 | 0.0064 |
| Ethylbenzene | - | - | - | 0.0012 | 8.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.0E-04 | 0.0036 | 0.0017 | 8.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.017 | 0.57 | 0.052 | 6.0E-04 | 0.053 |
| O-terphenyl[c] | 6.6E-06 | 8.7E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.5E-06 | 6.1E-05 | 0.0014 | 1.3E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.3E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.5E-07 | 3.2E-05 | 1.9E-05 | 2.0E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.9E-06 | 0.0024 | 0.045 | 3.4E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.4E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.2E-05 | 0.0059 | 0.036 | 0.042 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.8E-04 | 0.0066 | 6.8E-04 | 0.0073 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.010 | 0.015 | 0.0083 | 7.4E-04 | 0.0090 |
| Nasal Irritants | 0.0079 | 0.012 | 0.020 | 0.0079 | 6.8E-04 | 0.0085 |
| Respiratory Irritants | 0.33 | 2.3 | 2.6 | 1.1 | 1.2 | 2.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0031 | 0.029 | 0.55 | 0.0019 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0025 | 0.0025 | - | 0.014 | 0.014 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.080 | 0.24 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.081 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.052 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 2.9E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 3.6E-04 | 0.0064 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 5.5E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0087 | 0.039 |
| Boron[c] | 0.0037 | 0.0045 | 0.0082 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.073 | 0.097 |
| Chromium (hexavalent)[a] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.015 | 0.021 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.026 | 0.036 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 1.2E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 8.7E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.057 | 0.065 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.6E-04 | 7.6E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 3.0E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0059 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 8.9E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 4.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0031 | 0.0079 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 2.7E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 3.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.8E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 2.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.4E-04 | 7.8E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.6E-06 | 0.014 | 0.31 | 3.4E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.1E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 2.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.6E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.052 | 1.9E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.2E-07 | 6.0E-05 | 0.0014 | 4.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 6.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.5E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0029 | 0.0077 | 0.0083 | 2.3E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.63 | 0.96 | 1.1 | 0.39 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.5E-04 | 0.027 | 0.55 | 6.0E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0025 | 0.0025 | - | 0.014 | 0.014 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.082 | 0.24 | 0.29 | 0.031 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.082 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.021 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.053 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 2.9E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 3.7E-04 | 0.0064 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 5.6E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0088 | 0.039 |
| Boron[c] | 0.0037 | 0.0045 | 0.0082 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.074 | 0.098 |
| Chromium (hexavalent)[a] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.015 | 0.021 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.026 | 0.036 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 1.3E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 8.8E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.057 | 0.065 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.6E-04 | 7.7E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 3.1E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0059 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.1E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0032 | 0.0079 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 2.7E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 3.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.8E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 2.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.4E-04 | 7.8E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.6E-06 | 0.014 | 0.31 | 3.5E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.1E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 2.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.6E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.052 | 1.9E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.2E-07 | 6.0E-05 | 0.0014 | 4.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 6.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.6E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0029 | 0.0077 | 0.0083 | 2.4E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.63 | 0.96 | 1.1 | 0.40 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-04 | 0.027 | 0.55 | 6.1E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0029 | 0.0029 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0052 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.21 | 0.21 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.062 | 0.062 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.098 | 0.26 | 0.29 | 0.036 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.058 | 0.058 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.096 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.14 | 0.17 | 0.070 | 0.064 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.5E-04 | 0.0024 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0036 | 0.026 | 0.0060 | 4.4E-04 | 0.0065 |
| Barium | 0.0040 | 7.3E-04 | 0.0047 | 8.2E-04 | 6.7E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.029 | 0.066 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.0037 | 0.0053 | 0.0090 | - | - | - |
| Cadmium | 0.015 | 0.12 | 0.14 | 0.024 | 0.088 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.0055 | 0.0055 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0039 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.050 | 0.057 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.058 | 0.066 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.043 | 0.043 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.025 | 0.027 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.2E-04 | 0.0041 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.058 | 0.066 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.067 | 0.075 | - | - | - |
| Tin | 3.7E-04 | 0.0015 | 0.0019 | 3.0E-04 | 5.6E-04 | 8.6E-04 |
| Vanadium | 0.0075 | 0.0040 | 0.012 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0069 | 0.0090 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.5E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.4E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.2E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.3E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 9.6E-05 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.5E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.4E-04 | 4.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.0E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.3E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.4E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.4E-06 | 5.4E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.6E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.2E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.7E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0038 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0012 | 0.0023 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-07 | 9.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.4E-07 | 3.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.6E-04 | 9.6E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.3E-07 | 2.3E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.1E-05 | 5.0E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.2E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 3.2E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.016 | 0.018 | - | - | - |
| Bromoform | 0.0014 | 0.0018 | 0.0032 | 5.4E-04 | 2.9E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 5.2E-04 | 0.0023 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.2E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 8.8E-06 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.0E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.7E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.2E-05 | 2.4E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.3E-04 | 0.0033 | 0.0017 | 3.1E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0055 | 0.55 | 0.052 | 2.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.8E-06 | 9.4E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.9E-07 | 6.0E-05 | 0.0014 | 5.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.7E-07 | 3.1E-05 | 1.9E-05 | 7.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.1E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.8E-06 | 4.5E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.7E-05 | 5.8E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0034 | 0.0082 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0039 | 0.012 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.74 | 1.1 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.0E-03 | 0.027 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0055 | 0.0055 | - | 0.018 | 0.018 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0097 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.39 | 0.39 | - | 0.15 | 0.15 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.18 | 0.34 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.062 | 0.062 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.10 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.026 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.26 | 0.29 | 0.070 | 0.068 | 0.14 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0018 | 0.0032 | 1.2E-04 | 3.7E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0068 | 0.029 | 0.0060 | 4.7E-04 | 0.0065 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 7.1E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.054 | 0.091 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.0037 | 0.0099 | 0.014 | - | - | - |
| Cadmium | 0.015 | 0.23 | 0.24 | 0.024 | 0.094 | 0.12 |
| Chromium (hexavalent)[a] | - | 0.010 | 0.010 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0073 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.094 | 0.10 | 0.0060 | 0.019 | 0.026 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.034 | 0.044 |
| Mercury - Inorganic[a] | - | 0.081 | 0.081 | - | 0.0025 | 0.0025 |
| Nickel[c] | 0.0018 | 0.047 | 0.049 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.8E-04 | 0.0045 | 3.0E-04 | 1.6E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0011 | 0.0015 |
| Thallium[c] | 0.0073 | 0.13 | 0.13 | - | - | - |
| Tin | 3.7E-04 | 0.0029 | 0.0032 | 3.0E-04 | 5.9E-04 | 8.9E-04 |
| Vanadium | 0.0075 | 0.0075 | 0.015 | 0.0015 | 3.9E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.0E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.7E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.6E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.7E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.5E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.5E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.8E-04 | 8.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.7E-04 | 6.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0012 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.6E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.4E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.8E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.7E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.0E-05 | 1.0E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.9E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.3E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 9.8E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.1E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.3E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0040 | 0.0088 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0023 | 0.0034 | 2.8E-04 | 1.6E-04 | 4.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.2E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.3E-07 | 6.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.7E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.4E-07 | 4.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-04 | 5.6E-04 | 4.4E-05 | 3.5E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.2E-07 | 2.8E-04 | 1.1E-04 | 4.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.6E-10 | 0.0035 |
| Benzene | 0.17 | 5.9E-04 | 0.17 | 0.41 | 3.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.030 | 0.032 | - | - | - |
| Bromoform | 0.0014 | 0.0033 | 0.0047 | 5.4E-04 | 3.1E-04 | 8.5E-04 |
| Bromomethane | 0.0018 | 9.7E-04 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 7.9E-06 | 0.014 | 0.31 | 4.4E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 1.7E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.7E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.1E-05 | 2.6E-04 | 0.0058 | 2.7E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.4E-04 | 0.0034 | 0.0017 | 3.3E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.010 | 0.56 | 0.052 | 2.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.3E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.2E-07 | 6.1E-05 | 0.0014 | 5.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.1E-07 | 3.1E-05 | 1.9E-05 | 8.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.9E-06 | 0.0024 | 0.045 | 1.4E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.7E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.1E-06 | 7.8E-06 | 0.0059 | 0.015 | 0.021 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.9E-05 | 6.2E-04 | 0.0066 | 2.8E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0063 | 0.011 | 0.0083 | 3.0E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0074 | 0.015 | 0.0079 | 2.8E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.4 | 1.7 | 1.1 | 0.51 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 7.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0083 | 0.0083 | - | 0.047 | 0.047 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.015 | 0.084 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.59 | 0.59 | - | 0.39 | 0.39 |
| Hydrogen Fluoride (HF)[ac] | - | 0.18 | 0.18 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.28 | 0.44 | 0.29 | 0.10 | 0.39 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.16 | 0.16 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.27 | 0.95 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.066 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.40 | 0.42 | 0.070 | 0.18 | 0.25 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0027 | 0.0042 | 1.2E-04 | 9.6E-05 | 2.2E-04 |
| Arsenic | 0.022 | 0.010 | 0.032 | 0.0060 | 0.0012 | 0.0073 |
| Barium | 0.0040 | 0.0021 | 0.0061 | 8.2E-04 | 1.9E-04 | 0.0010 |
| Beryllium | 0.037 | 0.082 | 0.12 | 0.030 | 0.029 | 0.059 |
| Boron[c] | 0.0037 | 0.015 | 0.019 | - | - | - |
| Cadmium | 0.015 | 0.35 | 0.36 | 0.024 | 0.25 | 0.27 |
| Chromium (hexavalent)[a] | - | 0.016 | 0.016 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.011 | 0.018 | - | - | - |
| Cobalt | 0.0074 | 0.14 | 0.15 | 0.0060 | 0.051 | 0.057 |
| Lead | 0.0081 | 0.16 | 0.17 | 0.0100 | 0.088 | 0.098 |
| Mercury - Inorganic[a] | - | 0.12 | 0.12 | - | 0.0066 | 0.0066 |
| Nickel[c] | 0.0018 | 0.072 | 0.073 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0012 | 0.0049 | 3.0E-04 | 4.2E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.17 | 0.17 | 3.4E-04 | 0.0029 | 0.0033 |
| Thallium[c] | 0.0073 | 0.19 | 0.20 | - | - | - |
| Tin | 3.7E-04 | 0.0043 | 0.0047 | 3.0E-04 | 0.0015 | 0.0018 |
| Vanadium | 0.0075 | 0.011 | 0.019 | 0.0015 | 0.0010 | 0.0026 |
| Zinc[c] | 0.0021 | 0.020 | 0.022 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.1E-05 | 8.2E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.0E-05 | 8.3E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.5E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.8E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.7E-04 | 9.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.1E-04 | 7.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0030 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 8.6E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.7E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.1E-04 | 0.0033 | - | - | - |
| Fluorene[ac] | - | 1.5E-05 | 1.5E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 7.4E-05 | 4.0E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.6E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.5E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 9.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.9E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.011 | 0.015 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0036 | 0.0046 | 2.8E-04 | 4.2E-04 | 7.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.3E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 9.6E-07 | 9.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0010 | 0.0016 | - | - | - |
| Pentachlorobenzene[ac] | - | 6.7E-07 | 6.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.0E-04 | 6.3E-04 | 4.4E-05 | 9.0E-06 | 5.3E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.3E-07 | 2.8E-04 | 1.1E-04 | 1.1E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 9.3E-10 | 0.0035 |
| Benzene | 0.17 | 9.0E-04 | 0.17 | 0.41 | 9.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.046 | 0.048 | - | - | - |
| Bromoform | 0.0014 | 0.0050 | 0.0064 | 5.4E-04 | 8.1E-04 | 0.0013 |
| Bromomethane | 0.0018 | 0.0015 | 0.0033 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 2.5E-05 | 0.0055 | 0.23 | 4.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 8.6E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.3E-05 | 4.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.2E-05 | 2.8E-04 | 0.0058 | 7.0E-04 | 0.0065 |
| Ethylbenzene | - | - | - | 0.0012 | 9.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-04 | 0.0035 | 0.0017 | 8.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.016 | 0.56 | 0.052 | 6.4E-04 | 0.053 |
| O-terphenyl[c] | 6.6E-06 | 8.1E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.4E-06 | 6.1E-05 | 0.0014 | 1.4E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 6.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 7.8E-07 | 3.2E-05 | 1.9E-05 | 2.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.5E-06 | 0.0024 | 0.045 | 3.6E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.5E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.1E-05 | 1.1E-05 | 0.0059 | 0.038 | 0.044 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.4E-04 | 6.7E-04 | 0.0066 | 7.2E-04 | 0.0073 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0096 | 0.014 | 0.0083 | 7.8E-04 | 0.0090 |
| Nasal Irritants | 0.0079 | 0.011 | 0.019 | 0.0079 | 7.3E-04 | 0.0086 |
| Respiratory Irritants | 0.33 | 2.1 | 2.5 | 1.1 | 1.3 | 2.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0028 | 0.029 | 0.55 | 0.0020 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0026 | 0.0026 | - | 0.013 | 0.013 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0046 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.11 | 0.11 |
| Hydrogen Fluoride (HF)[ac] | - | 0.055 | 0.055 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.029 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.047 | 0.047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.078 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.049 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.3E-04 | 0.0023 | 1.2E-04 | 2.7E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0032 | 0.025 | 0.0060 | 3.4E-04 | 0.0064 |
| Barium | 0.0040 | 6.4E-04 | 0.0046 | 8.2E-04 | 5.2E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.025 | 0.062 | 0.030 | 0.0082 | 0.038 |
| Boron[c] | 0.0037 | 0.0047 | 0.0084 | - | - | - |
| Cadmium | 0.015 | 0.11 | 0.12 | 0.024 | 0.069 | 0.093 |
| Chromium (hexavalent)[a] | - | 0.0049 | 0.0049 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0034 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.044 | 0.051 | 0.0060 | 0.014 | 0.020 |
| Lead | 0.0081 | 0.051 | 0.059 | 0.0100 | 0.025 | 0.035 |
| Mercury - Inorganic[a] | - | 0.038 | 0.038 | - | 0.0018 | 0.0018 |
| Nickel[c] | 0.0018 | 0.022 | 0.024 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.7E-04 | 0.0040 | 3.0E-04 | 1.2E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.051 | 0.059 | 3.4E-04 | 8.2E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.059 | 0.067 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.3E-04 | 7.3E-04 |
| Vanadium | 0.0075 | 0.0035 | 0.011 | 0.0015 | 2.9E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0061 | 0.0081 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.8E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.2E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.2E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.1E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.4E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.8E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.3E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 8.5E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.7E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.7E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.3E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 4.8E-06 | 4.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.3E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 4.6E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0029 | 0.0077 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.2E-04 | 4.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.0E-07 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.0E-07 | 3.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.1E-04 | 9.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.1E-07 | 2.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.3E-05 | 4.9E-04 | 4.4E-05 | 2.5E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.0E-07 | 2.8E-04 | 1.1E-04 | 3.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 2.6E-10 | 0.0035 |
| Benzene | 0.17 | 2.8E-04 | 0.17 | 0.41 | 2.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0030 | 5.4E-04 | 2.3E-04 | 7.6E-04 |
| Bromomethane | 0.0018 | 4.6E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.7E-06 | 0.014 | 0.31 | 3.2E-05 | 0.31 |
| Chloroform | 0.0055 | 7.8E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.1E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.9E-05 | 2.4E-04 | 0.0058 | 2.0E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 2.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0048 | 0.55 | 0.052 | 1.8E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.5E-06 | 9.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.3E-07 | 6.0E-05 | 0.0014 | 3.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.1E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.4E-07 | 3.1E-05 | 1.9E-05 | 5.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.4E-06 | 0.0024 | 0.045 | 1.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.3E-06 | 4.0E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.2E-05 | 5.8E-04 | 0.0066 | 2.0E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0030 | 0.0078 | 0.0083 | 2.2E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0035 | 0.011 | 0.0079 | 2.0E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.66 | 0.99 | 1.1 | 0.37 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.8E-04 | 0.027 | 0.55 | 5.7E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0042 | 0.0042 | - | 0.029 | 0.029 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0075 | 0.076 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.30 | 0.30 | - | 0.24 | 0.24 |
| Hydrogen Fluoride (HF)[ac] | - | 0.089 | 0.089 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.15 | 0.31 | 0.29 | 0.059 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.098 | 0.098 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.16 | 0.84 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.041 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.20 | 0.23 | 0.070 | 0.11 | 0.18 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0014 | 0.0028 | 1.2E-04 | 5.8E-05 | 1.8E-04 |
| Arsenic | 0.022 | 0.0052 | 0.027 | 0.0060 | 7.4E-04 | 0.0068 |
| Barium | 0.0040 | 0.0011 | 0.0050 | 8.2E-04 | 1.1E-04 | 9.3E-04 |
| Beryllium | 0.037 | 0.041 | 0.078 | 0.030 | 0.018 | 0.048 |
| Boron[c] | 0.0037 | 0.0076 | 0.011 | - | - | - |
| Cadmium | 0.015 | 0.17 | 0.19 | 0.024 | 0.15 | 0.17 |
| Chromium (hexavalent)[a] | - | 0.0079 | 0.0079 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0056 | 0.012 | - | - | - |
| Cobalt | 0.0074 | 0.072 | 0.079 | 0.0060 | 0.031 | 0.037 |
| Lead | 0.0081 | 0.083 | 0.091 | 0.0100 | 0.053 | 0.063 |
| Mercury - Inorganic[a] | - | 0.062 | 0.062 | - | 0.0040 | 0.0040 |
| Nickel[c] | 0.0018 | 0.036 | 0.038 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.0E-04 | 0.0043 | 3.0E-04 | 2.5E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.083 | 0.092 | 3.4E-04 | 0.0018 | 0.0021 |
| Thallium[c] | 0.0073 | 0.097 | 0.10 | - | - | - |
| Tin | 3.7E-04 | 0.0022 | 0.0026 | 3.0E-04 | 9.3E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0058 | 0.013 | 0.0015 | 6.2E-04 | 0.0022 |
| Zinc[c] | 0.0021 | 0.0099 | 0.012 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.6E-05 | 7.9E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.0E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.5E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.9E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.4E-05 | 7.5E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.1E-04 | 5.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0018 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.9E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.0E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.1E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 7.8E-06 | 7.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.7E-05 | 3.7E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.9E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 7.5E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 4.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.5E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0064 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0018 | 0.0028 | 2.8E-04 | 2.5E-04 | 5.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.7E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.8E-07 | 4.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.1E-04 | 0.0011 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.4E-07 | 3.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.0E-04 | 5.3E-04 | 4.4E-05 | 5.5E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.2E-07 | 2.8E-04 | 1.1E-04 | 6.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 5.6E-10 | 0.0035 |
| Benzene | 0.17 | 4.5E-04 | 0.17 | 0.41 | 5.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.023 | 0.025 | - | - | - |
| Bromoform | 0.0014 | 0.0025 | 0.0040 | 5.4E-04 | 4.9E-04 | 0.0010 |
| Bromomethane | 0.0018 | 7.5E-04 | 0.0025 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.1E-06 | 0.014 | 0.31 | 7.0E-05 | 0.31 |
| Chloroform | 0.0055 | 1.3E-05 | 0.0055 | 0.23 | 2.7E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 6.7E-06 | 3.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.1E-05 | 2.5E-04 | 0.0058 | 4.2E-04 | 0.0062 |
| Ethylbenzene | - | - | - | 0.0012 | 5.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-04 | 0.0034 | 0.0017 | 5.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0079 | 0.56 | 0.052 | 3.9E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 4.1E-06 | 1.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.0E-07 | 6.1E-05 | 0.0014 | 8.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.9E-07 | 3.1E-05 | 1.9E-05 | 1.3E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.3E-06 | 0.0024 | 0.045 | 2.2E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.5E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 5.4E-06 | 6.1E-06 | 0.0059 | 0.023 | 0.029 |
| Xylenes, m-, p- and o- | 5.3E-04 | 6.8E-05 | 6.0E-04 | 0.0066 | 4.4E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0049 | 0.0097 | 0.0083 | 4.7E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0057 | 0.014 | 0.0079 | 4.4E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.1 | 1.4 | 1.1 | 0.79 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0014 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0024 | 0.0024 | - | 0.016 | 0.016 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0043 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.17 | 0.17 | - | 0.13 | 0.13 |
| Hydrogen Fluoride (HF)[ac] | - | 0.051 | 0.051 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.084 | 0.25 | 0.29 | 0.034 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.054 | 0.054 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.090 | 0.77 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.023 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.11 | 0.14 | 0.070 | 0.059 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 7.8E-04 | 0.0023 | 1.2E-04 | 3.2E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0030 | 0.025 | 0.0060 | 4.1E-04 | 0.0064 |
| Barium | 0.0040 | 6.0E-04 | 0.0046 | 8.2E-04 | 6.2E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0098 | 0.040 |
| Boron[c] | 0.0037 | 0.0044 | 0.0081 | - | - | - |
| Cadmium | 0.015 | 0.100 | 0.11 | 0.024 | 0.083 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.0046 | 0.0046 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0032 | 0.0099 | - | - | - |
| Cobalt | 0.0074 | 0.041 | 0.049 | 0.0060 | 0.017 | 0.023 |
| Lead | 0.0081 | 0.048 | 0.056 | 0.0100 | 0.029 | 0.039 |
| Mercury - Inorganic[a] | - | 0.036 | 0.036 | - | 0.0022 | 0.0022 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.4E-04 | 0.0040 | 3.0E-04 | 1.4E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.048 | 0.056 | 3.4E-04 | 9.9E-04 | 0.0013 |
| Thallium[c] | 0.0073 | 0.056 | 0.063 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0016 | 3.0E-04 | 5.2E-04 | 8.2E-04 |
| Vanadium | 0.0075 | 0.0033 | 0.011 | 0.0015 | 3.4E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0057 | 0.0078 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.3E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 7.9E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.4E-05 | 7.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0010 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.5E-06 | 4.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.1E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.3E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.4E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0035 | 0.0083 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0010 | 0.0021 | 2.8E-04 | 1.4E-04 | 4.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.6E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.9E-04 | 9.0E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.9E-07 | 1.9E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 5.9E-05 | 4.9E-04 | 4.4E-05 | 3.0E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.8E-07 | 2.8E-04 | 1.1E-04 | 3.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 3.1E-10 | 0.0035 |
| Benzene | 0.17 | 2.6E-04 | 0.17 | 0.41 | 3.1E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.7E-04 | 8.1E-04 |
| Bromomethane | 0.0018 | 4.3E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.5E-06 | 0.014 | 0.31 | 3.9E-05 | 0.31 |
| Chloroform | 0.0055 | 7.3E-06 | 0.0055 | 0.23 | 1.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.8E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.4E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.9E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0045 | 0.55 | 0.052 | 2.2E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 2.3E-06 | 8.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.0E-07 | 6.0E-05 | 0.0014 | 4.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.9E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 7.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.2E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 8.5E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.1E-06 | 3.8E-06 | 0.0059 | 0.013 | 0.019 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.9E-05 | 5.7E-04 | 0.0066 | 2.4E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0028 | 0.0076 | 0.0083 | 2.6E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0032 | 0.011 | 0.0079 | 2.4E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.62 | 0.94 | 1.1 | 0.44 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.2E-04 | 0.027 | 0.55 | 6.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0055 | 0.0055 | - | 0.024 | 0.024 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0098 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.39 | 0.39 | - | 0.20 | 0.20 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.19 | 0.35 | 0.29 | 0.052 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.093 | 0.093 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.15 | 0.84 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.039 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.26 | 0.29 | 0.070 | 0.090 | 0.16 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0018 | 0.0033 | 1.2E-04 | 4.9E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0069 | 0.029 | 0.0060 | 6.3E-04 | 0.0067 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 9.5E-05 | 9.1E-04 |
| Beryllium | 0.037 | 0.055 | 0.091 | 0.030 | 0.015 | 0.045 |
| Boron[c] | 0.0037 | 0.010 | 0.014 | - | - | - |
| Cadmium | 0.015 | 0.23 | 0.24 | 0.024 | 0.13 | 0.15 |
| Chromium (hexavalent)[a] | - | 0.010 | 0.010 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0074 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.095 | 0.10 | 0.0060 | 0.026 | 0.032 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.045 | 0.055 |
| Mercury - Inorganic[a] | - | 0.082 | 0.082 | - | 0.0034 | 0.0034 |
| Nickel[c] | 0.0018 | 0.048 | 0.049 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.9E-04 | 0.0045 | 3.0E-04 | 2.1E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0015 | 0.0018 |
| Thallium[c] | 0.0073 | 0.13 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0029 | 0.0033 | 3.0E-04 | 7.9E-04 | 0.0011 |
| Vanadium | 0.0075 | 0.0076 | 0.015 | 0.0015 | 5.2E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.1E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.8E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.7E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.8E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.5E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.6E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.8E-04 | 8.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.7E-04 | 6.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0015 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.7E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.5E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.9E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.7E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.0E-05 | 1.0E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.9E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 8.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 9.9E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.3E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0054 | 0.010 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0024 | 0.0034 | 2.8E-04 | 2.2E-04 | 5.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.2E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.4E-07 | 6.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.8E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.4E-07 | 4.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.6E-04 | 4.4E-05 | 4.6E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.2E-07 | 2.8E-04 | 1.1E-04 | 5.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 4.8E-10 | 0.0035 |
| Benzene | 0.17 | 6.0E-04 | 0.17 | 0.41 | 4.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.031 | 0.033 | - | - | - |
| Bromoform | 0.0014 | 0.0033 | 0.0048 | 5.4E-04 | 4.1E-04 | 9.5E-04 |
| Bromomethane | 0.0018 | 9.8E-04 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.0E-06 | 0.014 | 0.31 | 5.9E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 2.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.7E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.8E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.1E-05 | 2.6E-04 | 0.0058 | 3.6E-04 | 0.0061 |
| Ethylbenzene | - | - | - | 0.0012 | 4.6E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.4E-04 | 0.0034 | 0.0017 | 4.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.010 | 0.56 | 0.052 | 3.3E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 5.4E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.3E-07 | 6.1E-05 | 0.0014 | 7.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.2E-07 | 3.1E-05 | 1.9E-05 | 1.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.0E-06 | 0.0024 | 0.045 | 1.8E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.3E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.1E-06 | 7.9E-06 | 0.0059 | 0.020 | 0.025 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.0E-05 | 6.2E-04 | 0.0066 | 3.7E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0064 | 0.011 | 0.0083 | 4.0E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0075 | 0.015 | 0.0079 | 3.7E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 1.4 | 1.7 | 1.1 | 0.69 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 0.0010 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0069 | 0.0069 | - | 0.033 | 0.033 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.012 | 0.081 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.49 | 0.49 | - | 0.28 | 0.28 |
| Hydrogen Fluoride (HF)[ac] | - | 0.15 | 0.15 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.24 | 0.40 | 0.29 | 0.072 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.054 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.33 | 0.36 | 0.070 | 0.12 | 0.19 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0022 | 0.0037 | 1.2E-04 | 6.8E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.0086 | 0.031 | 0.0060 | 8.7E-04 | 0.0069 |
| Barium | 0.0040 | 0.0017 | 0.0057 | 8.2E-04 | 1.3E-04 | 9.5E-04 |
| Beryllium | 0.037 | 0.068 | 0.11 | 0.030 | 0.021 | 0.051 |
| Boron[c] | 0.0037 | 0.013 | 0.016 | - | - | - |
| Cadmium | 0.015 | 0.29 | 0.30 | 0.024 | 0.17 | 0.20 |
| Chromium (hexavalent)[a] | - | 0.013 | 0.013 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0092 | 0.016 | - | - | - |
| Cobalt | 0.0074 | 0.12 | 0.13 | 0.0060 | 0.036 | 0.042 |
| Lead | 0.0081 | 0.14 | 0.14 | 0.0100 | 0.062 | 0.072 |
| Mercury - Inorganic[a] | - | 0.10 | 0.10 | - | 0.0046 | 0.0046 |
| Nickel[c] | 0.0018 | 0.060 | 0.061 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 9.8E-04 | 0.0047 | 3.0E-04 | 3.0E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.14 | 0.15 | 3.4E-04 | 0.0021 | 0.0024 |
| Thallium[c] | 0.0073 | 0.16 | 0.17 | - | - | - |
| Tin | 3.7E-04 | 0.0036 | 0.0040 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.0095 | 0.017 | 0.0015 | 7.2E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.016 | 0.018 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 7.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.9E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.3E-05 | 8.3E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.1E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 8.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.3E-04 | 8.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.6E-04 | 8.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.4E-04 | 6.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0021 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 7.1E-05 | 7.3E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.1E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 9.9E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.4E-04 | 0.0033 | - | - | - |
| Fluorene[ac] | - | 1.3E-05 | 1.3E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 6.2E-05 | 3.9E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 7.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.1E-04 | 0.0018 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0074 | 0.012 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0030 | 0.0040 | 2.8E-04 | 3.0E-04 | 5.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.8E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 8.0E-07 | 8.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 8.5E-04 | 0.0015 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.5E-07 | 5.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.7E-04 | 6.0E-04 | 4.4E-05 | 6.4E-06 | 5.0E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 5.3E-07 | 2.8E-04 | 1.1E-04 | 8.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde[b] | - | - | - | 0.0035 | 6.6E-10 | 0.0035 |
| Benzene | 0.17 | 7.5E-04 | 0.17 | 0.41 | 6.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.038 | 0.040 | - | - | - |
| Bromoform | 0.0014 | 0.0042 | 0.0056 | 5.4E-04 | 5.7E-04 | 0.0011 |
| Bromomethane | 0.0018 | 0.0012 | 0.0030 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-05 | 0.014 | 0.31 | 8.2E-05 | 0.31 |
| Chloroform | 0.0055 | 2.1E-05 | 0.0055 | 0.23 | 3.2E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 7.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.1E-05 | 4.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 5.2E-05 | 2.7E-04 | 0.0058 | 4.9E-04 | 0.0062 |
| Ethylbenzene | - | - | - | 0.0012 | 6.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-04 | 0.0035 | 0.0017 | 6.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.013 | 0.56 | 0.052 | 4.5E-04 | 0.052 |
| O-terphenyl[c] | 6.6E-06 | 6.7E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.2E-06 | 6.1E-05 | 0.0014 | 9.7E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 6.5E-07 | 3.1E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.7E-06 | 0.0024 | 0.045 | 2.5E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.8E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 8.9E-06 | 9.7E-06 | 0.0059 | 0.027 | 0.033 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.1E-04 | 6.5E-04 | 0.0066 | 5.1E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0080 | 0.013 | 0.0083 | 5.5E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.0093 | 0.017 | 0.0079 | 5.1E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 1.8 | 2.1 | 1.1 | 0.96 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0024 | 0.029 | 0.55 | 0.0014 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.5E-04 | 2.5E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0021 | 0.0021 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0067 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 8.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0068 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 6.4E-05 | 0.015 |
| Arsenic | 0.12 | 1.3E-04 | 0.12 |
| Barium | 0.0049 | 9.9E-06 | 0.0050 |
| Beryllium | 0.043 | 2.2E-04 | 0.043 |
| Boron | 0.0031 | 1.4E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0066 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.5E-05 | 1.5E-05 |
| Cobalt | 0.0060 | 2.7E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.7E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.3E-04 | 2.3E-04 |
| Nickel | 0.045 | 0.0082 | 0.053 |
| Phosphorus | 7.3E-10 | 3.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.1E-05 | 0.015 |
| Silver | 0.034 | 0.0016 | 0.036 |
| Thallium | 0.029 | 0.0018 | 0.031 |
| Tin | 0.0015 | 4.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.4E-06 | 7.8E-04 |
| Zinc | 0.0051 | 1.9E-04 | 0.0053 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 7.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 5.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.8E-07 | 2.8E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 3.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.6E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.3E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 5.3E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 3.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.8E-08 | 1.8E-08 |
| Pentachlorobenzene[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorophenol | 8.2E-04 | 3.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 5.0E-07 | 5.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.5E-08 | 3.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.3E-10 | 0.12 |
| Benzene | 0.13 | 9.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.2E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 8.4E-04 | 0.0062 |
| Bromoform | 0.0046 | 9.2E-05 | 0.0047 |
| Bromomethane | 0.020 | 6.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.5E-08 | 0.0032 |
| Chloroform | 0.0016 | 4.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.6E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.6E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 4.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 9.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.0E-07 | 2.1E-04 |
| Formaldehyde | 0.18 | 4.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.5E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.4E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 9.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.6E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 8.2E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.9E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.025 | 0.97 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.7E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0033 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 8.9E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.6E-09 | 8.6E-09 |
| Pentachlorobenzene[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.4E-07 | 2.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.0E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0033 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 8.9E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.6E-09 | 8.6E-09 |
| Pentachlorobenzene[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.4E-07 | 2.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.0E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.2E-04 | 2.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0059 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 7.9E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0060 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.7E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 8.7E-06 | 0.0050 |
| Beryllium | 0.043 | 2.0E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0058 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.3E-05 | 1.3E-05 |
| Cobalt | 0.0060 | 2.4E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.1E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.1E-04 | 2.1E-04 |
| Nickel | 0.045 | 0.0072 | 0.052 |
| Phosphorus | 7.3E-10 | 3.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 9.9E-06 | 0.015 |
| Silver | 0.034 | 0.0014 | 0.036 |
| Thallium | 0.029 | 0.0016 | 0.031 |
| Tin | 0.0015 | 3.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 4.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.6E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.0E-06 | 0.0023 |
| Fluorene[a] | - | 2.5E-07 | 2.5E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.6E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.4E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.1E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.6E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.7E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.4E-07 | 4.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.1E-08 | 3.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 8.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.7E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.4E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.3E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 7.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.5E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.022 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 6.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.1E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.8E-04 | 1.8E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0048 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0048 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.6E-05 | 0.015 |
| Arsenic | 0.12 | 9.3E-05 | 0.12 |
| Barium | 0.0049 | 7.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.0E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0047 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.3E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0058 | 0.051 |
| Phosphorus | 7.3E-10 | 2.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 8.0E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-07 | 3.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-08 | 2.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.8E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.3E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.3E-04 | 2.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0062 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 8.1E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0063 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.9E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 9.2E-06 | 0.0050 |
| Beryllium | 0.043 | 2.1E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0061 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.4E-05 | 1.4E-05 |
| Cobalt | 0.0060 | 2.5E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.3E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.2E-04 | 2.2E-04 |
| Nickel | 0.045 | 0.0075 | 0.052 |
| Phosphorus | 7.3E-10 | 3.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.0E-05 | 0.015 |
| Silver | 0.034 | 0.0015 | 0.036 |
| Thallium | 0.029 | 0.0017 | 0.031 |
| Tin | 0.0015 | 3.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.7E-04 | 0.0053 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.2E-06 | 0.0023 |
| Fluorene[a] | - | 2.6E-07 | 2.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.7E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.5E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.2E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.9E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.9E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.6E-07 | 4.6E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.2E-08 | 3.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 8.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.9E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 6.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.5E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.4E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.4E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 7.6E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.6E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.023 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.3E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.0E-04 | 1.0E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.4E-04 | 8.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.5E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0027 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.6E-05 | 0.015 |
| Arsenic | 0.12 | 5.2E-05 | 0.12 |
| Barium | 0.0049 | 4.0E-06 | 0.0050 |
| Beryllium | 0.043 | 8.9E-05 | 0.043 |
| Boron | 0.0031 | 5.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.0E-06 | 6.0E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.9E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.4E-05 | 9.4E-05 |
| Nickel | 0.045 | 0.0033 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.5E-06 | 0.015 |
| Silver | 0.034 | 6.3E-04 | 0.035 |
| Thallium | 0.029 | 7.3E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.2E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.0E-09 | 7.0E-09 |
| Pentachlorobenzene[a] | - | 4.9E-09 | 4.9E-09 |
| Pentachlorophenol | 8.2E-04 | 1.5E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.0E-07 | 2.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.9E-11 | 0.12 |
| Benzene | 0.13 | 3.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.8E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.0E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.9E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.0E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.3E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.6E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.2E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0099 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.9E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 1.0E-03 | 1.0E-03 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0032 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0032 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.0E-05 | 0.015 |
| Arsenic | 0.12 | 6.2E-05 | 0.12 |
| Barium | 0.0049 | 4.7E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 6.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0031 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.1E-06 | 7.1E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.2E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0039 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.3E-06 | 0.015 |
| Silver | 0.034 | 7.4E-04 | 0.035 |
| Thallium | 0.029 | 8.7E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.9E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.5E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.3E-09 | 8.3E-09 |
| Pentachlorobenzene[a] | - | 5.8E-09 | 5.8E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.3E-07 | 2.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.3E-11 | 0.12 |
| Benzene | 0.13 | 4.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.7E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.6E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.9E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.6E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.7E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.2E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.4E-04 | 1.4E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0012 | 0.0012 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0037 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.5E-05 | 0.015 |
| Arsenic | 0.12 | 7.2E-05 | 0.12 |
| Barium | 0.0049 | 5.4E-06 | 0.0050 |
| Beryllium | 0.043 | 1.2E-04 | 0.043 |
| Boron | 0.0031 | 7.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0036 | 0.12 |
| Chromium (hexavalent)[a] | - | 8.2E-06 | 8.2E-06 |
| Cobalt | 0.0060 | 1.5E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.6E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.3E-04 | 1.3E-04 |
| Nickel | 0.045 | 0.0045 | 0.049 |
| Phosphorus | 7.3E-10 | 1.8E-12 | 7.3E-10 |
| Selenium | 0.015 | 6.2E-06 | 0.015 |
| Silver | 0.034 | 8.6E-04 | 0.035 |
| Thallium | 0.029 | 0.0010 | 0.030 |
| Tin | 0.0015 | 2.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.0E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Fluorene[a] | - | 1.6E-07 | 1.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.6E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 9.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 7.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.7E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 9.6E-09 | 9.6E-09 |
| Pentachlorobenzene[a] | - | 6.7E-09 | 6.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.0E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.7E-07 | 2.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.9E-08 | 1.9E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 5.1E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 6.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 8.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.4E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.2E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 8.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.2E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 4.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.014 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.6E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.5E-05 | 9.5E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.9E-04 | 7.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0026 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.4E-05 | 0.015 |
| Arsenic | 0.12 | 4.9E-05 | 0.12 |
| Barium | 0.0049 | 3.7E-06 | 0.0050 |
| Beryllium | 0.043 | 8.4E-05 | 0.043 |
| Boron | 0.0031 | 5.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0025 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.6E-06 | 5.6E-06 |
| Cobalt | 0.0060 | 1.0E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 8.8E-05 | 8.8E-05 |
| Nickel | 0.045 | 0.0031 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.2E-06 | 0.015 |
| Silver | 0.034 | 5.9E-04 | 0.035 |
| Thallium | 0.029 | 6.9E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.6E-09 | 6.6E-09 |
| Pentachlorobenzene[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.9E-07 | 1.9E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.5E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.4E-11 | 0.12 |
| Benzene | 0.13 | 3.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0054 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.7E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.9E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.5E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0093 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.3E-04 | 2.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0061 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 7.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0062 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.9E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 9.0E-06 | 0.0050 |
| Beryllium | 0.043 | 2.0E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0060 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.4E-05 | 1.4E-05 |
| Cobalt | 0.0060 | 2.5E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.3E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.1E-04 | 2.1E-04 |
| Nickel | 0.045 | 0.0075 | 0.052 |
| Phosphorus | 7.3E-10 | 3.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.0E-05 | 0.015 |
| Silver | 0.034 | 0.0014 | 0.036 |
| Thallium | 0.029 | 0.0017 | 0.031 |
| Tin | 0.0015 | 3.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.7E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.1E-06 | 0.0023 |
| Fluorene[a] | - | 2.6E-07 | 2.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.7E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.5E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.2E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.8E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.8E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.5E-07 | 4.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.2E-08 | 3.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 8.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.8E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.4E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.4E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 7.5E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.6E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.023 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.3E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.7E-04 | 9.7E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0031 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.0E-05 | 0.015 |
| Arsenic | 0.12 | 6.0E-05 | 0.12 |
| Barium | 0.0049 | 4.6E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.9E-06 | 6.9E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.2E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0038 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.2E-06 | 0.015 |
| Silver | 0.034 | 7.2E-04 | 0.035 |
| Thallium | 0.029 | 8.4E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.6E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.1E-09 | 8.1E-09 |
| Pentachlorobenzene[a] | - | 5.6E-09 | 5.6E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.3E-07 | 2.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.0E-11 | 0.12 |
| Benzene | 0.13 | 4.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.4E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 3.8E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.2E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0046 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0047 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.4E-05 | 0.015 |
| Arsenic | 0.12 | 9.1E-05 | 0.12 |
| Barium | 0.0049 | 6.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0045 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.0E-05 | 1.0E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.2E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.6E-04 | 1.6E-04 |
| Nickel | 0.045 | 0.0056 | 0.050 |
| Phosphorus | 7.3E-10 | 2.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.8E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.6E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.4E-09 | 8.4E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-07 | 3.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-08 | 2.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.7E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.2E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.8E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0034 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.5E-05 | 0.12 |
| Barium | 0.0049 | 4.9E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.1E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.4E-06 | 7.4E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.6E-06 | 0.015 |
| Silver | 0.034 | 7.8E-04 | 0.035 |
| Thallium | 0.029 | 9.1E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.3E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.5E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorobenzene[a] | - | 6.1E-09 | 6.1E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.5E-07 | 2.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.7E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 6.0E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 4.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.8E-04 | 1.8E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0047 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0048 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.5E-05 | 0.015 |
| Arsenic | 0.12 | 9.3E-05 | 0.12 |
| Barium | 0.0049 | 7.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.0E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0046 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.3E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0058 | 0.051 |
| Phosphorus | 7.3E-10 | 2.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.9E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-07 | 3.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-08 | 2.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 5.8E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.3E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.9E-04 | 1.9E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0016 | 0.0016 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0050 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0050 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.7E-05 | 0.015 |
| Arsenic | 0.12 | 9.7E-05 | 0.12 |
| Barium | 0.0049 | 7.3E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.1E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0048 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 2.0E-04 | 0.0062 |
| Lead[c] | 0.0066 | 3.5E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0060 | 0.051 |
| Phosphorus | 7.3E-10 | 2.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 8.3E-06 | 0.015 |
| Silver | 0.034 | 0.0012 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 3.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 4.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.4E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.5E-06 | 0.0023 |
| Fluorene[a] | - | 2.1E-07 | 2.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.4E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.9E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.3E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.3E-08 | 1.3E-08 |
| Pentachlorobenzene[a] | - | 9.0E-09 | 9.0E-09 |
| Pentachlorophenol | 8.2E-04 | 2.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.7E-07 | 3.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.6E-08 | 2.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.9E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.4E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.2E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.9E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.9E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.5E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.1E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.1E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.9E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.0050 | 6.1E-08 | 0.0050 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.9E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.7E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.5E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Max GLC** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 8.5E-09 |
| Beryllium | 7.1E-07 | 3.7E-09 |
| Cadmium | 5.9E-06 | 3.2E-07 |
| Chromium (hexavalent)[a] | - | 1.1E-07 |
| Total Chromium (and compounds) | 1.9E-05 | 1.1E-07 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 8.6E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.1E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.5E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 2.8E-15 |
| Benzene | 3.1E-05 | 2.2E-09 |
| Carbon tetrachloride | 9.2E-06 | 4.3E-11 |
| Chloroform | 3.7E-06 | 1.1E-10 |
| Dichloromethane | 3.6E-07 | 7.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 1.6E-09 |
| Formaldehyde | 8.8E-06 | 2.3E-09 |
| Tetrachloroethene | 1.4E-06 | 2.7E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.7E-12 |
| Vinyl chloride | 3.2E-08 | 3.5E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 4.8E-09 |
| Lung Carcinogens | 4.7E-05 | 5.7E-07 |
| Skin Carcinogens | 2.1E-05 | 1.7E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Schools** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.1E-09 |
| Beryllium | 7.1E-07 | 1.8E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.0E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 7.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.0E-16 |
| Benzene | 3.1E-05 | 1.1E-09 |
| Carbon tetrachloride | 9.2E-06 | 7.7E-12 |
| Chloroform | 3.7E-06 | 5.2E-11 |
| Dichloromethane | 3.6E-07 | 3.7E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 1.1E-09 |
| Tetrachloroethene | 1.4E-06 | 1.3E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.3E-12 |
| Vinyl chloride | 3.2E-08 | 1.7E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.3E-09 |
| Lung Carcinogens | 4.7E-05 | 2.8E-07 |
| Skin Carcinogens | 2.1E-05 | 8.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Daycares** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.1E-09 |
| Beryllium | 7.1E-07 | 1.8E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.0E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 7.2E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.0E-16 |
| Benzene | 3.1E-05 | 1.1E-09 |
| Carbon tetrachloride | 9.2E-06 | 7.7E-12 |
| Chloroform | 3.7E-06 | 5.2E-11 |
| Dichloromethane | 3.6E-07 | 3.6E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 1.1E-09 |
| Tetrachloroethene | 1.4E-06 | 1.3E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.3E-12 |
| Vinyl chloride | 3.2E-08 | 1.7E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.3E-09 |
| Lung Carcinogens | 4.7E-05 | 2.8E-07 |
| Skin Carcinogens | 2.1E-05 | 8.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Farms** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 7.5E-09 |
| Beryllium | 7.1E-07 | 3.3E-09 |
| Cadmium | 5.9E-06 | 2.8E-07 |
| Chromium (hexavalent)[a] | - | 1.0E-07 |
| Total Chromium (and compounds) | 1.9E-05 | 1.0E-07 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 7.6E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.9E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.3E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.0E-16 |
| Benzene | 3.1E-05 | 1.9E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.4E-11 |
| Chloroform | 3.7E-06 | 9.4E-11 |
| Dichloromethane | 3.6E-07 | 6.6E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.2E-10 |
| Formaldehyde | 8.8E-06 | 2.0E-09 |
| Tetrachloroethene | 1.4E-06 | 2.4E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.4E-12 |
| Vinyl chloride | 3.2E-08 | 3.1E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 4.2E-09 |
| Lung Carcinogens | 4.7E-05 | 5.0E-07 |
| Skin Carcinogens | 2.1E-05 | 1.5E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Current/Future Commercial/Industrial 400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 6.0E-09 |
| Beryllium | 7.1E-07 | 2.7E-09 |
| Cadmium | 5.9E-06 | 2.3E-07 |
| Chromium (hexavalent)[a] | - | 8.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 8.1E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.3E-16 |
| Benzene | 3.1E-05 | 1.6E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 7.5E-11 |
| Dichloromethane | 3.6E-07 | 5.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.2E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-09 |
| Tetrachloroethene | 1.4E-06 | 1.9E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-12 |
| Vinyl chloride | 3.2E-08 | 2.5E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.4E-09 |
| Lung Carcinogens | 4.7E-05 | 4.0E-07 |
| Skin Carcinogens | 2.1E-05 | 1.2E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Park/Recreational** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 7.8E-09 |
| Beryllium | 7.1E-07 | 3.5E-09 |
| Cadmium | 5.9E-06 | 3.0E-07 |
| Chromium (hexavalent)[a] | - | 1.1E-07 |
| Total Chromium (and compounds) | 1.9E-05 | 1.1E-07 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 7.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.0E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.4E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.5E-16 |
| Benzene | 3.1E-05 | 2.0E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.5E-11 |
| Chloroform | 3.7E-06 | 9.8E-11 |
| Dichloromethane | 3.6E-07 | 6.9E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.5E-10 |
| Formaldehyde | 8.8E-06 | 2.1E-09 |
| Tetrachloroethene | 1.4E-06 | 2.5E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.5E-12 |
| Vinyl chloride | 3.2E-08 | 3.2E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 4.4E-09 |
| Lung Carcinogens | 4.7E-05 | 5.3E-07 |
| Skin Carcinogens | 2.1E-05 | 1.6E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Hospitals** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.4E-09 |
| Beryllium | 7.1E-07 | 1.5E-09 |
| Cadmium | 5.9E-06 | 1.3E-07 |
| Chromium (hexavalent)[a] | - | 4.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.6E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.4E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 8.6E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.9E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.1E-16 |
| Benzene | 3.1E-05 | 8.8E-10 |
| Carbon tetrachloride | 9.2E-06 | 6.3E-12 |
| Chloroform | 3.7E-06 | 4.2E-11 |
| Dichloromethane | 3.6E-07 | 3.0E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.4E-10 |
| Formaldehyde | 8.8E-06 | 9.1E-10 |
| Tetrachloroethene | 1.4E-06 | 1.1E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.1E-12 |
| Vinyl chloride | 3.2E-08 | 1.4E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.9E-09 |
| Lung Carcinogens | 4.7E-05 | 2.3E-07 |
| Skin Carcinogens | 2.1E-05 | 6.8E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Retirement Homes** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.0E-09 |
| Beryllium | 7.1E-07 | 1.8E-09 |
| Cadmium | 5.9E-06 | 1.5E-07 |
| Chromium (hexavalent)[a] | - | 5.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.4E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.0E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 7.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.9E-16 |
| Benzene | 3.1E-05 | 1.0E-09 |
| Carbon tetrachloride | 9.2E-06 | 7.5E-12 |
| Chloroform | 3.7E-06 | 5.0E-11 |
| Dichloromethane | 3.6E-07 | 3.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.8E-10 |
| Formaldehyde | 8.8E-06 | 1.1E-09 |
| Tetrachloroethene | 1.4E-06 | 1.3E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.3E-12 |
| Vinyl chloride | 3.2E-08 | 1.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.3E-09 |
| Lung Carcinogens | 4.7E-05 | 2.7E-07 |
| Skin Carcinogens | 2.1E-05 | 8.1E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Bowmanville** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.6E-09 |
| Beryllium | 7.1E-07 | 2.1E-09 |
| Cadmium | 5.9E-06 | 1.8E-07 |
| Chromium (hexavalent)[a] | - | 6.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 6.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.7E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.2E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 8.0E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.6E-16 |
| Benzene | 3.1E-05 | 1.2E-09 |
| Carbon tetrachloride | 9.2E-06 | 8.6E-12 |
| Chloroform | 3.7E-06 | 5.8E-11 |
| Dichloromethane | 3.6E-07 | 4.1E-10 |
| Ethylene Dibromide | 1.1E-06 | 3.3E-10 |
| Formaldehyde | 8.8E-06 | 1.2E-09 |
| Tetrachloroethene | 1.4E-06 | 1.5E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.5E-12 |
| Vinyl chloride | 3.2E-08 | 1.9E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.6E-09 |
| Lung Carcinogens | 4.7E-05 | 3.1E-07 |
| Skin Carcinogens | 2.1E-05 | 9.3E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.2E-09 |
| Beryllium | 7.1E-07 | 1.4E-09 |
| Cadmium | 5.9E-06 | 1.2E-07 |
| Chromium (hexavalent)[a] | - | 4.3E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 4.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 3.2E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 8.1E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 5.5E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 3.9E-16 |
| Benzene | 3.1E-05 | 8.2E-10 |
| Carbon tetrachloride | 9.2E-06 | 5.9E-12 |
| Chloroform | 3.7E-06 | 4.0E-11 |
| Dichloromethane | 3.6E-07 | 2.8E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.2E-10 |
| Formaldehyde | 8.8E-06 | 8.6E-10 |
| Tetrachloroethene | 1.4E-06 | 1.0E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.0E-12 |
| Vinyl chloride | 3.2E-08 | 1.3E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 1.8E-09 |
| Lung Carcinogens | 4.7E-05 | 2.1E-07 |
| Skin Carcinogens | 2.1E-05 | 6.4E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Courtice Rd. Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 7.7E-09 |
| Beryllium | 7.1E-07 | 3.4E-09 |
| Cadmium | 5.9E-06 | 2.9E-07 |
| Chromium (hexavalent)[a] | - | 1.0E-07 |
| Total Chromium (and compounds) | 1.9E-05 | 1.0E-07 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 7.8E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 2.0E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.3E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 9.4E-16 |
| Benzene | 3.1E-05 | 2.0E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.4E-11 |
| Chloroform | 3.7E-06 | 9.7E-11 |
| Dichloromethane | 3.6E-07 | 6.8E-10 |
| Ethylene Dibromide | 1.1E-06 | 5.4E-10 |
| Formaldehyde | 8.8E-06 | 2.1E-09 |
| Tetrachloroethene | 1.4E-06 | 2.4E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.5E-12 |
| Vinyl chloride | 3.2E-08 | 3.2E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 4.4E-09 |
| Lung Carcinogens | 4.7E-05 | 5.2E-07 |
| Skin Carcinogens | 2.1E-05 | 1.6E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Maple Grove** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 3.9E-09 |
| Beryllium | 7.1E-07 | 1.7E-09 |
| Cadmium | 5.9E-06 | 1.5E-07 |
| Chromium (hexavalent)[a] | - | 5.2E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.3E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.0E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 9.9E-11 |
| Trichlorophenol, 2,4,6-[a] | - | 6.8E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 4.7E-16 |
| Benzene | 3.1E-05 | 1.0E-09 |
| Carbon tetrachloride | 9.2E-06 | 7.3E-12 |
| Chloroform | 3.7E-06 | 4.9E-11 |
| Dichloromethane | 3.6E-07 | 3.4E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.7E-10 |
| Formaldehyde | 8.8E-06 | 1.0E-09 |
| Tetrachloroethene | 1.4E-06 | 1.2E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.3E-12 |
| Vinyl chloride | 3.2E-08 | 1.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.2E-09 |
| Lung Carcinogens | 4.7E-05 | 2.6E-07 |
| Skin Carcinogens | 2.1E-05 | 7.8E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Oshawa Subdivision** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 5.8E-09 |
| Beryllium | 7.1E-07 | 2.6E-09 |
| Cadmium | 5.9E-06 | 2.2E-07 |
| Chromium (hexavalent)[a] | - | 7.9E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 7.9E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 5.9E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.1E-16 |
| Benzene | 3.1E-05 | 1.5E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 7.3E-11 |
| Dichloromethane | 3.6E-07 | 5.2E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.1E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-09 |
| Tetrachloroethene | 1.4E-06 | 1.8E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-12 |
| Vinyl chloride | 3.2E-08 | 2.4E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.3E-09 |
| Lung Carcinogens | 4.7E-05 | 3.9E-07 |
| Skin Carcinogens | 2.1E-05 | 1.2E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Port Darlington** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 4.2E-09 |
| Beryllium | 7.1E-07 | 1.9E-09 |
| Cadmium | 5.9E-06 | 1.6E-07 |
| Chromium (hexavalent)[a] | - | 5.6E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 5.7E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 4.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.1E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 7.3E-13 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 5.1E-16 |
| Benzene | 3.1E-05 | 1.1E-09 |
| Carbon tetrachloride | 9.2E-06 | 7.8E-12 |
| Chloroform | 3.7E-06 | 5.3E-11 |
| Dichloromethane | 3.6E-07 | 3.7E-10 |
| Ethylene Dibromide | 1.1E-06 | 2.9E-10 |
| Formaldehyde | 8.8E-06 | 1.1E-09 |
| Tetrachloroethene | 1.4E-06 | 1.3E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.4E-12 |
| Vinyl chloride | 3.2E-08 | 1.7E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 2.4E-09 |
| Lung Carcinogens | 4.7E-05 | 2.8E-07 |
| Skin Carcinogens | 2.1E-05 | 8.5E-09 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Solina Rd.** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 6.0E-09 |
| Beryllium | 7.1E-07 | 2.6E-09 |
| Cadmium | 5.9E-06 | 2.3E-07 |
| Chromium (hexavalent)[a] | - | 8.1E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 8.1E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.1E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.5E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.0E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.2E-16 |
| Benzene | 3.1E-05 | 1.5E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.1E-11 |
| Chloroform | 3.7E-06 | 7.5E-11 |
| Dichloromethane | 3.6E-07 | 5.3E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.2E-10 |
| Formaldehyde | 8.8E-06 | 1.6E-09 |
| Tetrachloroethene | 1.4E-06 | 1.9E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 1.9E-12 |
| Vinyl chloride | 3.2E-08 | 2.5E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.4E-09 |
| Lung Carcinogens | 4.7E-05 | 4.0E-07 |
| Skin Carcinogens | 2.1E-05 | 1.2E-08 |

[a] Baseline Data Not Available

## Chronic Incremental Lifetime Cancer Risk (ILCR) Values for COPC Exposure Scenarios

**Tooley** **400,000 tpy**

| COPC | Lifetime Cancer Risk (LCR) Values (based on maximum predicted air concentrations in this cluster) | Incremental Lifetime Cancer Risk (ILCR) Values (based on maximum predicted air concentrations in this cluster) |
|---|---|---|
| | Baseline Case | Process Upset Case |
| **Metals** | | |
| Arsenic | 7.7E-06 | 6.2E-09 |
| Beryllium | 7.1E-07 | 2.8E-09 |
| Cadmium | 5.9E-06 | 2.4E-07 |
| Chromium (hexavalent)[a] | - | 8.4E-08 |
| Total Chromium (and compounds) | 1.9E-05 | 8.5E-08 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | |
| Benzo(a)pyrene TEQ | 1.4E-05 | 6.3E-09 |
| **Chlorinated Monocyclic Aromatics** | | |
| Hexachlorobenzene | 2.4E-08 | 1.6E-10 |
| Trichlorophenol, 2,4,6-[a] | - | 1.1E-12 |
| **Volatile Organic Chemicals (VOC)** | | |
| Acetaldehyde | 6.1E-07 | 7.6E-16 |
| Benzene | 3.1E-05 | 1.6E-09 |
| Carbon tetrachloride | 9.2E-06 | 1.2E-11 |
| Chloroform | 3.7E-06 | 7.8E-11 |
| Dichloromethane | 3.6E-07 | 5.5E-10 |
| Ethylene Dibromide | 1.1E-06 | 4.4E-10 |
| Formaldehyde | 8.8E-06 | 1.7E-09 |
| Tetrachloroethene | 1.4E-06 | 2.0E-10 |
| Trichloroethylene, 1,1,2 - | 1.7E-07 | 2.0E-12 |
| Vinyl chloride | 3.2E-08 | 2.6E-09 |
| **Chemical Mixtures** | | |
| Liver Carcinogens | 5.5E-06 | 3.5E-09 |
| Lung Carcinogens | 4.7E-05 | 4.2E-07 |
| Skin Carcinogens | 2.1E-05 | 1.3E-08 |

[a] Baseline Data Not Available

# APPENDIX I-5

Multi-Pathway Results – Baseline Case

**Hazard Quotients for a Resident Receptor Exposed to COPC from the Project - Infant**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.79E-06 | 7.68E-07 | 4.21E-07 | -- | 6.33E-07 | 1.97E-07 | 3.05E-07 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.58E-07 | 1.54E-07 | 8.42E-08 | -- | 1.84E-07 | 5.72E-08 | 8.85E-08 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.68E-06 | 1.15E-06 | 6.31E-07 | -- | 9.49E-07 | 2.96E-07 | 4.58E-07 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.36E-03 | 2.31E-03 | 1.26E-03 | -- | 1.33E-03 | 4.14E-04 | 6.41E-04 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.64E-03 | 7.07E-04 | 3.87E-04 | -- | 8.73E-05 | 2.72E-05 | 4.21E-05 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.58E-09 | 3.69E-09 | 2.02E-09 | -- | 3.04E-09 | 9.47E-10 | 1.46E-09 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.15E-06 | 9.22E-07 | 5.05E-07 | -- | 4.18E-07 | 1.30E-07 | 2.01E-07 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.06E-05 | 1.32E-05 | 7.22E-06 | -- | 5.43E-05 | 1.69E-05 | 2.61E-05 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.15E-06 | 9.22E-07 | 5.05E-07 | -- | 3.80E-07 | 1.18E-07 | 1.83E-07 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.43E-07 | 6.15E-08 | 3.37E-08 | -- | 5.06E-08 | 1.58E-08 | 2.44E-08 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.39E-05 | 2.41E-05 | -- | 1.81E-05 | 5.64E-06 | 8.72E-06 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.34E-04 | 5.76E-05 | 3.16E-05 | -- | 1.90E-05 | 5.92E-06 | 9.15E-06 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 9.98E-08 | 4.29E-08 | 2.35E-08 | -- | 1.77E-08 | 5.51E-09 | 8.51E-09 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.29E-05 | 1.84E-05 | 1.01E-05 | -- | 9.87E-06 | 3.08E-06 | 4.76E-06 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.15E-05 | 9.22E-06 | 5.05E-06 | -- | 3.80E-07 | 1.18E-07 | 1.83E-07 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-07 | 1.84E-07 | 1.01E-07 | -- | 8.36E-08 | 2.60E-08 | 4.03E-08 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.36E-03 | 2.31E-03 | 1.26E-03 | -- | 9.49E-04 | 2.96E-04 | 4.58E-04 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.72E-02 | 2.46E-02 | 1.35E-02 | -- | 3.04E-03 | 9.47E-04 | 1.46E-03 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.55E-04 | 4.11E-04 | 2.25E-04 | -- | 1.69E-04 | 5.27E-05 | 8.15E-05 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 7.51E-04 | 3.23E-04 | 1.77E-04 | -- | 3.99E-05 | 1.24E-05 | 1.92E-05 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.42E-04 | 6.10E-05 | 3.34E-05 | -- | 2.51E-05 | 7.83E-06 | 1.21E-05 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.15E-03 | 9.22E-04 | 5.05E-04 | -- | 5.32E-04 | 1.66E-04 | 2.56E-04 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.17E-05 | 1.36E-05 | 7.47E-06 | -- | 2.25E-06 | 7.00E-07 | 1.08E-06 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.07E-02 | 4.61E-03 | 2.53E-03 | -- | 1.90E-03 | 5.92E-04 | 9.15E-04 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.96E-02 | 8.43E-03 | 4.62E-03 | -- | 2.08E-04 | 6.49E-05 | 1.00E-04 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.01E-04 | 2.15E-04 | 1.18E-04 | -- | 4.43E-05 | 1.38E-05 | 2.14E-05 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.31E-03 | 5.65E-04 | 3.09E-04 | -- | 8.14E-04 | 2.54E-04 | 3.92E-04 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.13E-07 | 4.86E-08 | 2.66E-08 | -- | 2.00E-08 | 6.23E-09 | 9.64E-09 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-04 | 1.84E-04 | 1.01E-04 | -- | 1.52E-06 | 4.74E-07 | 7.32E-07 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.58E-05 | 3.69E-05 | 2.02E-05 | -- | 3.80E-05 | 1.18E-05 | 1.83E-05 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.68E-02 | 1.15E-02 | 6.31E-03 | -- | 4.75E-04 | 1.48E-04 | 2.29E-04 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.15E-05 | 3.07E-05 | 1.68E-05 | -- | 1.27E-05 | 3.95E-06 | 6.10E-06 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.65E-03 | 2.86E-03 | 1.57E-03 | -- | 1.18E-03 | 3.67E-04 | 5.67E-04 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.65E-04 | 2.43E-04 | 1.33E-04 | -- | 2.00E-05 | 6.24E-06 | 9.64E-06 | -- |

**Hazard Quotients for a Resident Receptor Exposed to COPC from the Project - Infant**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.62E-08 | 4.14E-06 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-08 | 9.47E-07 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.45E-08 | 6.25E-06 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E+01 | **1.08E+01** |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E+00 | **3.83E+00** |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-09 | 2.08E-08 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-07 | 4.73E-06 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-05 | 1.64E-04 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-07 | 4.45E-06 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.70E-08 | 3.66E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-03 | 2.01E-03 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.71E-04 | 6.29E-04 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-07 | 3.94E-07 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-03 | 2.49E-03 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.89E-04 | 9.26E-04 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.88E-08 | 8.93E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-02 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-01 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-03 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-03 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-04 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.53E-03 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-02 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-02 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-03 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-04 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-04 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-02 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-04 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-02 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.77E-04 |

**Hazard Quotients for a Resident Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.92E-06 | 2.55E-06 | 5.85E-07 | -- | 4.60E-07 | 1.32E-07 | 2.04E-07 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.18E-06 | 5.09E-07 | 1.17E-07 | -- | 1.33E-07 | 3.83E-08 | 5.91E-08 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 8.88E-06 | 3.82E-06 | 8.78E-07 | -- | 6.90E-07 | 1.98E-07 | 3.06E-07 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.78E-02 | 7.64E-03 | 1.76E-03 | -- | 9.66E-04 | 2.77E-04 | 4.28E-04 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.45E-03 | 2.34E-03 | 5.38E-04 | -- | 6.35E-05 | 1.82E-05 | 2.81E-05 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.84E-08 | 1.22E-08 | 2.81E-09 | -- | 2.21E-09 | 6.34E-10 | 9.78E-10 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.11E-06 | 3.06E-06 | 7.02E-07 | -- | 3.04E-07 | 8.72E-08 | 1.34E-07 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.36E-05 | 1.00E-05 | -- | 3.94E-05 | 1.13E-05 | 1.75E-05 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.11E-06 | 3.06E-06 | 7.02E-07 | -- | 2.76E-07 | 7.93E-08 | 1.22E-07 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.74E-07 | 2.04E-07 | 4.68E-08 | -- | 3.68E-08 | 1.06E-08 | 1.63E-08 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.38E-04 | 1.45E-04 | 3.34E-05 | -- | 1.31E-05 | 3.78E-06 | 5.82E-06 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.44E-04 | 1.91E-04 | 4.39E-05 | -- | 1.38E-05 | 3.96E-06 | 6.11E-06 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.31E-07 | 1.42E-07 | 3.27E-08 | -- | 1.28E-08 | 3.69E-09 | 5.69E-09 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.42E-04 | 6.11E-05 | 1.40E-05 | -- | 7.18E-06 | 2.06E-06 | 3.18E-06 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.11E-05 | 3.06E-05 | 7.02E-06 | -- | 2.76E-07 | 7.93E-08 | 1.22E-07 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-06 | 6.11E-07 | 1.40E-07 | -- | 6.07E-08 | 1.74E-08 | 2.69E-08 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.78E-02 | 7.64E-03 | 1.76E-03 | -- | 6.90E-04 | 1.98E-04 | 3.06E-04 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.90E-01 | 8.15E-02 | 1.87E-02 | -- | 2.21E-03 | 6.34E-04 | 9.78E-04 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.16E-03 | 1.36E-03 | 3.13E-04 | -- | 1.23E-04 | 3.53E-05 | 5.44E-05 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.49E-03 | 1.07E-03 | 2.46E-04 | -- | 2.90E-05 | 8.32E-06 | 1.28E-05 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.70E-04 | 2.02E-04 | 4.64E-05 | -- | 1.83E-05 | 5.24E-06 | 8.08E-06 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.11E-03 | 3.06E-03 | 7.02E-04 | -- | 3.87E-04 | 1.11E-04 | 1.71E-04 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.05E-04 | 4.52E-05 | 1.04E-05 | -- | 1.63E-06 | 4.69E-07 | 7.23E-07 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.55E-02 | 1.53E-02 | 3.51E-03 | -- | 1.38E-03 | 3.96E-04 | 6.11E-04 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.50E-02 | 2.79E-02 | 6.42E-03 | -- | 1.51E-04 | 4.35E-05 | 6.70E-05 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.66E-03 | 7.13E-04 | 1.64E-04 | -- | 3.22E-05 | 9.25E-06 | 1.43E-05 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.35E-03 | 1.87E-03 | 4.30E-04 | -- | 5.92E-04 | 1.70E-04 | 2.62E-04 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.74E-07 | 1.61E-07 | 3.70E-08 | -- | 1.45E-08 | 4.17E-09 | 6.44E-09 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-03 | 6.11E-04 | 1.40E-04 | -- | 1.10E-06 | 3.17E-07 | 4.89E-07 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.84E-04 | 1.22E-04 | 2.81E-05 | -- | 2.76E-05 | 7.93E-06 | 1.22E-05 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 8.88E-02 | 3.82E-02 | 8.78E-03 | -- | 3.45E-04 | 9.91E-05 | 1.53E-04 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.37E-04 | 1.02E-04 | 2.34E-05 | -- | 9.20E-06 | 2.64E-06 | 4.07E-06 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.20E-02 | 9.47E-03 | 2.18E-03 | -- | 8.56E-04 | 2.46E-04 | 3.79E-04 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.87E-03 | 8.05E-04 | 1.85E-04 | -- | 1.45E-05 | 4.18E-06 | 6.44E-06 | -- |

**Hazard Quotients for a Resident Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.79E-06 | 8.90E-07 | 8.13E-08 | 3.41E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-05 |
| Anthracene | 3.59E-07 | 1.78E-07 | 1.63E-08 | 6.83E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-06 |
| Fluorene | 2.96E-06 | 1.34E-06 | 1.22E-07 | 6.66E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-05 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.69E-01 | 1.34E-01 | 1.22E-02 | 5.12E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **4.95E-01** |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.64E-02 | 3.09E-02 | 4.74E-03 | 2.32E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-01 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.59E-06 | -- | -- | 1.02E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-06 |
| Bromoform | 1.79E-03 | -- | -- | 5.12E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-03 |
| Carbon Tetrachloride | 2.56E-02 | -- | -- | 7.31E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.32E-02 |
| Chloroform | 1.97E-03 | -- | -- | 6.14E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-03 |
| Trichlorofluoromethane (FREON 11) | 1.20E-04 | -- | -- | 3.41E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.56E-02 | 1.27E-02 | 1.16E-03 | 4.88E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-02 |
| 1,2,4-Trichlorobenzene | 5.61E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-02 |
| 1,2-Dichlorobenzene | 8.34E-05 | -- | -- | 2.38E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-04 |
| Hexachlorobenzene | 1.08E-02 | 5.34E-03 | 4.88E-04 | 2.05E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-02 |
| Pentachlorobenzene | 5.38E-03 | 2.67E-03 | 2.44E-04 | 1.02E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.43E-03 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-06 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.35E-02 | 6.68E-03 | 6.10E-04 | 2.56E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.17E-02 |
| Arsenic | 1.79E-02 | 8.90E-03 | 8.94E-04 | 3.41E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **3.25E-01** |
| Barium | 1.45E-03 | 4.25E-04 | 5.24E-04 | 4.51E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.90E-03 |
| Beryllium | 2.69E-02 | 1.34E-02 | 1.22E-03 | 5.12E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.05E-02 |
| Boron | 1.35E-02 | 4.14E-03 | 4.51E-04 | 3.07E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-02 |
| Cadmium | 7.82E-03 | 3.36E-03 | 2.80E-03 | 1.02E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-02 |
| Chromium (Total) | 3.59E-05 | 1.78E-05 | 1.63E-06 | 6.83E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-04 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 7.69E-03 | 3.81E-03 | 3.48E-04 | 1.46E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.00E-02 |
| Lead | 5.82E-03 | 2.89E-03 | 3.43E-04 | 1.11E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-01 |
| Mercury - Inorganic | 2.15E-03 | 8.90E-04 | 8.13E-05 | 3.41E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-03 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | 3.32E-03 | 1.34E-03 | 1.22E-04 | 8.70E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-02 |
| Phosphorus | 2.72E-05 | 1.82E-05 | 8.92E-07 | 3.73E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.06E-05 |
| Selenium | 4.81E-03 | 2.88E-03 | 2.44E-04 | 8.19E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-02 |
| Silver | 1.11E-03 | 5.87E-04 | 4.88E-05 | 2.05E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-03 |
| Thallium | 6.73E-02 | 3.34E-02 | 3.05E-03 | 1.28E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.53E-01** |
| Tin | 3.37E-04 | 5.52E-05 | 2.10E-05 | 1.30E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.21E-04 |
| Vanadium | 5.98E-03 | 2.97E-03 | 2.71E-04 | 1.14E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-02 |
| Zinc | 9.74E-03 | 6.05E-03 | 3.11E-04 | 1.40E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-02 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.79E-06 | 7.68E-07 | 4.21E-07 | -- | 6.33E-07 | 1.97E-07 | 3.05E-07 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.58E-07 | 1.54E-07 | 8.42E-08 | -- | 1.84E-07 | 5.72E-08 | 8.85E-08 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.68E-06 | 1.15E-06 | 6.31E-07 | -- | 9.49E-07 | 2.96E-07 | 4.58E-07 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.36E-03 | 2.31E-03 | 1.26E-03 | -- | 1.33E-03 | 4.14E-04 | 6.41E-04 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.64E-03 | 7.07E-04 | 3.87E-04 | -- | 8.73E-05 | 2.72E-05 | 4.21E-05 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.58E-09 | 3.69E-09 | 2.02E-09 | -- | 3.04E-09 | 9.47E-10 | 1.46E-09 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.15E-06 | 9.22E-07 | 5.05E-07 | -- | 4.18E-07 | 1.30E-07 | 2.01E-07 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.06E-05 | 1.32E-05 | 7.22E-06 | -- | 5.43E-05 | 1.69E-05 | 2.61E-05 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.15E-06 | 9.22E-07 | 5.05E-07 | -- | 3.80E-07 | 1.18E-07 | 1.83E-07 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.43E-07 | 6.15E-08 | 3.37E-08 | -- | 5.06E-08 | 1.58E-08 | 2.44E-08 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.39E-05 | 2.41E-05 | -- | 1.81E-05 | 5.64E-06 | 8.72E-06 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.34E-04 | 5.76E-05 | 3.16E-05 | -- | 1.90E-05 | 5.92E-06 | 9.15E-06 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 9.98E-08 | 4.29E-08 | 2.35E-08 | -- | 1.77E-08 | 5.51E-09 | 8.51E-09 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.29E-05 | 1.84E-05 | 1.01E-05 | -- | 9.87E-06 | 3.08E-06 | 4.76E-06 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.15E-05 | 9.22E-06 | 5.05E-06 | -- | 3.80E-07 | 1.18E-07 | 1.83E-07 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-07 | 1.84E-07 | 1.01E-07 | -- | 8.36E-08 | 2.60E-08 | 4.03E-08 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.36E-03 | 2.31E-03 | 1.26E-03 | -- | 9.49E-04 | 2.96E-04 | 4.58E-04 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.72E-02 | 2.46E-02 | 1.35E-02 | -- | 3.04E-03 | 9.47E-04 | 1.46E-03 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.55E-04 | 4.11E-04 | 2.25E-04 | -- | 1.69E-04 | 5.27E-05 | 8.15E-05 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 7.51E-04 | 3.23E-04 | 1.77E-04 | -- | 3.99E-05 | 1.24E-05 | 1.92E-05 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.42E-04 | 6.10E-05 | 3.34E-05 | -- | 2.51E-05 | 7.83E-06 | 1.21E-05 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.15E-03 | 9.22E-04 | 5.05E-04 | -- | 5.32E-04 | 1.66E-04 | 2.56E-04 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.17E-05 | 1.36E-05 | 7.47E-06 | -- | 2.25E-06 | 7.00E-07 | 1.08E-06 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.07E-02 | 4.61E-03 | 2.53E-03 | -- | 1.90E-03 | 5.92E-04 | 9.15E-04 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.96E-02 | 8.43E-03 | 4.62E-03 | -- | 2.08E-04 | 6.49E-05 | 1.00E-04 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.01E-04 | 2.15E-04 | 1.18E-04 | -- | 4.43E-05 | 1.38E-05 | 2.14E-05 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.31E-03 | 5.65E-04 | 3.09E-04 | -- | 8.14E-04 | 2.54E-04 | 3.92E-04 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.13E-07 | 4.86E-08 | 2.66E-08 | -- | 2.00E-08 | 6.23E-09 | 9.64E-09 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-04 | 1.84E-04 | 1.01E-04 | -- | 1.52E-06 | 4.74E-07 | 7.32E-07 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.58E-05 | 3.69E-05 | 2.02E-05 | -- | 3.80E-05 | 1.18E-05 | 1.83E-05 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.68E-02 | 1.15E-02 | 6.31E-03 | -- | 4.75E-04 | 1.48E-04 | 2.29E-04 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.15E-05 | 3.07E-05 | 1.68E-05 | -- | 1.27E-05 | 3.95E-06 | 6.10E-06 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.65E-03 | 2.86E-03 | 1.57E-03 | -- | 1.18E-03 | 3.67E-04 | 5.67E-04 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.65E-04 | 2.43E-04 | 1.33E-04 | -- | 2.00E-05 | 6.24E-06 | 9.64E-06 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-07 | 4.30E-06 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-07 | 1.07E-06 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.86E-07 | 6.75E-06 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E+02 | **1.17E+02** |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E+01 | **2.03E+01** |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-07 | 1.81E-07 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.18E-05 | 6.61E-05 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-03 | 2.52E-03 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-05 | 3.07E-05 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.56E-06 | 5.89E-06 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-02 | 2.00E-02 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-01 | **2.05E-01** |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.94E-05 | 2.96E-05 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-02 | 2.64E-02 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.76E-03 | 9.80E-03 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.88E-08 | 8.93E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-02 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-01 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-03 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-03 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-04 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.53E-03 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-02 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-02 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-03 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-04 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-04 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-02 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-04 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-02 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.77E-04 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.92E-06 | 2.55E-06 | 5.85E-07 | -- | 4.60E-07 | 1.32E-07 | 2.04E-07 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.18E-06 | 5.09E-07 | 1.17E-07 | -- | 1.33E-07 | 3.83E-08 | 5.91E-08 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 8.88E-06 | 3.82E-06 | 8.78E-07 | -- | 6.90E-07 | 1.98E-07 | 3.06E-07 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.78E-02 | 7.64E-03 | 1.76E-03 | -- | 9.66E-04 | 2.77E-04 | 4.28E-04 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.45E-03 | 2.34E-03 | 5.38E-04 | -- | 6.35E-05 | 1.82E-05 | 2.81E-05 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.84E-08 | 1.22E-08 | 2.81E-09 | -- | 2.21E-09 | 6.34E-10 | 9.78E-10 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.11E-06 | 3.06E-06 | 7.02E-07 | -- | 3.04E-07 | 8.72E-08 | 1.34E-07 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.36E-05 | 1.00E-05 | -- | 3.94E-05 | 1.13E-05 | 1.75E-05 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.11E-06 | 3.06E-06 | 7.02E-07 | -- | 2.76E-07 | 7.93E-08 | 1.22E-07 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.74E-07 | 2.04E-07 | 4.68E-08 | -- | 3.68E-08 | 1.06E-08 | 1.63E-08 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.38E-04 | 1.45E-04 | 3.34E-05 | -- | 1.31E-05 | 3.78E-06 | 5.82E-06 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.44E-04 | 1.91E-04 | 4.39E-05 | -- | 1.38E-05 | 3.96E-06 | 6.11E-06 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.31E-07 | 1.42E-07 | 3.27E-08 | -- | 1.28E-08 | 3.69E-09 | 5.69E-09 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.42E-04 | 6.11E-05 | 1.40E-05 | -- | 7.18E-06 | 2.06E-06 | 3.18E-06 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.11E-05 | 3.06E-05 | 7.02E-06 | -- | 2.76E-07 | 7.93E-08 | 1.22E-07 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-06 | 6.11E-07 | 1.40E-07 | -- | 6.07E-08 | 1.74E-08 | 2.69E-08 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.78E-02 | 7.64E-03 | 1.76E-03 | -- | 6.90E-04 | 1.98E-04 | 3.06E-04 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.90E-01 | 8.15E-02 | 1.87E-02 | -- | 2.21E-03 | 6.34E-04 | 9.78E-04 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.16E-03 | 1.36E-03 | 3.13E-04 | -- | 1.23E-04 | 3.53E-05 | 5.44E-05 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.49E-03 | 1.07E-03 | 2.46E-04 | -- | 2.90E-05 | 8.32E-06 | 1.28E-05 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.70E-04 | 2.02E-04 | 4.64E-05 | -- | 1.83E-05 | 5.24E-06 | 8.08E-06 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.11E-03 | 3.06E-03 | 7.02E-04 | -- | 3.87E-04 | 1.11E-04 | 1.71E-04 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.05E-04 | 4.52E-05 | 1.04E-05 | -- | 1.63E-06 | 4.69E-07 | 7.23E-07 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.55E-02 | 1.53E-02 | 3.51E-03 | -- | 1.38E-03 | 3.96E-04 | 6.11E-04 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.50E-02 | 2.79E-02 | 6.42E-03 | -- | 1.51E-04 | 4.35E-05 | 6.70E-05 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.66E-03 | 7.13E-04 | 1.64E-04 | -- | 3.22E-05 | 9.25E-06 | 1.43E-05 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.35E-03 | 1.87E-03 | 4.30E-04 | -- | 5.92E-04 | 1.70E-04 | 2.62E-04 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.74E-07 | 1.61E-07 | 3.70E-08 | -- | 1.45E-08 | 4.17E-09 | 6.44E-09 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-03 | 6.11E-04 | 1.40E-04 | -- | 1.10E-06 | 3.17E-07 | 4.89E-07 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.84E-04 | 1.22E-04 | 2.81E-05 | -- | 2.76E-05 | 7.93E-06 | 1.22E-05 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 8.88E-02 | 3.82E-02 | 8.78E-03 | -- | 3.45E-04 | 9.91E-05 | 1.53E-04 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.37E-04 | 1.02E-04 | 2.34E-05 | -- | 9.20E-06 | 2.64E-06 | 4.07E-06 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.20E-02 | 9.47E-03 | 2.18E-03 | -- | 8.56E-04 | 2.46E-04 | 3.79E-04 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.87E-03 | 8.05E-04 | 1.85E-04 | -- | 1.45E-05 | 4.18E-06 | 6.44E-06 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.23E-06 | 1.97E-06 | 1.33E-07 | 9.65E-07 | -- | -- | -- | -- | 1.20E-06 | 1.92E-05 | 5.02E-07 | 2.27E-07 | 3.85E-07 | -- | -- | 3.77E-05 |
| Anthracene | 6.47E-07 | 3.94E-07 | 2.65E-08 | 1.93E-07 | -- | -- | -- | -- | 2.39E-07 | 3.84E-06 | 1.00E-07 | 4.53E-08 | 7.70E-08 | -- | -- | 7.60E-06 |
| Fluorene | 5.34E-06 | 2.96E-06 | 1.99E-07 | 1.88E-06 | -- | -- | -- | -- | 1.79E-06 | 2.88E-05 | 1.25E-06 | 3.40E-07 | 5.78E-07 | -- | -- | 5.79E-05 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.85E-01 | 2.96E-01 | 1.99E-02 | 1.45E-01 | -- | -- | -- | -- | 1.79E-01 | 2.88E+00 | 5.02E-02 | 3.40E-02 | 5.78E-02 | -- | -- | **4.18E+00** |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.74E-01 | 6.85E-02 | 7.73E-03 | 6.55E-02 | -- | -- | -- | -- | 1.93E-02 | 3.49E-01 | 5.28E-03 | 7.95E-03 | 1.43E-02 | -- | -- | **7.19E-01** |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.47E-06 | -- | -- | 2.90E-06 | -- | -- | -- | -- | 3.59E-06 | 5.76E-04 | 1.51E-05 | 2.04E-05 | 1.16E-05 | -- | -- | 6.36E-04 |
| Bromoform | 3.23E-03 | -- | -- | 1.45E-03 | -- | -- | -- | -- | 1.79E-03 | 2.88E-01 | 1.00E-02 | 1.36E-02 | 5.78E-03 | -- | -- | **3.24E-01** |
| Carbon Tetrachloride | 4.62E-02 | -- | -- | 2.07E-02 | -- | -- | -- | -- | 2.56E-02 | 4.11E+00 | 1.43E-01 | 1.94E-01 | 8.25E-02 | -- | -- | **4.63E+00** |
| Chloroform | 3.56E-03 | -- | -- | 1.74E-03 | -- | -- | -- | -- | 1.79E-03 | 2.88E-01 | 1.00E-02 | 1.36E-02 | 5.78E-03 | -- | -- | **3.25E-01** |
| Trichlorofluoromethane (FREON 11) | 2.16E-04 | -- | -- | 9.65E-05 | -- | -- | -- | -- | 1.20E-04 | 1.92E-02 | 6.69E-04 | 9.06E-04 | 3.85E-04 | -- | -- | 2.16E-02 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.62E-02 | 2.81E-02 | 1.89E-03 | 1.38E-02 | -- | -- | -- | -- | 1.71E-02 | 2.74E-01 | 4.78E-03 | 3.24E-03 | 5.50E-03 | -- | -- | **3.95E-01** |
| 1,2,4-Trichlorobenzene | 1.01E-01 | -- | -- | -- | -- | -- | -- | -- | 1.12E-01 | 1.80E+01 | 6.27E-01 | 8.49E-01 | 3.61E-01 | -- | -- | **2.01E+01** |
| 1,2-Dichlorobenzene | 1.50E-04 | -- | -- | 6.73E-05 | -- | -- | -- | -- | 8.34E-05 | 1.34E-02 | 4.67E-04 | 6.32E-04 | 2.69E-04 | -- | -- | 1.51E-02 |
| Hexachlorobenzene | 1.94E-02 | 1.18E-02 | 7.96E-04 | 5.79E-03 | -- | -- | -- | -- | 7.17E-03 | 1.15E-01 | 2.01E-03 | 1.36E-03 | 2.31E-03 | -- | -- | 1.66E-01 |
| Pentachlorobenzene | 9.70E-03 | 5.91E-03 | 3.98E-04 | 2.90E-03 | -- | -- | -- | -- | 3.59E-03 | 5.76E-02 | 1.00E-03 | 6.80E-04 | 1.16E-03 | -- | -- | 8.30E-02 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-06 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.43E-02 | 1.48E-02 | 9.95E-04 | 7.24E-03 | -- | -- | -- | -- | 8.96E-03 | 1.44E-01 | 2.51E-03 | 1.70E-03 | 2.89E-03 | -- | -- | **2.36E-01** |
| Arsenic | 3.23E-02 | 1.97E-02 | 1.46E-03 | 9.65E-03 | -- | -- | -- | -- | 1.20E-02 | 1.92E-01 | 3.35E-03 | 2.49E-03 | 3.85E-03 | -- | -- | **5.70E-01** |
| Barium | 2.61E-03 | 9.40E-04 | 8.55E-04 | 1.28E-03 | -- | -- | -- | -- | 1.17E-04 | 1.44E-03 | 3.06E-05 | 1.37E-04 | 2.30E-04 | -- | -- | 1.27E-02 |
| Beryllium | 4.85E-02 | 2.96E-02 | 1.99E-03 | 1.45E-02 | -- | -- | -- | -- | 1.79E-02 | 2.88E-01 | 5.02E-03 | 3.40E-03 | 5.78E-03 | -- | -- | **4.19E-01** |
| Boron | 2.44E-02 | 9.16E-03 | 7.36E-04 | 8.69E-03 | -- | -- | -- | -- | 1.08E-02 | 5.76E-02 | 3.01E-03 | 6.80E-04 | 2.31E-03 | -- | -- | 1.18E-01 |
| Cadmium | 1.41E-02 | 7.45E-03 | 4.58E-03 | 2.90E-03 | -- | -- | -- | -- | 3.59E-03 | 5.76E-02 | 1.00E-03 | 6.80E-04 | 1.16E-03 | -- | -- | 1.05E-01 |
| Chromium (Total) | 6.47E-05 | 3.94E-05 | 2.65E-06 | 1.93E-05 | -- | -- | -- | -- | 2.39E-05 | 3.84E-04 | 6.69E-06 | 1.15E-04 | 7.70E-06 | -- | -- | 8.27E-04 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 1.39E-02 | 8.44E-03 | 5.68E-04 | 4.14E-03 | -- | -- | -- | -- | 5.12E-03 | 8.23E-02 | 3.66E-03 | 9.71E-04 | 1.65E-03 | -- | -- | 1.77E-01 |
| Lead | 1.05E-02 | 6.39E-03 | 5.59E-04 | 3.13E-03 | -- | -- | -- | -- | 3.88E-03 | 6.23E-02 | 1.09E-03 | 7.35E-04 | 1.25E-03 | -- | -- | 1.89E-01 |
| Mercury - Inorganic | 3.88E-03 | 1.97E-03 | 1.33E-04 | 9.65E-04 | -- | -- | -- | -- | 1.20E-03 | 1.92E-02 | 3.35E-04 | 2.27E-04 | 3.85E-04 | -- | -- | 3.09E-02 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | 5.98E-03 | 2.96E-03 | 1.99E-04 | 2.46E-03 | -- | -- | -- | -- | 1.79E-03 | 2.88E-02 | 5.02E-04 | 4.08E-04 | 5.78E-04 | -- | -- | 5.14E-02 |
| Phosphorus | 4.91E-05 | 4.03E-05 | 1.46E-06 | 1.05E-05 | -- | -- | -- | -- | 2.91E-05 | 3.28E-04 | 9.20E-06 | 1.98E-05 | 1.41E-05 | -- | -- | 5.02E-04 |
| Selenium | 8.67E-03 | 6.38E-03 | 3.98E-04 | 2.32E-03 | -- | -- | -- | -- | 1.43E-02 | 4.61E-02 | 4.02E-03 | 3.81E-03 | 4.85E-03 | -- | -- | 9.30E-02 |
| Silver | 2.01E-03 | 1.30E-03 | 7.96E-05 | 5.79E-04 | -- | -- | -- | -- | 7.17E-04 | 1.15E-02 | 2.01E-04 | 1.36E-04 | 2.31E-04 | -- | -- | 1.73E-02 |
| Thallium | 1.21E-01 | 7.39E-02 | 4.97E-03 | 3.62E-02 | -- | -- | -- | -- | 4.48E-02 | 7.20E-01 | 1.25E-02 | 8.49E-03 | 1.44E-02 | -- | -- | **1.17E+00** |
| Tin | 6.08E-04 | 1.22E-04 | 3.42E-05 | 3.67E-04 | -- | -- | -- | -- | 5.98E-05 | 9.60E-04 | 1.67E-05 | 1.13E-05 | 1.93E-05 | -- | -- | 2.58E-03 |
| Vanadium | 1.08E-02 | 6.57E-03 | 4.42E-04 | 3.22E-03 | -- | -- | -- | -- | 3.98E-03 | 6.40E-02 | 1.12E-03 | 7.55E-04 | 1.28E-03 | -- | -- | 1.27E-01 |
| Zinc | 1.76E-02 | 1.34E-02 | 5.08E-04 | 3.96E-03 | -- | -- | -- | -- | 2.43E-02 | 6.70E-02 | 4.48E-03 | 3.47E-03 | 4.85E-03 | -- | -- | 1.42E-01 |

**Hazard Quotients for a Day Care Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.97E-06 | 8.49E-07 | 5.85E-07 | -- | 1.53E-07 | 4.40E-08 | 6.79E-08 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.95E-07 | 1.70E-07 | 1.17E-07 | -- | 4.45E-08 | 1.28E-08 | 1.97E-08 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.96E-06 | 1.27E-06 | 8.78E-07 | -- | 2.30E-07 | 6.61E-08 | 1.02E-07 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.92E-03 | 2.55E-03 | 1.76E-03 | -- | 3.22E-04 | 9.25E-05 | 1.43E-04 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.82E-03 | 7.81E-04 | 5.38E-04 | -- | 2.12E-05 | 6.08E-06 | 9.37E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 9.48E-09 | 4.07E-09 | 2.81E-09 | -- | 7.36E-10 | 2.11E-10 | 3.26E-10 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.37E-06 | 1.02E-06 | 7.02E-07 | -- | 1.01E-07 | 2.91E-08 | 4.48E-08 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.38E-05 | 1.45E-05 | 1.00E-05 | -- | 1.31E-05 | 3.78E-06 | 5.82E-06 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.37E-06 | 1.02E-06 | 7.02E-07 | -- | 9.20E-08 | 2.64E-08 | 4.07E-08 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.58E-07 | 6.79E-08 | 4.68E-08 | -- | 1.23E-08 | 3.52E-09 | 5.43E-09 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.13E-04 | 4.85E-05 | 3.34E-05 | -- | 4.38E-06 | 1.26E-06 | 1.94E-06 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.48E-04 | 6.37E-05 | 4.39E-05 | -- | 4.60E-06 | 1.32E-06 | 2.04E-06 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.10E-07 | 4.74E-08 | 3.27E-08 | -- | 4.28E-09 | 1.23E-09 | 1.90E-09 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.74E-05 | 2.04E-05 | 1.40E-05 | -- | 2.39E-06 | 6.87E-07 | 1.06E-06 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.37E-05 | 1.02E-05 | 7.02E-06 | -- | 9.20E-08 | 2.64E-08 | 4.07E-08 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.74E-07 | 2.04E-07 | 1.40E-07 | -- | 2.02E-08 | 5.81E-09 | 8.96E-09 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.92E-03 | 2.55E-03 | 1.76E-03 | -- | 2.30E-04 | 6.61E-05 | 1.02E-04 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.32E-02 | 2.72E-02 | 1.87E-02 | -- | 7.36E-04 | 2.11E-04 | 3.26E-04 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.05E-03 | 4.54E-04 | 3.13E-04 | -- | 4.10E-05 | 1.18E-05 | 1.81E-05 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 8.29E-04 | 3.56E-04 | 2.46E-04 | -- | 9.66E-06 | 2.77E-06 | 4.28E-06 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.57E-04 | 6.73E-05 | 4.64E-05 | -- | 6.08E-06 | 1.75E-06 | 2.69E-06 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.37E-03 | 1.02E-03 | 7.02E-04 | -- | 1.29E-04 | 3.70E-05 | 5.70E-05 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.50E-05 | 1.51E-05 | 1.04E-05 | -- | 5.44E-07 | 1.56E-07 | 2.41E-07 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.18E-02 | 5.09E-03 | 3.51E-03 | -- | 4.60E-04 | 1.32E-04 | 2.04E-04 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.17E-02 | 9.31E-03 | 6.42E-03 | -- | 5.05E-05 | 1.45E-05 | 2.23E-05 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.53E-04 | 2.38E-04 | 1.64E-04 | -- | 1.07E-05 | 3.08E-06 | 4.75E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.45E-03 | 6.24E-04 | 4.30E-04 | -- | 1.97E-04 | 5.67E-05 | 8.73E-05 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.36E-08 | 3.70E-08 | -- | 4.85E-09 | 1.39E-09 | 2.15E-09 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.74E-04 | 2.04E-04 | 1.40E-04 | -- | 3.68E-07 | 1.06E-07 | 1.63E-07 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 9.48E-05 | 4.07E-05 | 2.81E-05 | -- | 9.20E-06 | 2.64E-06 | 4.07E-06 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.96E-02 | 1.27E-02 | 8.78E-03 | -- | 1.15E-04 | 3.30E-05 | 5.09E-05 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.90E-05 | 3.39E-05 | 2.34E-05 | -- | 3.07E-06 | 8.81E-07 | 1.36E-06 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.34E-03 | 3.16E-03 | 2.18E-03 | -- | 2.85E-04 | 8.19E-05 | 1.26E-04 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.24E-04 | 2.68E-04 | 1.85E-04 | -- | 4.85E-06 | 1.39E-06 | 2.15E-06 | -- |

**Hazard Quotients for a Day Care Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-06 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59E-07 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.51E-06 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-08 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.26E-06 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.12E-05 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.25E-06 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.94E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-04 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-04 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-07 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.59E-05 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-05 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.53E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-02 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-01 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-03 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-03 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-04 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.31E-03 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-02 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-02 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.73E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-03 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.19E-04 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-04 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.13E-02 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-04 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-02 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-03 |

**Hazard Quotients for a Recreation User - Sport Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.48E-07 | -- | -- | -- | 1.15E-08 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.95E-08 | -- | -- | -- | 3.33E-09 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.21E-07 | -- | -- | -- | 1.72E-08 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.43E-04 | -- | -- | -- | 2.41E-05 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.36E-04 | -- | -- | -- | 1.58E-06 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 7.08E-10 | -- | -- | -- | 5.50E-11 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.77E-07 | -- | -- | -- | 7.57E-09 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.53E-06 | -- | -- | -- | 9.83E-07 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.77E-07 | -- | -- | -- | 6.88E-09 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.18E-08 | -- | -- | -- | 9.17E-10 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.43E-06 | -- | -- | -- | 3.28E-07 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.11E-05 | -- | -- | -- | 3.44E-07 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 8.24E-09 | -- | -- | -- | 3.20E-10 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.54E-06 | -- | -- | -- | 1.79E-07 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.77E-06 | -- | -- | -- | 6.88E-09 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.54E-08 | -- | -- | -- | 1.51E-09 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.43E-04 | -- | -- | -- | 1.72E-05 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.72E-03 | -- | -- | -- | 5.50E-05 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.89E-05 | -- | -- | -- | 3.06E-06 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 6.20E-05 | -- | -- | -- | 7.22E-07 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.17E-05 | -- | -- | -- | 4.55E-07 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.77E-04 | -- | -- | -- | 9.63E-06 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.62E-06 | -- | -- | -- | 4.07E-08 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.86E-04 | -- | -- | -- | 3.44E-05 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.62E-03 | -- | -- | -- | 3.77E-06 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.13E-05 | -- | -- | -- | 8.03E-07 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.08E-04 | -- | -- | -- | 1.48E-05 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 9.33E-09 | -- | -- | -- | 3.62E-10 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.54E-05 | -- | -- | -- | 2.75E-08 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.08E-06 | -- | -- | -- | 6.88E-07 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.21E-03 | -- | -- | -- | 8.60E-06 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.90E-06 | -- | -- | -- | 2.29E-07 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 5.49E-04 | -- | -- | -- | 2.13E-05 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.66E-05 | -- | -- | -- | 3.62E-07 | -- | -- | -- |

**Hazard Quotients for a Recreation User - Sport Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-07 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-08 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-07 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-10 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-07 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.51E-06 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-07 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.76E-06 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-05 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.56E-09 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-06 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-06 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.60E-04 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.78E-03 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.19E-05 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-05 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-05 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-04 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-06 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.20E-04 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-03 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.21E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-04 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.69E-09 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.55E-05 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.77E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.13E-06 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.70E-04 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-05 |

**Hazard Quotients for a Recreation User - Camping Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.87E-07 | -- | -- | -- | 3.01E-08 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.75E-08 | -- | -- | -- | 8.73E-09 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 5.81E-07 | -- | -- | -- | 4.52E-08 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.16E-03 | -- | -- | -- | 6.32E-05 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.56E-04 | -- | -- | -- | 4.15E-06 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.86E-09 | -- | -- | -- | 1.44E-10 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.65E-07 | -- | -- | -- | 1.99E-08 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.64E-06 | -- | -- | -- | 2.58E-06 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.65E-07 | -- | -- | -- | 1.81E-08 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.10E-08 | -- | -- | -- | 2.41E-09 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.21E-05 | -- | -- | -- | 8.60E-07 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.91E-05 | -- | -- | -- | 9.03E-07 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.16E-08 | -- | -- | -- | 8.40E-10 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.30E-06 | -- | -- | -- | 4.70E-07 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.65E-06 | -- | -- | -- | 1.81E-08 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 9.30E-08 | -- | -- | -- | 3.97E-09 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.16E-03 | -- | -- | -- | 4.52E-05 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.24E-02 | -- | -- | -- | 1.44E-04 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.07E-04 | -- | -- | -- | 8.04E-06 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.63E-04 | -- | -- | -- | 1.90E-06 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.07E-05 | -- | -- | -- | 1.19E-06 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.65E-04 | -- | -- | -- | 2.53E-05 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.87E-06 | -- | -- | -- | 1.07E-07 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.32E-03 | -- | -- | -- | 9.03E-05 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.25E-03 | -- | -- | -- | 9.91E-06 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.08E-04 | -- | -- | -- | 2.11E-06 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.85E-04 | -- | -- | -- | 3.87E-05 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.45E-08 | -- | -- | -- | 9.51E-10 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 9.30E-05 | -- | -- | -- | 7.22E-08 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.86E-05 | -- | -- | -- | 1.81E-06 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.81E-03 | -- | -- | -- | 2.26E-05 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.55E-05 | -- | -- | -- | 6.02E-07 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.44E-03 | -- | -- | -- | 5.60E-05 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.22E-04 | -- | -- | -- | 9.51E-07 | -- | -- | -- |

**Hazard Quotients for a Recreation User - Camping Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.18E-07 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.62E-08 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.26E-07 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-09 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-07 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.22E-06 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.83E-07 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.34E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-05 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-05 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-08 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.77E-06 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-06 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.70E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-03 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-02 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-04 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-04 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-05 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-04 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.98E-06 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-03 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.26E-03 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.23E-04 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-08 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.31E-05 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-05 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-05 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-03 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-04 |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | 2.32E-07 | -- | -- | -- | -- | -- | 1.68E-07 | -- | 4.01E-07 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | 4.65E-08 | -- | -- | -- | -- | -- | 5.51E-08 | -- | 1.02E-07 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | 6.97E-07 | -- | -- | -- | -- | -- | 5.27E-07 | -- | 1.22E-06 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | 1.39E-03 | -- | -- | -- | -- | -- | 2.68E-02 | -- | 2.82E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | 1.97E-03 | -- | -- | -- | -- | -- | 6.08E-04 | -- | 2.57E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | 3.49E-07 | -- | -- | -- | -- | -- | -- | -- | 3.49E-07 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | 3.49E-05 | -- | -- | -- | -- | -- | 7.01E-07 | -- | 3.56E-05 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | 9.96E-04 | -- | -- | -- | -- | -- | -- | -- | 9.96E-04 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | 6.97E-05 | -- | -- | -- | -- | -- | -- | -- | 6.97E-05 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | 4.65E-06 | -- | -- | -- | -- | -- | -- | -- | 4.65E-06 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 3.32E-04 | -- | -- | -- | -- | -- | 2.92E-04 | -- | 6.24E-04 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 4.36E-04 | -- | -- | -- | -- | -- | 1.56E-04 | -- | 5.91E-04 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.62E-06 | -- | -- | -- | -- | -- | 5.55E-07 | -- | 2.18E-06 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.39E-04 | -- | -- | -- | -- | -- | 6.00E-04 | -- | 7.40E-04 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 6.97E-05 | -- | -- | -- | -- | -- | 4.53E-06 | -- | 7.43E-05 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | 2.32E-06 | -- | -- | -- | -- | -- | 1.84E-06 | -- | 4.17E-06 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | 1.74E-02 | -- | -- | -- | -- | -- | 3.56E-04 | -- | 1.78E-02 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | 9.30E-03 | -- | -- | -- | -- | -- | 1.90E-04 | -- | 9.49E-03 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 6.28E-04 | -- | -- | -- | -- | -- | 1.28E-05 | -- | 6.40E-04 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 6.97E-04 | -- | -- | -- | -- | -- | 1.42E-05 | -- | 7.12E-04 |
| Boron | -- | -- | -- | -- | -- | -- | -- | 4.18E-04 | -- | -- | -- | -- | -- | 8.55E-06 | -- | 4.27E-04 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | 2.79E-04 | -- | -- | -- | -- | -- | 5.70E-06 | -- | 2.85E-04 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | 5.58E-06 | -- | -- | -- | -- | -- | 1.14E-07 | -- | 5.69E-06 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | 1.39E-02 | -- | -- | -- | -- | -- | 5.70E-04 | -- | 1.45E-02 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | 4.98E-04 | -- | -- | -- | -- | -- | 4.07E-06 | -- | 5.02E-04 |
| Lead | -- | -- | -- | -- | -- | -- | -- | 7.54E-04 | -- | -- | -- | -- | -- | 5.27E-06 | -- | 7.59E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | 4.65E-04 | -- | -- | -- | -- | -- | 9.50E-06 | -- | 4.74E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | 4.18E-04 | -- | -- | -- | -- | -- | 1.71E-06 | -- | 4.20E-04 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | 1.56E-08 | -- | -- | -- | -- | -- | -- | -- | 1.56E-08 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | 1.39E-03 | -- | -- | -- | -- | -- | 2.85E-05 | -- | 1.42E-03 |
| Silver | -- | -- | -- | -- | -- | -- | -- | 2.79E-05 | -- | -- | -- | -- | -- | 3.42E-07 | -- | 2.82E-05 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | 5.23E-03 | -- | -- | -- | -- | -- | 1.07E-04 | -- | 5.34E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 4.65E-06 | -- | -- | -- | -- | -- | 9.50E-08 | -- | 4.74E-06 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | 1.24E-03 | -- | -- | -- | -- | -- | 2.53E-05 | -- | 1.27E-03 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | 2.09E-04 | -- | -- | -- | -- | -- | 2.56E-06 | -- | 2.12E-04 |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Baseline Case**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | 6.67E-06 | -- | 6.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-05 |
| Anthracene | -- | -- | -- | -- | 1.33E-06 | -- | 3.41E-07 | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-06 |
| Fluorene | -- | -- | -- | -- | 1.00E-05 | -- | 1.10E-05 | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-05 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | 5.00E-01 | -- | 1.71E-01 | -- | -- | -- | -- | -- | -- | -- | -- | **6.71E-01** |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | 2.56E-01 | -- | 1.21E-01 | -- | -- | -- | -- | -- | -- | -- | -- | **3.77E-01** |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | 4.76E-02 | -- | 1.62E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 6.39E-02 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | -- | -- | -- | 2.00E-02 | -- | 6.82E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-02 |
| Pentachlorobenzene | -- | -- | -- | -- | 1.00E-02 | -- | 3.41E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-02 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | 2.50E-02 | -- | 8.53E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-02 |
| Arsenic | -- | -- | -- | -- | 2.40E-01 | -- | 1.89E-01 | -- | -- | -- | -- | -- | -- | -- | -- | **4.29E-01** |
| Barium | -- | -- | -- | -- | 2.60E-02 | -- | 4.15E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-02 |
| Beryllium | -- | -- | -- | -- | 5.00E-02 | -- | 1.71E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 6.71E-02 |
| Boron | -- | -- | -- | -- | 3.00E-02 | -- | 1.02E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 4.02E-02 |
| Cadmium | -- | -- | -- | -- | 4.50E-01 | -- | 1.47E-02 | -- | -- | -- | -- | -- | -- | -- | -- | **4.65E-01** |
| Chromium (Total) | -- | -- | -- | -- | 1.15E-04 | -- | 7.51E-05 | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-04 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | 3.57E-02 | -- | 6.82E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 4.25E-02 |
| Lead | -- | -- | -- | -- | 2.38E-02 | -- | 1.29E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-02 |
| Mercury - Inorganic | -- | -- | -- | -- | 6.67E-03 | -- | 1.06E-01 | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-01 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 1.56E-02 | -- | 8.19E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-02 |
| Phosphorus | -- | -- | -- | -- | 6.12E-04 | -- | 1.45E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 7.58E-04 |
| Selenium | -- | -- | -- | -- | 6.80E-02 | -- | 8.74E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-01 |
| Silver | -- | -- | -- | -- | 2.00E-03 | -- | 6.82E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-03 |
| Thallium | -- | -- | -- | -- | 1.25E-01 | -- | 4.27E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-01 |
| Tin | -- | -- | -- | -- | 3.20E-04 | -- | 5.69E-05 | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-04 |
| Vanadium | -- | -- | -- | -- | 1.22E-02 | -- | 7.96E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-02 |
| Zinc | -- | -- | -- | -- | 9.93E-02 | -- | 4.36E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-01 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion-Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.80E-07 | 7.73E-08 | 1.08E-08 | -- | 1.04E-07 | 2.52E-08 | 4.02E-08 | -- | 1.77E-06 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 8.72E-11 | 3.75E-11 | 5.23E-12 | -- | 2.77E-11 | 6.72E-12 | 1.07E-11 | -- | 1.28E-07 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 7.17E-10 | 3.08E-10 | 4.30E-11 | -- | 4.14E-10 | 1.00E-10 | 1.61E-10 | -- | 1.06E-06 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 8.27E-10 | 3.56E-10 | 4.96E-11 | -- | 2.39E-10 | 5.80E-11 | 9.26E-11 | -- | 6.09E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 4.58E-09 | 1.97E-09 | 2.75E-10 | -- | 1.72E-09 | 4.17E-10 | 6.66E-10 | -- | 2.02E-06 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 7.94E-11 | 3.42E-11 | 4.77E-12 | -- | 2.53E-11 | 6.12E-12 | 9.78E-12 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.62E-06 | 2.85E-06 | 3.97E-07 | -- | 5.74E-07 | 1.39E-07 | 2.22E-07 | -- | 3.66E-06 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.88E-07 | 2.45E-08 | 1.63E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-06 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | 1.11E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-07 |
| Carbon Tetrachloride | -- | -- | 9.09E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-06 |
| Dichloromethane | -- | -- | 5.25E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-06 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 9.85E-07 | 1.28E-07 | 1.16E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.31E-06 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.78E-06 | 2.55E-07 | 2.10E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-05 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.80E-07 | 7.73E-08 | 1.08E-08 | -- | 1.04E-07 | 2.52E-08 | 4.02E-08 | -- | 3.19E-06 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 8.72E-11 | 3.75E-11 | 5.23E-12 | -- | 2.77E-11 | 6.72E-12 | 1.07E-11 | -- | 2.31E-07 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 7.17E-10 | 3.08E-10 | 4.30E-11 | -- | 4.14E-10 | 1.00E-10 | 1.61E-10 | -- | 1.90E-06 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 8.27E-10 | 3.56E-10 | 4.96E-11 | -- | 2.39E-10 | 5.80E-11 | 9.26E-11 | -- | 1.10E-06 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 4.58E-09 | 1.97E-09 | 2.75E-10 | -- | 1.72E-09 | 4.17E-10 | 6.66E-10 | -- | 3.65E-06 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 7.94E-11 | 3.42E-11 | 4.77E-12 | -- | 2.53E-11 | 6.12E-12 | 9.78E-12 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.62E-06 | 2.85E-06 | 3.97E-07 | -- | 5.74E-07 | 1.39E-07 | 2.22E-07 | -- | 6.59E-06 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 4.16E-07 | 3.99E-08 | 4.60E-06 | -- | -- | -- | -- | 9.01E-07 | 5.73E-06 | 3.07E-07 | 1.55E-07 | 2.50E-07 | -- | 1.60E-05 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | 3.13E-07 | -- | -- | -- | -- | 4.49E-07 | 2.86E-05 | 2.04E-06 | 3.08E-06 | 1.24E-06 | -- | 3.59E-05 |
| Carbon Tetrachloride | -- | -- | 2.57E-06 | -- | -- | -- | -- | 3.69E-06 | 2.35E-04 | 1.68E-05 | 2.54E-05 | 1.02E-05 | -- | 2.96E-04 |
| Dichloromethane | -- | -- | 1.48E-06 | -- | -- | -- | -- | 2.13E-06 | 1.36E-04 | 9.70E-06 | 1.46E-05 | 5.91E-06 | -- | 1.71E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.18E-06 | 2.09E-07 | 3.28E-06 | -- | -- | -- | -- | 4.72E-06 | 3.00E-05 | 1.07E-06 | 8.10E-07 | 1.31E-06 | -- | 4.72E-05 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 3.94E-06 | 4.16E-07 | 5.93E-06 | -- | -- | -- | -- | 8.52E-06 | 5.42E-05 | 1.94E-06 | 1.61E-06 | 2.36E-06 | -- | 9.64E-05 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.94E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.32E-08 | 1.43E-08 | -- | -- | 2.46E-08 | 5.90E-09 | 9.45E-09 | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.61E-11 | 6.92E-12 | -- | -- | 6.57E-12 | 1.57E-12 | 2.52E-12 | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.32E-10 | 5.69E-11 | -- | -- | 9.83E-11 | 2.35E-11 | 3.77E-11 | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.53E-10 | 6.57E-11 | -- | -- | 5.67E-11 | 1.36E-11 | 2.18E-11 | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 8.45E-10 | 3.63E-10 | -- | -- | 4.08E-10 | 9.76E-11 | 1.56E-10 | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.47E-11 | 6.30E-12 | -- | -- | 5.99E-12 | 1.43E-12 | 2.30E-12 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.61E-01 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.22E-06 | 5.25E-07 | -- | -- | 1.36E-07 | 3.26E-08 | 5.22E-08 | -- | -- |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.74E-08 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-11 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-10 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.10E-10 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-06 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 4.48E-09 | -- | -- | -- | 2.59E-09 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.17E-12 | -- | -- | -- | 6.91E-13 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.79E-11 | -- | -- | -- | 1.03E-11 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.06E-11 | -- | -- | -- | 5.96E-12 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.14E-10 | -- | -- | -- | 4.29E-11 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.98E-12 | -- | -- | -- | 6.29E-13 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.65E-07 | -- | -- | -- | 1.43E-08 | -- | -- | -- | -- |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.07E-09 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-11 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-07 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.18E-08 | -- | -- | -- | 6.80E-09 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 5.70E-12 | -- | -- | -- | 1.81E-12 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.69E-11 | -- | -- | -- | 2.71E-11 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.41E-11 | -- | -- | -- | 1.56E-11 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.00E-10 | -- | -- | -- | 1.13E-10 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.20E-12 | -- | -- | -- | 1.65E-12 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.33E-07 | -- | -- | -- | 3.75E-08 | -- | -- | -- | -- |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-08 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.51E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.40E-11 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.98E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.12E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.85E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.71E-07 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | 6.41E-08 | -- | -- | -- | -- | -- | 9.99E-08 | 1.64E-07 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | 3.21E-09 | -- | -- | -- | -- | -- | -- | 3.21E-09 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | 5.28E-08 | -- | -- | -- | -- | -- | 4.99E-08 | 1.03E-07 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | 9.13E-09 | -- | -- | -- | -- | -- | 2.59E-09 | 1.17E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | 3.37E-08 | -- | -- | -- | -- | -- | -- | 3.37E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | 9.74E-10 | -- | -- | -- | -- | -- | 3.74E-10 | 1.35E-09 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | 2.44E-06 | -- | -- | -- | -- | -- | 5.89E-08 | 2.49E-06 |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor LCR | Soil/Dust Ingestion - Winter - Outdoor LCR | Dust Ingestion - Summer - Indoor LCR | Dust Ingestion - Winter - Indoor LCR | Soil/Dust Dermal - Summer - Outdoor LCR | Soil/Dust Dermal - Winter - Outdoor LCR | Dust Dermal - Summer - Indoor LCR | Dust Dermal - Winter - Indoor LCR | Ingestion - Aboveground Garden Produce LCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Lifetime Cancer Risk for a Resident Receptor Exposed to COPC from the Project - Composite**
**Baseline Case**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR | LCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | 3.17E-06 | -- | 4.36E-07 | -- | -- | -- | -- | -- | -- | -- | 3.60E-06 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | 8.29E-06 | -- | 1.51E-06 | -- | -- | -- | -- | -- | -- | -- | 9.80E-06 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | 1.08E-04 | -- | 4.53E-05 | -- | -- | -- | -- | -- | -- | -- | 1.53E-04 |

# APPENDIX I-6

Multi-Pathway Results – Normal Operations (Project Alone Case) – 140,000 tpy

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.50E-12 | 1.07E-12 | 5.88E-13 | -- | 8.84E-13 | 2.76E-13 | 4.26E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.93E-13 | 2.12E-13 | 1.16E-13 | -- | 2.53E-13 | 7.88E-14 | 1.22E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.72E-12 | 1.60E-12 | 8.77E-13 | -- | 1.32E-12 | 4.11E-13 | 6.35E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.40E-06 | 6.01E-07 | 3.29E-07 | -- | 3.47E-07 | 1.08E-07 | 1.67E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.36E-05 | 5.85E-06 | 3.21E-06 | -- | 7.23E-07 | 2.25E-07 | 3.48E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.28E-17 | 1.84E-17 | 1.01E-17 | -- | 1.52E-17 | 4.73E-18 | 7.31E-18 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.62E-14 | 6.98E-15 | 3.82E-15 | -- | 3.16E-15 | 9.86E-16 | 1.52E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.33E-14 | 1.43E-14 | 7.83E-15 | -- | 5.89E-14 | 1.84E-14 | 2.84E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.83E-15 | 1.65E-15 | 9.03E-16 | -- | 6.79E-16 | 2.12E-16 | 3.27E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.90E-15 | 2.54E-15 | 1.39E-15 | -- | 2.09E-15 | 6.52E-16 | 1.01E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.20E-10 | 1.38E-10 | 7.55E-11 | -- | 5.67E-11 | 1.77E-11 | 2.73E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.92E-13 | 4.26E-13 | 2.33E-13 | -- | 1.40E-13 | 4.38E-14 | 6.77E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.96E-14 | 2.13E-14 | 1.17E-14 | -- | 8.79E-15 | 2.74E-15 | 4.23E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.78E-11 | 2.49E-11 | 1.36E-11 | -- | 1.33E-11 | 4.15E-12 | 6.41E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.05E-09 | 4.50E-10 | 2.46E-10 | -- | 1.85E-11 | 5.77E-12 | 8.93E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.20E-11 | 3.52E-11 | 1.93E-11 | -- | 1.60E-11 | 4.98E-12 | 7.69E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.48E-07 | 4.08E-07 | 2.23E-07 | -- | 1.68E-07 | 5.23E-08 | 8.09E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.39E-08 | 2.95E-08 | -- | 6.66E-09 | 2.08E-09 | 3.21E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.33E-09 | 5.74E-10 | 3.14E-10 | -- | 2.36E-10 | 7.37E-11 | 1.14E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.20E-07 | 5.14E-08 | 2.81E-08 | -- | 6.35E-09 | 1.98E-09 | 3.06E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.38E-09 | 3.17E-09 | 1.74E-09 | -- | 1.31E-09 | 4.07E-10 | 6.29E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.15E-06 | 1.35E-06 | 7.42E-07 | -- | 7.81E-07 | 2.43E-07 | 3.76E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.83E-11 | 3.79E-11 | 2.08E-11 | -- | 6.25E-12 | 1.95E-12 | 3.01E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.88E-08 | 8.10E-09 | 4.43E-09 | -- | 3.00E-09 | 9.35E-10 | 1.45E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.73E-07 | 2.46E-07 | 1.35E-07 | -- | 1.01E-07 | 3.16E-08 | 4.89E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.98E-05 | 8.51E-06 | 4.66E-06 | -- | 2.10E-07 | 6.55E-08 | 1.01E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.65E-06 | 3.72E-06 | 2.04E-06 | -- | 7.65E-07 | 2.39E-07 | 3.69E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.79E-07 | 2.06E-07 | 1.13E-07 | -- | 1.70E-07 | 5.29E-08 | 8.18E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.59E-07 | 3.69E-07 | 2.02E-07 | -- | 5.32E-07 | 1.66E-07 | 2.57E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.60E-14 | 1.55E-14 | 8.48E-15 | -- | 6.37E-15 | 1.99E-15 | 3.07E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.52E-09 | 6.52E-10 | 3.57E-10 | -- | 5.37E-12 | 1.67E-12 | 2.59E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.74E-08 | 7.48E-09 | 4.10E-09 | -- | 7.70E-09 | 2.40E-09 | 3.71E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.04E-04 | 4.49E-05 | 2.46E-05 | -- | 1.85E-06 | 5.76E-07 | 8.90E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.02E-08 | 1.30E-08 | 7.10E-09 | -- | 5.34E-09 | 1.66E-09 | 2.57E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.60E-08 | 4.13E-08 | 2.26E-08 | -- | 1.70E-08 | 5.30E-09 | 8.19E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.39E-08 | 2.95E-08 | -- | 4.44E-09 | 1.39E-09 | 2.14E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.38E-13 | 6.58E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-13 | 1.45E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.68E-13 | 9.53E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.26E-05 | 7.56E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-04 | 6.89E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-17 | 1.11E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-15 | 3.38E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-14 | 1.80E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-16 | 8.04E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-15 | 1.51E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-10 | 9.66E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-13 | 2.25E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-14 | 1.29E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.41E-11 | 1.94E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.61E-10 | 2.54E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.16E-09 | 5.33E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.14E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.28E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.98E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-07 |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.27E-12 | 3.56E-12 | 8.17E-13 | -- | 6.43E-13 | 1.85E-13 | 2.84E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-12 | 7.01E-13 | 1.61E-13 | -- | 1.84E-13 | 5.28E-14 | 8.14E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.23E-11 | 5.30E-12 | 1.22E-12 | -- | 9.58E-13 | 2.75E-13 | 4.24E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.63E-06 | 1.99E-06 | 4.58E-07 | -- | 2.52E-07 | 7.24E-08 | 1.12E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.51E-05 | 1.94E-05 | 4.46E-06 | -- | 5.26E-07 | 1.51E-07 | 2.33E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.42E-16 | 6.10E-17 | 1.40E-17 | -- | 1.10E-17 | 3.16E-18 | 4.88E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.38E-14 | 2.31E-14 | 5.32E-15 | -- | 2.30E-15 | 6.60E-16 | 1.02E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.10E-13 | 4.74E-14 | 1.09E-14 | -- | 4.28E-14 | 1.23E-14 | 1.90E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.27E-14 | 5.46E-15 | 1.25E-15 | -- | 4.93E-16 | 1.42E-16 | 2.18E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.96E-14 | 8.41E-15 | 1.93E-15 | -- | 1.52E-15 | 4.36E-16 | 6.73E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.06E-09 | 4.56E-10 | 1.05E-10 | -- | 4.12E-11 | 1.18E-11 | 1.83E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.29E-12 | 1.41E-12 | 3.25E-13 | -- | 1.02E-13 | 2.93E-14 | 4.52E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.64E-13 | 7.07E-14 | 1.62E-14 | -- | 6.39E-15 | 1.83E-15 | 2.83E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.92E-10 | 8.23E-11 | 1.89E-11 | -- | 9.67E-12 | 2.78E-12 | 4.28E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.47E-09 | 1.49E-09 | 3.42E-10 | -- | 1.35E-11 | 3.87E-12 | 5.96E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.72E-10 | 1.17E-10 | 2.68E-11 | -- | 1.16E-11 | 3.33E-12 | 5.14E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.14E-06 | 1.35E-06 | 3.10E-07 | -- | 1.22E-07 | 3.50E-08 | 5.40E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.15E-07 | 1.79E-07 | 4.10E-08 | -- | 4.84E-09 | 1.39E-09 | 2.14E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.42E-09 | 1.90E-09 | 4.37E-10 | -- | 1.72E-10 | 4.93E-11 | 7.61E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.96E-07 | 1.70E-07 | 3.91E-08 | -- | 4.61E-09 | 1.33E-09 | 2.04E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.44E-08 | 1.05E-08 | 2.41E-09 | -- | 9.50E-10 | 2.73E-10 | 4.20E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.04E-05 | 4.49E-06 | 1.03E-06 | -- | 5.68E-07 | 1.63E-07 | 2.51E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.92E-10 | 1.26E-10 | 2.89E-11 | -- | 4.54E-12 | 1.31E-12 | 2.01E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.24E-08 | 2.68E-08 | 6.16E-09 | -- | 2.18E-09 | 6.26E-10 | 9.66E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.90E-06 | 8.16E-07 | 1.87E-07 | -- | 7.37E-08 | 2.12E-08 | 3.26E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.56E-05 | 2.82E-05 | 6.48E-06 | -- | 1.53E-07 | 4.39E-08 | 6.77E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.86E-05 | 1.23E-05 | 2.83E-06 | -- | 5.56E-07 | 1.60E-07 | 2.46E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.59E-06 | 6.82E-07 | 1.57E-07 | -- | 1.23E-07 | 3.54E-08 | 5.46E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.85E-06 | 1.22E-06 | 2.81E-07 | -- | 3.87E-07 | 1.11E-07 | 1.71E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.19E-13 | 5.13E-14 | 1.18E-14 | -- | 4.63E-15 | 1.33E-15 | 2.05E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.02E-09 | 2.16E-09 | 4.96E-10 | -- | 3.90E-12 | 1.12E-12 | 1.73E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.76E-08 | 2.48E-08 | 5.69E-09 | -- | 5.60E-09 | 1.61E-09 | 2.48E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.46E-04 | 1.49E-04 | 3.41E-05 | -- | 1.34E-06 | 3.86E-07 | 5.95E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.99E-08 | 4.30E-08 | 9.87E-09 | -- | 3.88E-09 | 1.11E-09 | 1.72E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.18E-07 | 1.37E-07 | 3.14E-08 | -- | 1.24E-08 | 3.55E-09 | 5.47E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.16E-07 | 1.79E-07 | 4.11E-08 | -- | 3.23E-09 | 9.28E-10 | 1.43E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.53E-11 | 6.71E-11 | 6.03E-12 | 2.58E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-10 |
| Anthracene | 4.01E-12 | 5.95E-12 | 8.43E-15 | 4.59E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-11 |
| Fluorene | 4.52E-11 | 6.72E-11 | 8.02E-14 | 1.29E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 8.00E-07 | 1.18E-06 | 1.52E-07 | 3.79E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.66E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.11E-05 | 7.71E-06 | 1.59E-06 | 7.21E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.09E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.10E-15 | 7.41E-15 | 4.31E-14 | 6.85E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-14 |
| Bromoform | 2.24E-12 | 3.34E-12 | 2.27E-12 | 6.30E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.94E-12 |
| Carbon Tetrachloride | 2.72E-12 | 3.86E-12 | 3.60E-11 | 7.00E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.29E-11 |
| Chloroform | 8.77E-13 | 1.29E-12 | 4.38E-12 | 6.61E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.58E-12 |
| Trichlorofluoromethane (FREON 11) | 7.03E-13 | 1.02E-12 | 5.45E-12 | 9.67E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.22E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.75E-09 | 2.60E-09 | 3.82E-09 | 4.33E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.86E-09 |
| 1,2,4-Trichlorobenzene | 1.57E-11 | 2.33E-11 | 8.73E-12 | 1.49E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.30E-11 |
| 1,2-Dichlorobenzene | 1.85E-12 | 2.66E-12 | 1.38E-11 | 3.54E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-11 |
| Hexachlorobenzene | 1.64E-10 | 2.41E-10 | 1.67E-10 | 1.24E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.83E-10 |
| Pentachlorobenzene | 3.49E-09 | 5.18E-09 | 2.19E-10 | 2.17E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-08 |
| Pentachlorophenol | 2.44E-08 | 4.46E-10 | 1.52E-08 | 1.37E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.42E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 6.14E-06 | 3.76E-06 | 3.23E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-05 |
| Arsenic | 8.04E-07 | 9.88E-08 | 1.14E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-06 |
| Barium | 9.17E-09 | 5.35E-09 | 2.28E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-08 |
| Beryllium | 1.14E-07 | 3.84E-08 | 2.04E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.67E-07 |
| Boron | 1.79E-06 | 2.07E-06 | 1.68E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-06 |
| Cadmium | 4.03E-05 | 4.90E-05 | 2.29E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-04 |
| Chromium (Total) | 8.27E-10 | 5.36E-11 | 4.51E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| Chromium VI | 1.76E-07 | 1.14E-08 | 9.63E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.88E-07 |
| Cobalt | 2.60E-06 | 6.17E-07 | 4.56E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.29E-06 |
| Lead | 3.68E-05 | 3.35E-05 | 2.02E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-04 |
| Mercury - Inorganic | 1.49E-05 | 1.56E-05 | 3.54E-06 | 1.82E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.06E-05 |
| Methyl Mercury | 3.03E-06 | 1.75E-06 | 5.39E-07 | 7.70E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.73E-06 |
| Nickel | 2.96E-06 | 9.95E-07 | 7.81E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.06E-06 |
| Phosphorus | 1.22E-11 | 1.57E-11 | 1.43E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-11 |
| Selenium | 5.31E-08 | 3.68E-09 | 3.79E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-08 |
| Silver | 5.54E-07 | 2.99E-07 | 1.98E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.70E-07 |
| Thallium | 2.64E-04 | 1.11E-05 | 4.74E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.07E-04 |
| Tin | 5.38E-08 | 3.40E-08 | 2.06E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.49E-07 |
| Vanadium | 9.48E-08 | 3.97E-08 | 3.27E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.45E-07 |
| Zinc | 1.37E-06 | 1.51E-06 | 1.28E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.81E-06 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.87E-12 | 8.05E-13 | 4.41E-13 | -- | 6.63E-13 | 2.07E-13 | 3.19E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.69E-13 | 1.59E-13 | 8.69E-14 | -- | 1.90E-13 | 5.91E-14 | 9.14E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.79E-12 | 1.20E-12 | 6.57E-13 | -- | 9.89E-13 | 3.08E-13 | 4.76E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.05E-06 | 4.49E-07 | 2.46E-07 | -- | 2.59E-07 | 8.08E-08 | 1.25E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.82E-06 | 4.22E-06 | 2.31E-06 | -- | 5.21E-07 | 1.63E-07 | 2.51E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.21E-17 | 1.38E-17 | 7.56E-18 | -- | 1.14E-17 | 3.54E-18 | 5.48E-18 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.22E-14 | 5.24E-15 | 2.87E-15 | -- | 2.37E-15 | 7.40E-16 | 1.14E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.49E-14 | 1.07E-14 | 5.87E-15 | -- | 4.42E-14 | 1.38E-14 | 2.13E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.87E-15 | 1.24E-15 | 6.77E-16 | -- | 5.09E-16 | 1.59E-16 | 2.45E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.43E-15 | 1.90E-15 | 1.04E-15 | -- | 1.57E-15 | 4.89E-16 | 7.56E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.40E-10 | 1.03E-10 | 5.66E-11 | -- | 4.26E-11 | 1.33E-11 | 2.05E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 7.44E-13 | 3.20E-13 | 1.75E-13 | -- | 1.05E-13 | 3.28E-14 | 5.08E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.72E-14 | 1.60E-14 | 8.76E-15 | -- | 6.59E-15 | 2.05E-15 | 3.18E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.34E-11 | 1.86E-11 | 1.02E-11 | -- | 9.98E-12 | 3.11E-12 | 4.81E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.84E-10 | 3.37E-10 | 1.85E-10 | -- | 1.39E-11 | 4.33E-12 | 6.69E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 6.15E-11 | 2.64E-11 | 1.45E-11 | -- | 1.20E-11 | 3.73E-12 | 5.77E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 6.86E-07 | 2.95E-07 | 1.61E-07 | -- | 1.21E-07 | 3.78E-08 | 5.85E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.07E-08 | 3.90E-08 | 2.14E-08 | -- | 4.82E-09 | 1.50E-09 | 2.32E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.65E-10 | 4.15E-10 | 2.27E-10 | -- | 1.71E-10 | 5.33E-11 | 8.24E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 8.64E-08 | 3.71E-08 | 2.03E-08 | -- | 4.59E-09 | 1.43E-09 | 2.21E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.34E-09 | 2.29E-09 | 1.26E-09 | -- | 9.45E-10 | 2.95E-10 | 4.55E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.28E-06 | 9.79E-07 | 5.36E-07 | -- | 5.64E-07 | 1.76E-07 | 2.72E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.39E-11 | 2.75E-11 | 1.50E-11 | -- | 4.52E-12 | 1.41E-12 | 2.18E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.36E-08 | 5.86E-09 | 3.21E-09 | -- | 2.17E-09 | 6.77E-10 | 1.05E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.14E-07 | 1.78E-07 | 9.75E-08 | -- | 7.33E-08 | 2.29E-08 | 3.53E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.43E-05 | 6.15E-06 | 3.37E-06 | -- | 1.52E-07 | 4.74E-08 | 7.32E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.69E-06 | 2.45E-06 | 1.34E-06 | -- | 5.04E-07 | 1.57E-07 | 2.43E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.46E-07 | 1.49E-07 | 8.15E-08 | -- | 1.23E-07 | 3.82E-08 | 5.91E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.21E-07 | 2.67E-07 | 1.46E-07 | -- | 3.85E-07 | 1.20E-07 | 1.86E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.60E-14 | 1.12E-14 | 6.13E-15 | -- | 4.61E-15 | 1.44E-15 | 2.22E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.10E-09 | 4.72E-10 | 2.58E-10 | -- | 3.89E-12 | 1.21E-12 | 1.87E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.26E-08 | 5.41E-09 | 2.96E-09 | -- | 5.57E-09 | 1.74E-09 | 2.68E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 7.54E-05 | 3.24E-05 | 1.78E-05 | -- | 1.34E-06 | 4.16E-07 | 6.44E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.18E-08 | 9.37E-09 | 5.13E-09 | -- | 3.86E-09 | 1.20E-09 | 1.86E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.94E-08 | 2.98E-08 | 1.63E-08 | -- | 1.23E-08 | 3.83E-09 | 5.92E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.07E-08 | 3.90E-08 | 2.14E-08 | -- | 3.21E-09 | 1.00E-09 | 1.55E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.28E-13 | 4.93E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-13 | 1.09E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.26E-13 | 7.15E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.42E-05 | 5.64E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-04 | 4.90E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.08E-18 | 8.29E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.04E-16 | 2.53E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-14 | 1.35E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.27E-16 | 6.03E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-15 | 1.14E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-10 | 7.25E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-13 | 1.68E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-14 | 9.64E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.55E-11 | 1.46E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.70E-10 | 1.90E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-09 | 3.60E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.80E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.21E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.96E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.17E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-07 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.20E-12 | 2.67E-12 | 6.13E-13 | -- | 4.82E-13 | 1.38E-13 | 2.13E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.22E-12 | 5.26E-13 | 1.21E-13 | -- | 1.38E-13 | 3.96E-14 | 6.10E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.25E-12 | 3.98E-12 | 9.14E-13 | -- | 7.19E-13 | 2.06E-13 | 3.18E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.46E-06 | 1.49E-06 | 3.42E-07 | -- | 1.88E-07 | 5.41E-08 | 8.34E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.25E-05 | 1.40E-05 | 3.21E-06 | -- | 3.79E-07 | 1.09E-07 | 1.68E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.06E-16 | 4.57E-17 | 1.05E-17 | -- | 8.27E-18 | 2.37E-18 | 3.66E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.04E-14 | 1.73E-14 | 3.99E-15 | -- | 1.72E-15 | 4.95E-16 | 7.64E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 8.26E-14 | 3.55E-14 | 8.16E-15 | -- | 3.21E-14 | 9.22E-15 | 1.42E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 9.52E-15 | 4.09E-15 | 9.41E-16 | -- | 3.70E-16 | 1.06E-16 | 1.64E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.47E-14 | 6.31E-15 | 1.45E-15 | -- | 1.14E-15 | 3.27E-16 | 5.05E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 7.96E-10 | 3.42E-10 | 7.87E-11 | -- | 3.09E-11 | 8.88E-12 | 1.37E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.46E-12 | 1.06E-12 | 2.43E-13 | -- | 7.66E-14 | 2.20E-14 | 3.39E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.23E-13 | 5.30E-14 | 1.22E-14 | -- | 4.79E-15 | 1.38E-15 | 2.12E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.44E-10 | 6.18E-11 | 1.42E-11 | -- | 7.25E-12 | 2.08E-12 | 3.21E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.60E-09 | 1.12E-09 | 2.57E-10 | -- | 1.01E-11 | 2.90E-12 | 4.47E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.04E-10 | 8.76E-11 | 2.01E-11 | -- | 8.70E-12 | 2.50E-12 | 3.85E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.27E-06 | 9.77E-07 | 2.24E-07 | -- | 8.83E-08 | 2.53E-08 | 3.91E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.01E-07 | 1.29E-07 | 2.97E-08 | -- | 3.50E-09 | 1.01E-09 | 1.55E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.20E-09 | 1.38E-09 | 3.16E-10 | -- | 1.24E-10 | 3.57E-11 | 5.50E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.86E-07 | 1.23E-07 | 2.83E-08 | -- | 3.33E-09 | 9.58E-10 | 1.48E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.77E-08 | 7.60E-09 | 1.75E-09 | -- | 6.87E-10 | 1.97E-10 | 3.04E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.54E-06 | 3.24E-06 | 7.45E-07 | -- | 4.10E-07 | 1.18E-07 | 1.82E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.12E-10 | 9.10E-11 | 2.09E-11 | -- | 3.29E-12 | 9.44E-13 | 1.46E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.51E-08 | 1.94E-08 | 4.46E-09 | -- | 1.58E-09 | 4.53E-10 | 6.99E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.37E-06 | 5.90E-07 | 1.36E-07 | -- | 5.33E-08 | 1.53E-08 | 2.36E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.74E-05 | 2.04E-05 | 4.68E-06 | -- | 1.10E-07 | 3.17E-08 | 4.89E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.88E-05 | 8.10E-06 | 1.86E-06 | -- | 3.66E-07 | 1.05E-07 | 1.62E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.15E-06 | 4.93E-07 | 1.13E-07 | -- | 8.91E-08 | 2.56E-08 | 3.95E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.06E-06 | 8.85E-07 | 2.03E-07 | -- | 2.80E-07 | 8.04E-08 | 1.24E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 8.63E-14 | 3.71E-14 | 8.53E-15 | -- | 3.35E-15 | 9.63E-16 | 1.48E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.64E-09 | 1.56E-09 | 3.59E-10 | -- | 2.82E-12 | 8.11E-13 | 1.25E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.17E-08 | 1.79E-08 | 4.12E-09 | -- | 4.05E-09 | 1.16E-09 | 1.79E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.50E-04 | 1.07E-04 | 2.47E-05 | -- | 9.71E-07 | 2.79E-07 | 4.30E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.22E-08 | 3.10E-08 | 7.13E-09 | -- | 2.81E-09 | 8.06E-10 | 1.24E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.30E-07 | 9.88E-08 | 2.27E-08 | -- | 8.93E-09 | 2.56E-09 | 3.95E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.01E-07 | 1.29E-07 | 2.97E-08 | -- | 2.34E-09 | 6.71E-10 | 1.03E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.39E-11 | 5.03E-11 | 4.53E-12 | 1.94E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-10 |
| Anthracene | 3.01E-12 | 4.46E-12 | 6.32E-15 | 2.97E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.58E-12 |
| Fluorene | 3.39E-11 | 5.04E-11 | 6.01E-14 | 8.37E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.97E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 5.97E-07 | 8.82E-07 | 1.14E-07 | 2.45E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.77E-06 | 5.56E-06 | 1.15E-06 | 4.67E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.53E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.81E-15 | 5.56E-15 | 3.23E-14 | 4.43E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-14 |
| Bromoform | 1.68E-12 | 2.50E-12 | 1.70E-12 | 4.07E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.95E-12 |
| Carbon Tetrachloride | 2.02E-12 | 2.89E-12 | 2.70E-11 | 4.53E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-11 |
| Chloroform | 6.57E-13 | 9.66E-13 | 3.29E-12 | 4.28E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.93E-12 |
| Trichlorofluoromethane (FREON 11) | 5.26E-13 | 7.66E-13 | 4.09E-12 | 6.26E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.41E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.31E-09 | 1.95E-09 | 2.86E-09 | 2.80E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.39E-09 |
| 1,2,4-Trichlorobenzene | 1.18E-11 | 1.75E-11 | 6.55E-12 | 9.62E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-11 |
| 1,2-Dichlorobenzene | 1.38E-12 | 2.00E-12 | 1.04E-11 | 2.29E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-11 |
| Hexachlorobenzene | 1.23E-10 | 1.81E-10 | 1.25E-10 | 8.05E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.62E-10 |
| Pentachlorobenzene | 2.61E-09 | 3.89E-09 | 1.64E-10 | 1.40E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-08 |
| Pentachlorophenol | 1.58E-08 | 3.34E-10 | 1.14E-08 | 8.89E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 4.34E-06 | 2.72E-06 | 2.34E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-05 |
| Arsenic | 5.62E-07 | 7.15E-08 | 8.25E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-06 |
| Barium | 6.48E-09 | 3.87E-09 | 1.65E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-08 |
| Beryllium | 7.97E-08 | 2.77E-08 | 1.47E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.52E-07 |
| Boron | 1.29E-06 | 1.50E-06 | 1.21E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-06 |
| Cadmium | 2.89E-05 | 3.54E-05 | 1.66E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.83E-05 |
| Chromium (Total) | 5.76E-10 | 3.88E-11 | 3.27E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.47E-10 |
| Chromium VI | 1.23E-07 | 8.28E-09 | 6.97E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-07 |
| Cobalt | 1.82E-06 | 4.46E-07 | 3.30E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-06 |
| Lead | 2.62E-05 | 2.42E-05 | 1.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-04 |
| Mercury - Inorganic | 9.79E-06 | 1.03E-05 | 2.33E-06 | 1.18E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.30E-05 |
| Methyl Mercury | 2.07E-06 | 1.27E-06 | 3.90E-07 | 4.98E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-06 |
| Nickel | 2.08E-06 | 7.20E-07 | 5.65E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.49E-06 |
| Phosphorus | 8.81E-12 | 1.13E-11 | 1.04E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-11 |
| Selenium | 3.70E-08 | 2.66E-09 | 2.74E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-08 |
| Silver | 3.91E-07 | 2.16E-07 | 1.43E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.92E-07 |
| Thallium | 1.84E-04 | 8.06E-06 | 3.43E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-04 |
| Tin | 3.80E-08 | 2.46E-08 | 1.49E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-07 |
| Vanadium | 6.67E-08 | 2.87E-08 | 2.37E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.65E-07 |
| Zinc | 9.80E-07 | 1.10E-06 | 9.28E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-06 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.01E-12 | 3.44E-12 | 1.89E-12 | -- | 2.84E-12 | 8.84E-13 | 1.37E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.58E-12 | 6.79E-13 | 3.72E-13 | -- | 8.11E-13 | 2.53E-13 | 3.91E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.19E-11 | 5.14E-12 | 2.81E-12 | -- | 4.23E-12 | 1.32E-12 | 2.04E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.48E-06 | 1.93E-06 | 1.06E-06 | -- | 1.11E-06 | 3.46E-07 | 5.35E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.00E-05 | 1.29E-05 | 7.06E-06 | -- | 1.59E-06 | 4.96E-07 | 7.67E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.37E-16 | 5.91E-17 | 3.24E-17 | -- | 4.86E-17 | 1.52E-17 | 2.34E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.21E-14 | 2.24E-14 | 1.23E-14 | -- | 1.02E-14 | 3.16E-15 | 4.89E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.07E-13 | 4.59E-14 | 2.51E-14 | -- | 1.89E-13 | 5.89E-14 | 9.11E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.23E-14 | 5.29E-15 | 2.90E-15 | -- | 2.18E-15 | 6.79E-16 | 1.05E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.89E-14 | 8.14E-15 | 4.46E-15 | -- | 6.71E-15 | 2.09E-15 | 3.23E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.03E-09 | 4.42E-10 | 2.42E-10 | -- | 1.82E-10 | 5.68E-11 | 8.78E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.18E-12 | 1.37E-12 | 7.49E-13 | -- | 4.51E-13 | 1.41E-13 | 2.17E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.59E-13 | 6.85E-14 | 3.75E-14 | -- | 2.82E-14 | 8.79E-15 | 1.36E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.86E-10 | 7.98E-11 | 4.37E-11 | -- | 4.27E-11 | 1.33E-11 | 2.06E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.36E-09 | 1.44E-09 | 7.90E-10 | -- | 5.94E-11 | 1.85E-11 | 2.86E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-10 | 1.13E-10 | 6.19E-11 | -- | 5.12E-11 | 1.60E-11 | 2.47E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.09E-06 | 8.98E-07 | 4.92E-07 | -- | 3.70E-07 | 1.15E-07 | 1.78E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.76E-07 | 1.19E-07 | 6.51E-08 | -- | 1.47E-08 | 4.58E-09 | 7.07E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.94E-09 | 1.26E-09 | 6.93E-10 | -- | 5.21E-10 | 1.62E-10 | 2.51E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-07 | 1.13E-07 | 6.20E-08 | -- | 1.40E-08 | 4.36E-09 | 6.74E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-08 | 6.99E-09 | 3.83E-09 | -- | 2.88E-09 | 8.97E-10 | 1.39E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.94E-06 | 2.98E-06 | 1.63E-06 | -- | 1.72E-06 | 5.36E-07 | 8.29E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.95E-10 | 8.36E-11 | 4.58E-11 | -- | 1.38E-11 | 4.30E-12 | 6.64E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.15E-08 | 1.78E-08 | 9.77E-09 | -- | 6.61E-09 | 2.06E-09 | 3.19E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.26E-06 | 5.43E-07 | 2.97E-07 | -- | 2.23E-07 | 6.97E-08 | 1.08E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.36E-05 | 1.87E-05 | 1.03E-05 | -- | 4.63E-07 | 1.44E-07 | 2.23E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.10E-05 | 9.02E-06 | 4.94E-06 | -- | 1.86E-06 | 5.79E-07 | 8.95E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.06E-06 | 4.54E-07 | 2.49E-07 | -- | 3.74E-07 | 1.17E-07 | 1.80E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.89E-06 | 8.14E-07 | 4.46E-07 | -- | 1.17E-06 | 3.66E-07 | 5.65E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 7.94E-14 | 3.41E-14 | 1.87E-14 | -- | 1.40E-14 | 4.38E-15 | 6.77E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.34E-09 | 1.44E-09 | 7.87E-10 | -- | 1.18E-11 | 3.69E-12 | 5.70E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.83E-08 | 1.65E-08 | 9.03E-09 | -- | 1.70E-08 | 5.29E-09 | 8.18E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.30E-04 | 9.88E-05 | 5.41E-05 | -- | 4.07E-06 | 1.27E-06 | 1.96E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.64E-08 | 2.86E-08 | 1.56E-08 | -- | 1.18E-08 | 3.67E-09 | 5.67E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.12E-07 | 9.09E-08 | 4.98E-08 | -- | 3.74E-08 | 1.17E-08 | 1.80E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.76E-07 | 1.19E-07 | 6.51E-08 | -- | 9.79E-09 | 3.05E-09 | 4.72E-09 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-12 | 2.11E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-13 | 4.66E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.11E-12 | 3.06E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-04 | 2.42E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-03 | 1.46E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.88E-17 | 3.55E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-15 | 1.08E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-14 | 5.77E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-15 | 2.58E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.98E-15 | 4.86E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-09 | 3.10E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-12 | 7.21E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.67E-14 | 4.12E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-10 | 6.23E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-09 | 8.14E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 | 1.20E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.14E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.87E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.64E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.10E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.34E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.83E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.43E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.78E-07 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.65E-11 | 1.14E-11 | 2.62E-12 | -- | 2.06E-12 | 5.92E-13 | 9.13E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.24E-12 | 2.25E-12 | 5.17E-13 | -- | 5.90E-13 | 1.69E-13 | 2.61E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.96E-11 | 1.70E-11 | 3.91E-12 | -- | 3.08E-12 | 8.83E-13 | 1.36E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.48E-05 | 6.38E-06 | 1.47E-06 | -- | 8.08E-07 | 2.32E-07 | 3.58E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.93E-05 | 4.27E-05 | 9.81E-06 | -- | 1.16E-06 | 3.32E-07 | 5.12E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.55E-16 | 1.96E-16 | 4.50E-17 | -- | 3.54E-17 | 1.02E-17 | 1.57E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.73E-13 | 7.42E-14 | 1.71E-14 | -- | 7.38E-15 | 2.12E-15 | 3.27E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.54E-13 | 1.52E-13 | 3.49E-14 | -- | 1.37E-13 | 3.95E-14 | 6.08E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.08E-14 | 1.75E-14 | 4.03E-15 | -- | 1.58E-15 | 4.55E-16 | 7.01E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.28E-14 | 2.70E-14 | 6.20E-15 | -- | 4.88E-15 | 1.40E-15 | 2.16E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.41E-09 | 1.46E-09 | 3.37E-10 | -- | 1.32E-10 | 3.80E-11 | 5.86E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.05E-11 | 4.53E-12 | 1.04E-12 | -- | 3.28E-13 | 9.41E-14 | 1.45E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 5.28E-13 | 2.27E-13 | 5.21E-14 | -- | 2.05E-14 | 5.89E-15 | 9.08E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.15E-10 | 2.64E-10 | 6.07E-11 | -- | 3.10E-11 | 8.91E-12 | 1.37E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.11E-08 | 4.78E-09 | 1.10E-09 | -- | 4.32E-11 | 1.24E-11 | 1.91E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.72E-10 | 3.75E-10 | 8.61E-11 | -- | 3.72E-11 | 1.07E-11 | 1.65E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 6.92E-06 | 2.98E-06 | 6.84E-07 | -- | 2.69E-07 | 7.72E-08 | 1.19E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.16E-07 | 3.94E-07 | 9.04E-08 | -- | 1.07E-08 | 3.06E-09 | 4.72E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.75E-09 | 4.19E-09 | 9.63E-10 | -- | 3.79E-10 | 1.09E-10 | 1.68E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 8.72E-07 | 3.75E-07 | 8.62E-08 | -- | 1.02E-08 | 2.92E-09 | 4.50E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.39E-08 | 2.32E-08 | 5.32E-09 | -- | 2.09E-09 | 6.01E-10 | 9.27E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.30E-05 | 9.88E-06 | 2.27E-06 | -- | 1.25E-06 | 3.59E-07 | 5.54E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.45E-10 | 2.77E-10 | 6.37E-11 | -- | 1.00E-11 | 2.88E-12 | 4.43E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.38E-07 | 5.91E-08 | 1.36E-08 | -- | 4.81E-09 | 1.38E-09 | 2.13E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.18E-06 | 1.80E-06 | 4.13E-07 | -- | 1.62E-07 | 4.66E-08 | 7.19E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.44E-04 | 6.21E-05 | 1.43E-05 | -- | 3.37E-07 | 9.67E-08 | 1.49E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.95E-05 | 2.99E-05 | 6.87E-06 | -- | 1.35E-06 | 3.88E-07 | 5.98E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.50E-06 | 1.50E-06 | 3.45E-07 | -- | 2.72E-07 | 7.80E-08 | 1.20E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.27E-06 | 2.70E-06 | 6.19E-07 | -- | 8.53E-07 | 2.45E-07 | 3.78E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.63E-13 | 1.13E-13 | 2.60E-14 | -- | 1.02E-14 | 2.93E-15 | 4.52E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.11E-08 | 4.76E-09 | 1.09E-09 | -- | 8.60E-12 | 2.47E-12 | 3.81E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.27E-07 | 5.46E-08 | 1.25E-08 | -- | 1.23E-08 | 3.54E-09 | 5.46E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 7.62E-04 | 3.27E-04 | 7.52E-05 | -- | 2.96E-06 | 8.50E-07 | 1.31E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.20E-07 | 9.46E-08 | 2.17E-08 | -- | 8.55E-09 | 2.46E-09 | 3.79E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.01E-07 | 3.01E-07 | 6.92E-08 | -- | 2.72E-08 | 7.82E-09 | 1.21E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.16E-07 | 3.94E-07 | 9.05E-08 | -- | 7.12E-09 | 2.04E-09 | 3.15E-09 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.45E-10 | 2.15E-10 | 1.94E-11 | 8.28E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.07E-10 |
| Anthracene | 1.29E-11 | 1.91E-11 | 2.71E-14 | 8.62E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-11 |
| Fluorene | 1.45E-10 | 2.16E-10 | 2.57E-13 | 2.43E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.55E-06 | 3.78E-06 | 4.88E-07 | 7.12E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.21E-05 | 1.70E-05 | 3.50E-06 | 1.35E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.62E-14 | 2.38E-14 | 1.38E-13 | 1.29E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-13 |
| Bromoform | 7.20E-12 | 1.07E-11 | 7.29E-12 | 1.18E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-11 |
| Carbon Tetrachloride | 8.55E-12 | 1.24E-11 | 1.15E-10 | 1.31E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-10 |
| Chloroform | 2.80E-12 | 4.13E-12 | 1.41E-11 | 1.24E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-11 |
| Trichlorofluoromethane (FREON 11) | 2.23E-12 | 3.28E-12 | 1.75E-11 | 1.82E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 5.60E-09 | 8.33E-09 | 1.23E-08 | 8.14E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-08 |
| 1,2,4-Trichlorobenzene | 5.04E-11 | 7.49E-11 | 2.80E-11 | 2.79E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-10 |
| 1,2-Dichlorobenzene | 5.86E-12 | 8.54E-12 | 4.44E-11 | 6.65E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.97E-11 |
| Hexachlorobenzene | 5.24E-10 | 7.74E-10 | 5.37E-10 | 2.34E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-09 |
| Pentachlorobenzene | 1.12E-08 | 1.66E-08 | 7.02E-10 | 4.07E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-08 |
| Pentachlorophenol | 4.62E-08 | 1.43E-09 | 4.89E-08 | 2.58E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.20E-05 | 8.30E-06 | 7.12E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-05 |
| Arsenic | 1.47E-06 | 2.18E-07 | 2.51E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-06 |
| Barium | 1.79E-08 | 1.18E-08 | 5.02E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-08 |
| Beryllium | 2.14E-07 | 8.46E-08 | 4.49E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-06 |
| Boron | 3.79E-06 | 4.56E-06 | 3.70E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81E-06 |
| Cadmium | 8.58E-05 | 1.08E-04 | 5.05E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-04 |
| Chromium (Total) | 1.50E-09 | 1.18E-10 | 9.95E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-09 |
| Chromium VI | 3.19E-07 | 2.52E-08 | 2.12E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-07 |
| Cobalt | 4.82E-06 | 1.36E-06 | 1.00E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-05 |
| Lead | 7.51E-05 | 7.38E-05 | 4.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-04 |
| Mercury - Inorganic | 3.36E-05 | 3.79E-05 | 8.59E-06 | 3.42E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-04 |
| Methyl Mercury | 6.03E-06 | 3.86E-06 | 1.19E-06 | 1.45E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-05 |
| Nickel | 5.59E-06 | 2.19E-06 | 1.72E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-05 |
| Phosphorus | 2.63E-11 | 3.46E-11 | 3.16E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-11 |
| Selenium | 9.62E-08 | 8.11E-09 | 8.36E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-07 |
| Silver | 1.08E-06 | 6.59E-07 | 4.36E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-06 |
| Thallium | 4.77E-04 | 2.46E-05 | 1.05E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-03 |
| Tin | 1.06E-07 | 7.49E-08 | 4.53E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.36E-07 |
| Vanadium | 1.81E-07 | 8.74E-08 | 7.21E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-06 |
| Zinc | 2.87E-06 | 3.34E-06 | 2.83E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-05 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.24E-12 | 9.61E-13 | 5.26E-13 | -- | 7.92E-13 | 2.47E-13 | 3.82E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.41E-13 | 1.90E-13 | 1.04E-13 | -- | 2.26E-13 | 7.06E-14 | 1.09E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.33E-12 | 1.43E-12 | 7.85E-13 | -- | 1.18E-12 | 3.68E-13 | 5.69E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.25E-06 | 5.38E-07 | 2.94E-07 | -- | 3.10E-07 | 9.66E-08 | 1.49E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 7.30E-06 | 3.14E-06 | 1.72E-06 | -- | 3.88E-07 | 1.21E-07 | 1.87E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.83E-17 | 1.65E-17 | 9.03E-18 | -- | 1.36E-17 | 4.23E-18 | 6.54E-18 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.45E-14 | 6.25E-15 | 3.43E-15 | -- | 2.83E-15 | 8.83E-16 | 1.37E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.98E-14 | 1.28E-14 | 7.01E-15 | -- | 5.27E-14 | 1.64E-14 | 2.54E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.43E-15 | 1.48E-15 | 8.08E-16 | -- | 6.08E-16 | 1.89E-16 | 2.93E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.29E-15 | 2.27E-15 | 1.24E-15 | -- | 1.87E-15 | 5.84E-16 | 9.02E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.87E-10 | 1.23E-10 | 6.76E-11 | -- | 5.08E-11 | 1.58E-11 | 2.45E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.88E-13 | 3.82E-13 | 2.09E-13 | -- | 1.26E-13 | 3.92E-14 | 6.06E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.44E-14 | 1.91E-14 | 1.05E-14 | -- | 7.87E-15 | 2.45E-15 | 3.79E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.18E-11 | 2.23E-11 | 1.22E-11 | -- | 1.19E-11 | 3.72E-12 | 5.74E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.37E-10 | 4.03E-10 | 2.21E-10 | -- | 1.66E-11 | 5.17E-12 | 7.99E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.34E-11 | 3.16E-11 | 1.73E-11 | -- | 1.43E-11 | 4.46E-12 | 6.89E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.09E-07 | 2.19E-07 | 1.20E-07 | -- | 9.02E-08 | 2.81E-08 | 4.35E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.74E-08 | 2.90E-08 | 1.59E-08 | -- | 3.58E-09 | 1.12E-09 | 1.72E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.17E-10 | 3.08E-10 | 1.69E-10 | -- | 1.27E-10 | 3.96E-11 | 6.12E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 6.42E-08 | 2.76E-08 | 1.51E-08 | -- | 3.41E-09 | 1.06E-09 | 1.64E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.96E-09 | 1.70E-09 | 9.34E-10 | -- | 7.02E-10 | 2.19E-10 | 3.38E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.69E-06 | 7.27E-07 | 3.98E-07 | -- | 4.19E-07 | 1.31E-07 | 2.02E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.74E-11 | 2.04E-11 | 1.12E-11 | -- | 3.36E-12 | 1.05E-12 | 1.62E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.01E-08 | 4.35E-09 | 2.38E-09 | -- | 1.61E-09 | 5.03E-10 | 7.77E-10 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.08E-07 | 1.32E-07 | 7.25E-08 | -- | 5.45E-08 | 1.70E-08 | 2.63E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.06E-05 | 4.57E-06 | 2.50E-06 | -- | 1.13E-07 | 3.52E-08 | 5.44E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.56E-06 | 2.82E-06 | 1.55E-06 | -- | 5.81E-07 | 1.81E-07 | 2.80E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.57E-07 | 1.11E-07 | 6.06E-08 | -- | 9.11E-08 | 2.84E-08 | 4.39E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.61E-07 | 1.98E-07 | 1.09E-07 | -- | 2.86E-07 | 8.92E-08 | 1.38E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.93E-14 | 8.32E-15 | 4.56E-15 | -- | 3.43E-15 | 1.07E-15 | 1.65E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.15E-10 | 3.50E-10 | 1.92E-10 | -- | 2.89E-12 | 9.00E-13 | 1.39E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 9.35E-09 | 4.02E-09 | 2.20E-09 | -- | 4.14E-09 | 1.29E-09 | 1.99E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.61E-05 | 2.41E-05 | 1.32E-05 | -- | 9.92E-07 | 3.09E-07 | 4.78E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.62E-08 | 6.96E-09 | 3.81E-09 | -- | 2.87E-09 | 8.94E-10 | 1.38E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 5.16E-08 | 2.22E-08 | 1.21E-08 | -- | 9.13E-09 | 2.85E-09 | 4.40E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.74E-08 | 2.90E-08 | 1.59E-08 | -- | 2.39E-09 | 7.44E-10 | 1.15E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.50E-13 | 5.89E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-13 | 1.30E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.67E-13 | 8.54E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.49E-05 | 6.76E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-04 | 3.82E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-17 | 9.91E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.60E-16 | 3.03E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-14 | 1.61E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-16 | 7.20E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-15 | 1.36E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-10 | 8.66E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-13 | 2.01E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-14 | 1.15E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63E-11 | 1.74E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.81E-10 | 2.27E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.47E-09 | 4.62E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.86E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.57E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.50E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.10E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.92E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.51E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-07 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 7.41E-12 | 3.18E-12 | 7.32E-13 | -- | 5.75E-13 | 1.65E-13 | 2.55E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.46E-12 | 6.28E-13 | 1.44E-13 | -- | 1.65E-13 | 4.73E-14 | 7.29E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.10E-11 | 4.75E-12 | 1.09E-12 | -- | 8.58E-13 | 2.46E-13 | 3.80E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.14E-06 | 1.78E-06 | 4.09E-07 | -- | 2.25E-07 | 6.47E-08 | 9.98E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.42E-05 | 1.04E-05 | 2.39E-06 | -- | 2.82E-07 | 8.10E-08 | 1.25E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.27E-16 | 5.46E-17 | 1.25E-17 | -- | 9.87E-18 | 2.83E-18 | 4.37E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.82E-14 | 2.07E-14 | 4.76E-15 | -- | 2.06E-15 | 5.91E-16 | 9.12E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 9.87E-14 | 4.24E-14 | 9.75E-15 | -- | 3.83E-14 | 1.10E-14 | 1.70E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.14E-14 | 4.89E-15 | 1.12E-15 | -- | 4.42E-16 | 1.27E-16 | 1.96E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.75E-14 | 7.53E-15 | 1.73E-15 | -- | 1.36E-15 | 3.91E-16 | 6.03E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 9.51E-10 | 4.09E-10 | 9.39E-11 | -- | 3.69E-11 | 1.06E-11 | 1.64E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.94E-12 | 1.26E-12 | 2.91E-13 | -- | 9.15E-14 | 2.63E-14 | 4.05E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.47E-13 | 6.33E-14 | 1.45E-14 | -- | 5.72E-15 | 1.64E-15 | 2.53E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.72E-10 | 7.37E-11 | 1.69E-11 | -- | 8.66E-12 | 2.49E-12 | 3.84E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.10E-09 | 1.33E-09 | 3.07E-10 | -- | 1.21E-11 | 3.46E-12 | 5.34E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.43E-10 | 1.05E-10 | 2.40E-11 | -- | 1.04E-11 | 2.98E-12 | 4.60E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.69E-06 | 7.26E-07 | 1.67E-07 | -- | 6.56E-08 | 1.88E-08 | 2.90E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.23E-07 | 9.60E-08 | 2.21E-08 | -- | 2.60E-09 | 7.47E-10 | 1.15E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.38E-09 | 1.02E-09 | 2.35E-10 | -- | 9.23E-11 | 2.65E-11 | 4.09E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.13E-07 | 9.14E-08 | 2.10E-08 | -- | 2.48E-09 | 7.12E-10 | 1.10E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.31E-08 | 5.65E-09 | 1.30E-09 | -- | 5.10E-10 | 1.47E-10 | 2.26E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.61E-06 | 2.41E-06 | 5.54E-07 | -- | 3.05E-07 | 8.76E-08 | 1.35E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.57E-10 | 6.76E-11 | 1.55E-11 | -- | 2.44E-12 | 7.01E-13 | 1.08E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.35E-08 | 1.44E-08 | 3.31E-09 | -- | 1.17E-09 | 3.37E-10 | 5.19E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.02E-06 | 4.38E-07 | 1.01E-07 | -- | 3.96E-08 | 1.14E-08 | 1.75E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.52E-05 | 1.51E-05 | 3.48E-06 | -- | 8.21E-08 | 2.36E-08 | 3.63E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.17E-05 | 9.35E-06 | 2.15E-06 | -- | 4.22E-07 | 1.21E-07 | 1.87E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 8.53E-07 | 3.67E-07 | 8.42E-08 | -- | 6.62E-08 | 1.90E-08 | 2.93E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.53E-06 | 6.57E-07 | 1.51E-07 | -- | 2.08E-07 | 5.97E-08 | 9.20E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 6.41E-14 | 2.76E-14 | 6.33E-15 | -- | 2.49E-15 | 7.15E-16 | 1.10E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.70E-09 | 1.16E-09 | 2.67E-10 | -- | 2.10E-12 | 6.02E-13 | 9.29E-13 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.10E-08 | 1.33E-08 | 3.06E-09 | -- | 3.01E-09 | 8.64E-10 | 1.33E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.86E-04 | 7.98E-05 | 1.83E-05 | -- | 7.21E-07 | 2.07E-07 | 3.19E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.37E-08 | 2.31E-08 | 5.30E-09 | -- | 2.09E-09 | 5.99E-10 | 9.23E-10 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.71E-07 | 7.35E-08 | 1.69E-08 | -- | 6.64E-09 | 1.91E-09 | 2.94E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.23E-07 | 9.60E-08 | 2.21E-08 | -- | 1.74E-09 | 4.98E-10 | 7.68E-10 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.05E-11 | 6.01E-11 | 5.40E-12 | 2.31E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-10 |
| Anthracene | 3.59E-12 | 5.33E-12 | 7.55E-15 | 3.92E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-11 |
| Fluorene | 4.05E-11 | 6.02E-11 | 7.18E-14 | 1.11E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.15E-07 | 1.06E-06 | 1.36E-07 | 3.24E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.63E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.90E-06 | 4.14E-06 | 8.54E-07 | 6.17E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.56E-15 | 6.63E-15 | 3.86E-14 | 5.86E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.01E-14 |
| Bromoform | 2.01E-12 | 2.99E-12 | 2.03E-12 | 5.39E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.11E-12 |
| Carbon Tetrachloride | 2.43E-12 | 3.46E-12 | 3.22E-11 | 5.99E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-11 |
| Chloroform | 7.85E-13 | 1.15E-12 | 3.93E-12 | 5.66E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-12 |
| Trichlorofluoromethane (FREON 11) | 6.29E-13 | 9.15E-13 | 4.88E-12 | 8.27E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.46E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.56E-09 | 2.33E-09 | 3.42E-09 | 3.71E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.83E-09 |
| 1,2,4-Trichlorobenzene | 1.41E-11 | 2.09E-11 | 7.82E-12 | 1.27E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-11 |
| 1,2-Dichlorobenzene | 1.66E-12 | 2.38E-12 | 1.24E-11 | 3.03E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-11 |
| Hexachlorobenzene | 1.47E-10 | 2.16E-10 | 1.50E-10 | 1.06E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.91E-10 |
| Pentachlorobenzene | 3.12E-09 | 4.64E-09 | 1.96E-10 | 1.85E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-08 |
| Pentachlorophenol | 2.09E-08 | 3.99E-10 | 1.36E-08 | 1.18E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.71E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.95E-06 | 2.02E-06 | 1.74E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.84E-06 |
| Arsenic | 3.62E-07 | 5.31E-08 | 6.13E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.67E-07 |
| Barium | 4.39E-09 | 2.87E-09 | 1.22E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-08 |
| Beryllium | 5.26E-08 | 2.06E-08 | 1.09E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-07 |
| Boron | 9.26E-07 | 1.11E-06 | 9.01E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-06 |
| Cadmium | 2.09E-05 | 2.63E-05 | 1.23E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-05 |
| Chromium (Total) | 3.69E-10 | 2.88E-11 | 2.43E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-10 |
| Chromium VI | 7.86E-08 | 6.15E-09 | 5.18E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-07 |
| Cobalt | 1.19E-06 | 3.31E-07 | 2.45E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-06 |
| Lead | 1.84E-05 | 1.80E-05 | 1.09E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.14E-05 |
| Mercury - Inorganic | 1.12E-05 | 1.18E-05 | 2.69E-06 | 1.56E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.13E-05 |
| Methyl Mercury | 2.01E-06 | 9.42E-07 | 2.90E-07 | 6.59E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.32E-06 |
| Nickel | 1.37E-06 | 5.35E-07 | 4.20E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.65E-06 |
| Phosphorus | 6.41E-12 | 8.43E-12 | 7.70E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-11 |
| Selenium | 2.37E-08 | 1.98E-09 | 2.04E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-08 |
| Silver | 2.64E-07 | 1.61E-07 | 1.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-07 |
| Thallium | 1.18E-04 | 5.99E-06 | 2.55E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-04 |
| Tin | 2.59E-08 | 1.83E-08 | 1.10E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-07 |
| Vanadium | 4.44E-08 | 2.13E-08 | 1.76E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.40E-07 |
| Zinc | 7.02E-07 | 8.14E-07 | 6.90E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-06 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.40E-12 | 1.46E-12 | 8.00E-13 | -- | 1.20E-12 | 3.75E-13 | 5.80E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.70E-13 | 2.88E-13 | 1.58E-13 | -- | 3.44E-13 | 1.07E-13 | 1.66E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 5.06E-12 | 2.18E-12 | 1.19E-12 | -- | 1.79E-12 | 5.59E-13 | 8.64E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.90E-06 | 8.15E-07 | 4.47E-07 | -- | 4.70E-07 | 1.47E-07 | 2.27E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.37E-05 | 5.89E-06 | 3.23E-06 | -- | 7.28E-07 | 2.27E-07 | 3.51E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.83E-17 | 2.50E-17 | 1.37E-17 | -- | 2.06E-17 | 6.43E-18 | 9.94E-18 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.21E-14 | 9.50E-15 | 5.20E-15 | -- | 4.30E-15 | 1.34E-15 | 2.07E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.53E-14 | 1.95E-14 | 1.07E-14 | -- | 8.01E-14 | 2.50E-14 | 3.86E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 5.22E-15 | 2.24E-15 | 1.23E-15 | -- | 9.23E-16 | 2.88E-16 | 4.45E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.03E-15 | 3.45E-15 | 1.89E-15 | -- | 2.84E-15 | 8.87E-16 | 1.37E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.36E-10 | 1.87E-10 | 1.03E-10 | -- | 7.72E-11 | 2.41E-11 | 3.72E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.35E-12 | 5.80E-13 | 3.18E-13 | -- | 1.91E-13 | 5.96E-14 | 9.21E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.75E-14 | 2.90E-14 | 1.59E-14 | -- | 1.20E-14 | 3.73E-15 | 5.76E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.87E-11 | 3.38E-11 | 1.85E-11 | -- | 1.81E-11 | 5.64E-12 | 8.73E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-09 | 6.12E-10 | 3.35E-10 | -- | 2.52E-11 | 7.86E-12 | 1.21E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.12E-10 | 4.79E-11 | 2.63E-11 | -- | 2.17E-11 | 6.77E-12 | 1.05E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.57E-07 | 4.12E-07 | 2.25E-07 | -- | 1.69E-07 | 5.28E-08 | 8.17E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.27E-07 | 5.44E-08 | 2.98E-08 | -- | 6.73E-09 | 2.10E-09 | 3.24E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.35E-09 | 5.79E-10 | 3.17E-10 | -- | 2.39E-10 | 7.44E-11 | 1.15E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.21E-07 | 5.18E-08 | 2.84E-08 | -- | 6.40E-09 | 2.00E-09 | 3.09E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.45E-09 | 3.20E-09 | 1.75E-09 | -- | 1.32E-09 | 4.11E-10 | 6.36E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.18E-06 | 1.37E-06 | 7.49E-07 | -- | 7.88E-07 | 2.46E-07 | 3.80E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.92E-11 | 3.83E-11 | 2.10E-11 | -- | 6.31E-12 | 1.97E-12 | 3.04E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.90E-08 | 8.18E-09 | 4.48E-09 | -- | 3.03E-09 | 9.45E-10 | 1.46E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.78E-07 | 2.49E-07 | 1.36E-07 | -- | 1.02E-07 | 3.19E-08 | 4.93E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.00E-05 | 8.58E-06 | 4.70E-06 | -- | 2.12E-07 | 6.61E-08 | 1.02E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-05 | 4.30E-06 | 2.35E-06 | -- | 8.85E-07 | 2.76E-07 | 4.27E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.83E-07 | 2.08E-07 | 1.14E-07 | -- | 1.71E-07 | 5.34E-08 | 8.25E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.67E-07 | 3.73E-07 | 2.04E-07 | -- | 5.37E-07 | 1.68E-07 | 2.59E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.64E-14 | 1.56E-14 | 8.56E-15 | -- | 6.44E-15 | 2.01E-15 | 3.10E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.53E-09 | 6.59E-10 | 3.61E-10 | -- | 5.42E-12 | 1.69E-12 | 2.61E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.76E-08 | 7.55E-09 | 4.14E-09 | -- | 7.78E-09 | 2.42E-09 | 3.75E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.05E-04 | 4.53E-05 | 2.48E-05 | -- | 1.86E-06 | 5.81E-07 | 8.99E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.04E-08 | 1.31E-08 | 7.17E-09 | -- | 5.39E-09 | 1.68E-09 | 2.60E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.69E-08 | 4.16E-08 | 2.28E-08 | -- | 1.72E-08 | 5.35E-09 | 8.27E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.27E-07 | 5.45E-08 | 2.98E-08 | -- | 4.49E-09 | 1.40E-09 | 2.16E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-12 | 8.95E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-13 | 1.97E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-12 | 1.30E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.85E-05 | 1.02E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.79E-04 | 7.04E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-17 | 1.50E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-15 | 4.60E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-14 | 2.45E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.93E-16 | 1.09E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-15 | 2.06E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-10 | 1.32E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-13 | 3.06E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-14 | 1.75E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-10 | 2.64E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-09 | 3.45E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.82E-09 | 7.04E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.71E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.71E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.04E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-07 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.13E-11 | 4.84E-12 | 1.11E-12 | -- | 8.74E-13 | 2.51E-13 | 3.87E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.22E-12 | 9.54E-13 | 2.19E-13 | -- | 2.50E-13 | 7.18E-14 | 1.11E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.68E-11 | 7.21E-12 | 1.66E-12 | -- | 1.30E-12 | 3.74E-13 | 5.77E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.28E-06 | 2.70E-06 | 6.21E-07 | -- | 3.42E-07 | 9.81E-08 | 1.51E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.54E-05 | 1.95E-05 | 4.49E-06 | -- | 5.29E-07 | 1.52E-07 | 2.34E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.93E-16 | 8.30E-17 | 1.91E-17 | -- | 1.50E-17 | 4.31E-18 | 6.64E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.32E-14 | 3.15E-14 | 7.23E-15 | -- | 3.13E-15 | 8.99E-16 | 1.39E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.50E-13 | 6.45E-14 | 1.48E-14 | -- | 5.83E-14 | 1.67E-14 | 2.58E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.73E-14 | 7.43E-15 | 1.71E-15 | -- | 6.71E-16 | 1.93E-16 | 2.97E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.66E-14 | 1.14E-14 | 2.63E-15 | -- | 2.07E-15 | 5.94E-16 | 9.15E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.44E-09 | 6.21E-10 | 1.43E-10 | -- | 5.61E-11 | 1.61E-11 | 2.48E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.47E-12 | 1.92E-12 | 4.42E-13 | -- | 1.39E-13 | 3.99E-14 | 6.15E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.24E-13 | 9.62E-14 | 2.21E-14 | -- | 8.69E-15 | 2.50E-15 | 3.85E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.61E-10 | 1.12E-10 | 2.57E-11 | -- | 1.32E-11 | 3.78E-12 | 5.83E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.72E-09 | 2.03E-09 | 4.66E-10 | -- | 1.83E-11 | 5.26E-12 | 8.11E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.70E-10 | 1.59E-10 | 3.65E-11 | -- | 1.58E-11 | 4.53E-12 | 6.99E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.17E-06 | 1.36E-06 | 3.13E-07 | -- | 1.23E-07 | 3.54E-08 | 5.45E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.20E-07 | 1.80E-07 | 4.14E-08 | -- | 4.89E-09 | 1.40E-09 | 2.16E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.47E-09 | 1.92E-09 | 4.41E-10 | -- | 1.73E-10 | 4.98E-11 | 7.68E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.99E-07 | 1.72E-07 | 3.95E-08 | -- | 4.66E-09 | 1.34E-09 | 2.06E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.47E-08 | 1.06E-08 | 2.44E-09 | -- | 9.59E-10 | 2.75E-10 | 4.25E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.05E-05 | 4.53E-06 | 1.04E-06 | -- | 5.73E-07 | 1.65E-07 | 2.54E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.95E-10 | 1.27E-10 | 2.92E-11 | -- | 4.59E-12 | 1.32E-12 | 2.03E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.30E-08 | 2.71E-08 | 6.23E-09 | -- | 2.20E-09 | 6.33E-10 | 9.76E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.92E-06 | 8.24E-07 | 1.89E-07 | -- | 7.44E-08 | 2.14E-08 | 3.30E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.62E-05 | 2.84E-05 | 6.53E-06 | -- | 1.54E-07 | 4.43E-08 | 6.83E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.31E-05 | 1.42E-05 | 3.27E-06 | -- | 6.43E-07 | 1.85E-07 | 2.85E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.60E-06 | 6.88E-07 | 1.58E-07 | -- | 1.24E-07 | 3.57E-08 | 5.51E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.87E-06 | 1.24E-06 | 2.84E-07 | -- | 3.91E-07 | 1.12E-07 | 1.73E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.20E-13 | 5.18E-14 | 1.19E-14 | -- | 4.68E-15 | 1.34E-15 | 2.07E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.08E-09 | 2.18E-09 | 5.01E-10 | -- | 3.94E-12 | 1.13E-12 | 1.75E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.82E-08 | 2.50E-08 | 5.75E-09 | -- | 5.65E-09 | 1.62E-09 | 2.50E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.49E-04 | 1.50E-04 | 3.45E-05 | -- | 1.36E-06 | 3.89E-07 | 6.00E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.01E-07 | 4.33E-08 | 9.96E-09 | -- | 3.92E-09 | 1.12E-09 | 1.73E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.21E-07 | 1.38E-07 | 3.17E-08 | -- | 1.25E-08 | 3.58E-09 | 5.52E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.20E-07 | 1.80E-07 | 4.15E-08 | -- | 3.26E-09 | 9.36E-10 | 1.44E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 6.16E-11 | 9.13E-11 | 8.21E-12 | 3.51E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-10 |
| Anthracene | 5.45E-12 | 8.10E-12 | 1.15E-14 | 5.99E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-11 |
| Fluorene | 6.15E-11 | 9.14E-11 | 1.09E-13 | 1.69E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.08E-06 | 1.60E-06 | 2.06E-07 | 4.95E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.10E-05 | 7.76E-06 | 1.60E-06 | 9.42E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.16E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.93E-15 | 1.01E-14 | 5.87E-14 | 8.95E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.61E-14 |
| Bromoform | 3.05E-12 | 4.54E-12 | 3.09E-12 | 8.23E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-11 |
| Carbon Tetrachloride | 3.69E-12 | 5.25E-12 | 4.89E-11 | 9.14E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-11 |
| Chloroform | 1.19E-12 | 1.75E-12 | 5.97E-12 | 8.64E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.95E-12 |
| Trichlorofluoromethane (FREON 11) | 9.56E-13 | 1.39E-12 | 7.42E-12 | 1.26E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.82E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.38E-09 | 3.53E-09 | 5.20E-09 | 5.66E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-08 |
| 1,2,4-Trichlorobenzene | 2.14E-11 | 3.17E-11 | 1.19E-11 | 1.94E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-11 |
| 1,2-Dichlorobenzene | 2.52E-12 | 3.62E-12 | 1.88E-11 | 4.62E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-11 |
| Hexachlorobenzene | 2.23E-10 | 3.28E-10 | 2.27E-10 | 1.63E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-09 |
| Pentachlorobenzene | 4.74E-09 | 7.05E-09 | 2.97E-10 | 2.83E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-08 |
| Pentachlorophenol | 3.19E-08 | 6.07E-10 | 2.07E-08 | 1.80E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.18E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 5.78E-06 | 3.80E-06 | 3.26E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-05 |
| Arsenic | 7.27E-07 | 9.98E-08 | 1.15E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-06 |
| Barium | 8.61E-09 | 5.40E-09 | 2.30E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.14E-08 |
| Beryllium | 1.05E-07 | 3.87E-08 | 2.06E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-07 |
| Boron | 1.77E-06 | 2.09E-06 | 1.69E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-06 |
| Cadmium | 3.98E-05 | 4.95E-05 | 2.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-04 |
| Chromium (Total) | 7.43E-10 | 5.42E-11 | 4.56E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-09 |
| Chromium VI | 1.59E-07 | 1.16E-08 | 9.73E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-07 |
| Cobalt | 2.37E-06 | 6.23E-07 | 4.60E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.10E-06 |
| Lead | 3.54E-05 | 3.38E-05 | 2.04E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-04 |
| Mercury - Inorganic | 1.74E-05 | 1.80E-05 | 4.09E-06 | 2.38E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.36E-05 |
| Methyl Mercury | 3.40E-06 | 1.77E-06 | 5.44E-07 | 1.01E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.38E-06 |
| Nickel | 2.73E-06 | 1.00E-06 | 7.89E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.88E-06 |
| Phosphorus | 1.22E-11 | 1.58E-11 | 1.45E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-11 |
| Selenium | 4.77E-08 | 3.72E-09 | 3.83E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.96E-08 |
| Silver | 5.19E-07 | 3.02E-07 | 2.00E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.39E-07 |
| Thallium | 2.37E-04 | 1.12E-05 | 4.79E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.85E-04 |
| Tin | 5.07E-08 | 3.43E-08 | 2.08E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-07 |
| Vanadium | 8.78E-08 | 4.00E-08 | 3.30E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.43E-07 |
| Zinc | 1.34E-06 | 1.53E-06 | 1.30E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.81E-06 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.55E-12 | 6.66E-13 | 3.65E-13 | -- | 5.48E-13 | 1.71E-13 | 2.64E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.06E-13 | 1.31E-13 | 7.19E-14 | -- | 1.57E-13 | 4.89E-14 | 7.56E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.31E-12 | 9.93E-13 | 5.44E-13 | -- | 8.18E-13 | 2.55E-13 | 3.94E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 8.68E-07 | 3.73E-07 | 2.04E-07 | -- | 2.15E-07 | 6.70E-08 | 1.04E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.75E-06 | 2.04E-06 | 1.12E-06 | -- | 2.52E-07 | 7.86E-08 | 1.22E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.66E-17 | 1.14E-17 | 6.25E-18 | -- | 9.40E-18 | 2.93E-18 | 4.53E-18 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.01E-14 | 4.33E-15 | 2.37E-15 | -- | 1.96E-15 | 6.12E-16 | 9.46E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.06E-14 | 8.87E-15 | 4.86E-15 | -- | 3.65E-14 | 1.14E-14 | 1.76E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.38E-15 | 1.02E-15 | 5.60E-16 | -- | 4.21E-16 | 1.31E-16 | 2.03E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.66E-15 | 1.57E-15 | 8.62E-16 | -- | 1.30E-15 | 4.04E-16 | 6.25E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.99E-10 | 8.55E-11 | 4.68E-11 | -- | 3.52E-11 | 1.10E-11 | 1.70E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 6.15E-13 | 2.64E-13 | 1.45E-13 | -- | 8.71E-14 | 2.72E-14 | 4.20E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.08E-14 | 1.32E-14 | 7.25E-15 | -- | 5.45E-15 | 1.70E-15 | 2.63E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.59E-11 | 1.54E-11 | 8.44E-12 | -- | 8.25E-12 | 2.57E-12 | 3.98E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.49E-10 | 2.79E-10 | 1.53E-10 | -- | 1.15E-11 | 3.58E-12 | 5.54E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.08E-11 | 2.19E-11 | 1.20E-11 | -- | 9.90E-12 | 3.09E-12 | 4.77E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.31E-07 | 1.42E-07 | 7.78E-08 | -- | 5.85E-08 | 1.82E-08 | 2.82E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.37E-08 | 1.88E-08 | 1.03E-08 | -- | 2.32E-09 | 7.24E-10 | 1.12E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.65E-10 | 2.00E-10 | 1.10E-10 | -- | 8.24E-11 | 2.57E-11 | 3.97E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.17E-08 | 1.79E-08 | 9.81E-09 | -- | 2.21E-09 | 6.90E-10 | 1.07E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.57E-09 | 1.11E-09 | 6.06E-10 | -- | 4.55E-10 | 1.42E-10 | 2.19E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.10E-06 | 4.72E-07 | 2.59E-07 | -- | 2.72E-07 | 8.48E-08 | 1.31E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.08E-11 | 1.32E-11 | 7.25E-12 | -- | 2.18E-12 | 6.79E-13 | 1.05E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.57E-09 | 2.82E-09 | 1.55E-09 | -- | 1.05E-09 | 3.26E-10 | 5.04E-10 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.00E-07 | 8.58E-08 | 4.70E-08 | -- | 3.54E-08 | 1.10E-08 | 1.70E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.90E-06 | 2.97E-06 | 1.62E-06 | -- | 7.33E-08 | 2.28E-08 | 3.53E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.16E-06 | 2.65E-06 | 1.45E-06 | -- | 5.45E-07 | 1.70E-07 | 2.63E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.67E-07 | 7.18E-08 | 3.93E-08 | -- | 5.91E-08 | 1.84E-08 | 2.85E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.99E-07 | 1.29E-07 | 7.05E-08 | -- | 1.86E-07 | 5.79E-08 | 8.94E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.26E-14 | 5.40E-15 | 2.96E-15 | -- | 2.22E-15 | 6.93E-16 | 1.07E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.29E-10 | 2.27E-10 | 1.24E-10 | -- | 1.87E-12 | 5.84E-13 | 9.02E-13 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.06E-09 | 2.61E-09 | 1.43E-09 | -- | 2.68E-09 | 8.37E-10 | 1.29E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.64E-05 | 1.56E-05 | 8.56E-06 | -- | 6.44E-07 | 2.01E-07 | 3.10E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.05E-08 | 4.52E-09 | 2.48E-09 | -- | 1.86E-09 | 5.80E-10 | 8.97E-10 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.35E-08 | 1.44E-08 | 7.88E-09 | -- | 5.93E-09 | 1.85E-09 | 2.86E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.37E-08 | 1.88E-08 | 1.03E-08 | -- | 1.55E-09 | 4.83E-10 | 7.47E-10 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Project Alone Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.20E-13 | 4.08E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-13 | 9.00E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.01E-13 | 5.91E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.52E-05 | 4.70E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-04 | 2.75E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.53E-18 | 6.86E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-16 | 2.10E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-14 | 1.12E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-16 | 4.99E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.67E-16 | 9.39E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-10 | 6.00E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-13 | 1.39E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-14 | 7.98E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.61E-11 | 1.21E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.72E-10 | 1.57E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-09 | 4.43E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.55E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.70E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.23E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.34E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.52E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.96E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.32E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.49E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.84E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.17E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.56E-08 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.13E-12 | 2.21E-12 | 5.07E-13 | -- | 3.99E-13 | 1.14E-13 | 1.76E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.01E-12 | 4.35E-13 | 1.00E-13 | -- | 1.14E-13 | 3.27E-14 | 5.05E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 7.65E-12 | 3.29E-12 | 7.56E-13 | -- | 5.94E-13 | 1.71E-13 | 2.63E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.87E-06 | 1.24E-06 | 2.84E-07 | -- | 1.56E-07 | 4.49E-08 | 6.92E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.57E-05 | 6.76E-06 | 1.55E-06 | -- | 1.83E-07 | 5.26E-08 | 8.11E-08 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.80E-17 | 3.78E-17 | 8.69E-18 | -- | 6.84E-18 | 1.96E-18 | 3.03E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.34E-14 | 1.43E-14 | 3.30E-15 | -- | 1.43E-15 | 4.10E-16 | 6.32E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.84E-14 | 2.94E-14 | 6.75E-15 | -- | 2.66E-14 | 7.63E-15 | 1.18E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.88E-15 | 3.39E-15 | 7.78E-16 | -- | 3.06E-16 | 8.79E-17 | 1.36E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.21E-14 | 5.22E-15 | 1.20E-15 | -- | 9.43E-16 | 2.71E-16 | 4.17E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.59E-10 | 2.83E-10 | 6.51E-11 | -- | 2.56E-11 | 7.35E-12 | 1.13E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.04E-12 | 8.76E-13 | 2.01E-13 | -- | 6.33E-14 | 1.82E-14 | 2.80E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.02E-13 | 4.38E-14 | 1.01E-14 | -- | 3.96E-15 | 1.14E-15 | 1.75E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.19E-10 | 5.11E-11 | 1.17E-11 | -- | 6.00E-12 | 1.72E-12 | 2.66E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.15E-09 | 9.24E-10 | 2.12E-10 | -- | 8.35E-12 | 2.40E-12 | 3.70E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.68E-10 | 7.24E-11 | 1.66E-11 | -- | 7.20E-12 | 2.07E-12 | 3.19E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.10E-06 | 4.71E-07 | 1.08E-07 | -- | 4.25E-08 | 1.22E-08 | 1.88E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.45E-07 | 6.23E-08 | 1.43E-08 | -- | 1.69E-09 | 4.85E-10 | 7.47E-10 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.54E-09 | 6.63E-10 | 1.52E-10 | -- | 5.99E-11 | 1.72E-11 | 2.65E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.38E-07 | 5.93E-08 | 1.36E-08 | -- | 1.61E-09 | 4.62E-10 | 7.12E-10 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.52E-09 | 3.66E-09 | 8.42E-10 | -- | 3.31E-10 | 9.51E-11 | 1.47E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.64E-06 | 1.56E-06 | 3.59E-07 | -- | 1.98E-07 | 5.68E-08 | 8.76E-08 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.02E-10 | 4.38E-11 | 1.01E-11 | -- | 1.58E-12 | 4.55E-13 | 7.02E-13 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.18E-08 | 9.35E-09 | 2.15E-09 | -- | 7.61E-10 | 2.18E-10 | 3.37E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.61E-07 | 2.84E-07 | 6.53E-08 | -- | 2.57E-08 | 7.38E-09 | 1.14E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.29E-05 | 9.83E-06 | 2.26E-06 | -- | 5.33E-08 | 1.53E-08 | 2.36E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.04E-05 | 8.77E-06 | 2.02E-06 | -- | 3.96E-07 | 1.14E-07 | 1.75E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.53E-07 | 2.38E-07 | 5.47E-08 | -- | 4.30E-08 | 1.23E-08 | 1.90E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.92E-07 | 4.27E-07 | 9.80E-08 | -- | 1.35E-07 | 3.87E-08 | 5.97E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.16E-14 | 1.79E-14 | 4.11E-15 | -- | 1.62E-15 | 4.64E-16 | 7.15E-16 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.75E-09 | 7.53E-10 | 1.73E-10 | -- | 1.36E-12 | 3.91E-13 | 6.03E-13 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.01E-08 | 8.64E-09 | 1.98E-09 | -- | 1.95E-09 | 5.60E-10 | 8.64E-10 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.21E-04 | 5.18E-05 | 1.19E-05 | -- | 4.68E-07 | 1.34E-07 | 2.07E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.48E-08 | 1.50E-08 | 3.44E-09 | -- | 1.35E-09 | 3.89E-10 | 5.99E-10 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.11E-07 | 4.77E-08 | 1.10E-08 | -- | 4.31E-09 | 1.24E-09 | 1.91E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.45E-07 | 6.23E-08 | 1.43E-08 | -- | 1.13E-09 | 3.23E-10 | 4.99E-10 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 2.81E-11 | 4.16E-11 | 3.74E-12 | 1.61E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.81E-11 |
| Anthracene | 2.49E-12 | 3.69E-12 | 5.23E-15 | 4.18E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.93E-12 |
| Fluorene | 2.80E-11 | 4.17E-11 | 4.97E-14 | 1.18E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.25E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.98E-07 | 7.32E-07 | 9.44E-08 | 3.46E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.99E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.50E-06 | 2.69E-06 | 5.55E-07 | 6.58E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.20E-15 | 4.59E-15 | 2.68E-14 | 6.25E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-14 |
| Bromoform | 1.39E-12 | 2.07E-12 | 1.41E-12 | 5.75E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.92E-12 |
| Carbon Tetrachloride | 1.72E-12 | 2.39E-12 | 2.23E-11 | 6.38E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-11 |
| Chloroform | 5.48E-13 | 7.99E-13 | 2.72E-12 | 6.03E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-12 |
| Trichlorofluoromethane (FREON 11) | 4.41E-13 | 6.34E-13 | 3.38E-12 | 8.82E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.08E-09 | 1.61E-09 | 2.37E-09 | 3.95E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.11E-09 |
| 1,2,4-Trichlorobenzene | 9.75E-12 | 1.45E-11 | 5.42E-12 | 1.36E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.29E-11 |
| 1,2-Dichlorobenzene | 1.17E-12 | 1.65E-12 | 8.59E-12 | 3.23E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-11 |
| Hexachlorobenzene | 1.02E-10 | 1.50E-10 | 1.04E-10 | 1.13E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.49E-10 |
| Pentachlorobenzene | 2.16E-09 | 3.21E-09 | 1.36E-10 | 1.98E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.82E-09 |
| Pentachlorophenol | 2.21E-08 | 2.77E-10 | 9.45E-09 | 1.25E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.47E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.09E-06 | 1.31E-06 | 1.13E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-06 |
| Arsenic | 2.70E-07 | 3.44E-08 | 3.98E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.33E-07 |
| Barium | 3.12E-09 | 1.87E-09 | 7.93E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.52E-09 |
| Beryllium | 3.84E-08 | 1.34E-08 | 7.10E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-07 |
| Boron | 6.20E-07 | 7.22E-07 | 5.85E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-06 |
| Cadmium | 1.39E-05 | 1.71E-05 | 7.99E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-05 |
| Chromium (Total) | 2.77E-10 | 1.87E-11 | 1.57E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-10 |
| Chromium VI | 5.91E-08 | 3.99E-09 | 3.36E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.80E-08 |
| Cobalt | 8.74E-07 | 2.15E-07 | 1.59E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-06 |
| Lead | 1.26E-05 | 1.17E-05 | 7.06E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-05 |
| Mercury - Inorganic | 1.08E-05 | 1.11E-05 | 2.52E-06 | 1.66E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.80E-05 |
| Methyl Mercury | 1.81E-06 | 6.11E-07 | 1.88E-07 | 7.03E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.23E-06 |
| Nickel | 1.00E-06 | 3.47E-07 | 2.72E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-06 |
| Phosphorus | 4.24E-12 | 5.47E-12 | 4.99E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-11 |
| Selenium | 1.78E-08 | 1.28E-09 | 1.32E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-08 |
| Silver | 1.88E-07 | 1.04E-07 | 6.89E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-07 |
| Thallium | 8.85E-05 | 3.88E-06 | 1.65E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.78E-04 |
| Tin | 1.83E-08 | 1.18E-08 | 7.17E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.65E-08 |
| Vanadium | 3.21E-08 | 1.38E-08 | 1.14E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 |
| Zinc | 4.72E-07 | 5.28E-07 | 4.47E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-06 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.04E-12 | 2.17E-12 | 1.19E-12 | -- | 1.78E-12 | 5.56E-13 | 8.60E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.94E-13 | 4.27E-13 | 2.34E-13 | -- | 5.10E-13 | 1.59E-13 | 2.46E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 7.51E-12 | 3.23E-12 | 1.77E-12 | -- | 2.66E-12 | 8.29E-13 | 1.28E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.82E-06 | 1.21E-06 | 6.63E-07 | -- | 6.98E-07 | 2.18E-07 | 3.37E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.66E-05 | 7.14E-06 | 3.91E-06 | -- | 8.82E-07 | 2.75E-07 | 4.25E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.64E-17 | 3.71E-17 | 2.03E-17 | -- | 3.06E-17 | 9.54E-18 | 1.47E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.28E-14 | 1.41E-14 | 7.72E-15 | -- | 6.38E-15 | 1.99E-15 | 3.08E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.71E-14 | 2.89E-14 | 1.58E-14 | -- | 1.19E-13 | 3.70E-14 | 5.73E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.73E-15 | 3.33E-15 | 1.82E-15 | -- | 1.37E-15 | 4.27E-16 | 6.60E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.19E-14 | 5.12E-15 | 2.80E-15 | -- | 4.22E-15 | 1.31E-15 | 2.03E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.47E-10 | 2.78E-10 | 1.52E-10 | -- | 1.14E-10 | 3.57E-11 | 5.52E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.00E-12 | 8.60E-13 | 4.71E-13 | -- | 2.83E-13 | 8.84E-14 | 1.37E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.00E-13 | 4.31E-14 | 2.36E-14 | -- | 1.77E-14 | 5.53E-15 | 8.55E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.17E-10 | 5.01E-11 | 2.75E-11 | -- | 2.68E-11 | 8.37E-12 | 1.29E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.11E-09 | 9.07E-10 | 4.97E-10 | -- | 3.74E-11 | 1.17E-11 | 1.80E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.65E-10 | 7.11E-11 | 3.89E-11 | -- | 3.22E-11 | 1.00E-11 | 1.55E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.16E-06 | 4.98E-07 | 2.73E-07 | -- | 2.05E-07 | 6.39E-08 | 9.88E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-07 | 6.59E-08 | 3.61E-08 | -- | 8.14E-09 | 2.54E-09 | 3.92E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-09 | 7.01E-10 | 3.84E-10 | -- | 2.89E-10 | 9.00E-11 | 1.39E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.46E-07 | 6.28E-08 | 3.44E-08 | -- | 7.75E-09 | 2.42E-09 | 3.74E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.02E-09 | 3.88E-09 | 2.12E-09 | -- | 1.60E-09 | 4.98E-10 | 7.69E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.85E-06 | 1.65E-06 | 9.06E-07 | -- | 9.54E-07 | 2.97E-07 | 4.60E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.08E-10 | 4.64E-11 | 2.54E-11 | -- | 7.64E-12 | 2.38E-12 | 3.68E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.30E-08 | 9.89E-09 | 5.42E-09 | -- | 3.67E-09 | 1.14E-09 | 1.77E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 7.00E-07 | 3.01E-07 | 1.65E-07 | -- | 1.24E-07 | 3.86E-08 | 5.97E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.42E-05 | 1.04E-05 | 5.69E-06 | -- | 2.57E-07 | 8.00E-08 | 1.24E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.39E-05 | 5.97E-06 | 3.27E-06 | -- | 1.23E-06 | 3.83E-07 | 5.93E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.85E-07 | 2.52E-07 | 1.38E-07 | -- | 2.07E-07 | 6.46E-08 | 9.99E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.05E-06 | 4.51E-07 | 2.47E-07 | -- | 6.50E-07 | 2.03E-07 | 3.13E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.40E-14 | 1.89E-14 | 1.04E-14 | -- | 7.79E-15 | 2.43E-15 | 3.75E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.85E-09 | 7.97E-10 | 4.36E-10 | -- | 6.56E-12 | 2.05E-12 | 3.16E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.13E-08 | 9.14E-09 | 5.01E-09 | -- | 9.41E-09 | 2.93E-09 | 4.53E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.27E-04 | 5.48E-05 | 3.00E-05 | -- | 2.26E-06 | 7.04E-07 | 1.09E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.68E-08 | 1.58E-08 | 8.67E-09 | -- | 6.52E-09 | 2.03E-09 | 3.14E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.17E-07 | 5.04E-08 | 2.76E-08 | -- | 2.08E-08 | 6.47E-09 | 1.00E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.53E-07 | 6.59E-08 | 3.61E-08 | -- | 5.43E-09 | 1.69E-09 | 2.62E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-12 | 1.33E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.57E-13 | 2.93E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-12 | 1.92E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-04 | 1.52E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.13E-04 | 8.42E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-17 | 2.23E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-15 | 6.82E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.81E-14 | 3.63E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.78E-16 | 1.62E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-15 | 3.05E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.68E-10 | 1.95E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.92E-13 | 4.53E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.09E-14 | 2.59E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-10 | 3.92E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-09 | 5.12E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.74E-09 | 9.07E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.23E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.12E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.91E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.72E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.10E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.23E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.31E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-07 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.67E-11 | 7.17E-12 | 1.65E-12 | -- | 1.30E-12 | 3.72E-13 | 5.74E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.29E-12 | 1.42E-12 | 3.25E-13 | -- | 3.71E-13 | 1.07E-13 | 1.64E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.49E-11 | 1.07E-11 | 2.46E-12 | -- | 1.93E-12 | 5.55E-13 | 8.56E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 9.33E-06 | 4.01E-06 | 9.22E-07 | -- | 5.08E-07 | 1.46E-07 | 2.25E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.50E-05 | 2.37E-05 | 5.44E-06 | -- | 6.41E-07 | 1.84E-07 | 2.84E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.86E-16 | 1.23E-16 | 2.83E-17 | -- | 2.22E-17 | 6.39E-18 | 9.85E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.09E-13 | 4.67E-14 | 1.07E-14 | -- | 4.64E-15 | 1.33E-15 | 2.05E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.22E-13 | 9.56E-14 | 2.20E-14 | -- | 8.64E-14 | 2.48E-14 | 3.82E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.56E-14 | 1.10E-14 | 2.53E-15 | -- | 9.96E-16 | 2.86E-16 | 4.41E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.95E-14 | 1.70E-14 | 3.90E-15 | -- | 3.07E-15 | 8.81E-16 | 1.36E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.14E-09 | 9.21E-10 | 2.12E-10 | -- | 8.32E-11 | 2.39E-11 | 3.69E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 6.63E-12 | 2.85E-12 | 6.55E-13 | -- | 2.06E-13 | 5.92E-14 | 9.12E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.32E-13 | 1.43E-13 | 3.28E-14 | -- | 1.29E-14 | 3.70E-15 | 5.71E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.86E-10 | 1.66E-10 | 3.82E-11 | -- | 1.95E-11 | 5.61E-12 | 8.64E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.99E-09 | 3.01E-09 | 6.91E-10 | -- | 2.72E-11 | 7.80E-12 | 1.20E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.48E-10 | 2.36E-10 | 5.41E-11 | -- | 2.34E-11 | 6.72E-12 | 1.04E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.84E-06 | 1.65E-06 | 3.79E-07 | -- | 1.49E-07 | 4.28E-08 | 6.60E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.08E-07 | 2.18E-07 | 5.01E-08 | -- | 5.92E-09 | 1.70E-09 | 2.62E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.40E-09 | 2.32E-09 | 5.34E-10 | -- | 2.10E-10 | 6.03E-11 | 9.29E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.84E-07 | 2.08E-07 | 4.78E-08 | -- | 5.64E-09 | 1.62E-09 | 2.50E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.99E-08 | 1.28E-08 | 2.95E-09 | -- | 1.16E-09 | 3.33E-10 | 5.14E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.27E-05 | 5.48E-06 | 1.26E-06 | -- | 6.93E-07 | 1.99E-07 | 3.07E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.57E-10 | 1.54E-10 | 3.53E-11 | -- | 5.55E-12 | 1.59E-12 | 2.46E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.62E-08 | 3.28E-08 | 7.53E-09 | -- | 2.67E-09 | 7.66E-10 | 1.18E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.32E-06 | 9.97E-07 | 2.29E-07 | -- | 9.01E-08 | 2.59E-08 | 3.99E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 8.01E-05 | 3.44E-05 | 7.91E-06 | -- | 1.87E-07 | 5.36E-08 | 8.26E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.60E-05 | 1.98E-05 | 4.55E-06 | -- | 8.94E-07 | 2.57E-07 | 3.96E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.94E-06 | 8.33E-07 | 1.92E-07 | -- | 1.51E-07 | 4.33E-08 | 6.67E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.48E-06 | 1.49E-06 | 3.43E-07 | -- | 4.73E-07 | 1.36E-07 | 2.09E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.46E-13 | 6.27E-14 | 1.44E-14 | -- | 5.66E-15 | 1.63E-15 | 2.51E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.14E-09 | 2.64E-09 | 6.07E-10 | -- | 4.77E-12 | 1.37E-12 | 2.11E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.04E-08 | 3.03E-08 | 6.96E-09 | -- | 6.84E-09 | 1.96E-09 | 3.03E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.22E-04 | 1.82E-04 | 4.17E-05 | -- | 1.64E-06 | 4.71E-07 | 7.26E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.22E-07 | 5.25E-08 | 1.21E-08 | -- | 4.74E-09 | 1.36E-09 | 2.10E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.89E-07 | 1.67E-07 | 3.84E-08 | -- | 1.51E-08 | 4.33E-09 | 6.68E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.08E-07 | 2.18E-07 | 5.02E-08 | -- | 3.95E-09 | 1.13E-09 | 1.75E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 9.13E-11 | 1.35E-10 | 1.22E-11 | 5.21E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-10 |
| Anthracene | 8.09E-12 | 1.20E-11 | 1.70E-14 | 7.25E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-11 |
| Fluorene | 9.11E-11 | 1.36E-10 | 1.62E-13 | 2.04E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.61E-06 | 2.38E-06 | 3.07E-07 | 5.99E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.28E-05 | 9.41E-06 | 1.94E-06 | 1.14E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.02E-14 | 1.49E-14 | 8.70E-14 | 1.08E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-13 |
| Bromoform | 4.52E-12 | 6.73E-12 | 4.58E-12 | 9.96E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-11 |
| Carbon Tetrachloride | 5.43E-12 | 7.79E-12 | 7.26E-11 | 1.11E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.64E-11 |
| Chloroform | 1.77E-12 | 2.60E-12 | 8.85E-12 | 1.05E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-11 |
| Trichlorofluoromethane (FREON 11) | 1.41E-12 | 2.06E-12 | 1.10E-11 | 1.53E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.52E-09 | 5.24E-09 | 7.70E-09 | 6.85E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-08 |
| 1,2,4-Trichlorobenzene | 3.17E-11 | 4.71E-11 | 1.76E-11 | 2.35E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| 1,2-Dichlorobenzene | 3.71E-12 | 5.37E-12 | 2.79E-11 | 5.59E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-11 |
| Hexachlorobenzene | 3.30E-10 | 4.86E-10 | 3.37E-10 | 1.97E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-09 |
| Pentachlorobenzene | 7.03E-09 | 1.05E-08 | 4.41E-10 | 3.43E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-08 |
| Pentachlorophenol | 3.87E-08 | 9.00E-10 | 3.08E-08 | 2.17E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.29E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 6.56E-06 | 4.60E-06 | 3.95E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-05 |
| Arsenic | 7.91E-07 | 1.21E-07 | 1.39E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-06 |
| Barium | 9.75E-09 | 6.54E-09 | 2.78E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-08 |
| Beryllium | 1.16E-07 | 4.69E-08 | 2.49E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.14E-07 |
| Boron | 2.09E-06 | 2.53E-06 | 2.05E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.87E-06 |
| Cadmium | 4.73E-05 | 5.99E-05 | 2.80E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-04 |
| Chromium (Total) | 8.04E-10 | 6.55E-11 | 5.52E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-09 |
| Chromium VI | 1.72E-07 | 1.40E-08 | 1.18E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-07 |
| Cobalt | 2.60E-06 | 7.54E-07 | 5.57E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.11E-06 |
| Lead | 4.12E-05 | 4.09E-05 | 2.47E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-04 |
| Mercury - Inorganic | 2.30E-05 | 2.51E-05 | 5.69E-06 | 2.88E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-04 |
| Methyl Mercury | 4.05E-06 | 2.14E-06 | 6.58E-07 | 1.22E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-05 |
| Nickel | 3.02E-06 | 1.22E-06 | 9.54E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-05 |
| Phosphorus | 1.45E-11 | 1.92E-11 | 1.75E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.57E-11 |
| Selenium | 5.17E-08 | 4.50E-09 | 4.63E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.60E-08 |
| Silver | 5.85E-07 | 3.65E-07 | 2.42E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-06 |
| Thallium | 2.56E-04 | 1.36E-05 | 5.80E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.19E-04 |
| Tin | 5.76E-08 | 4.15E-08 | 2.51E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-07 |
| Vanadium | 9.80E-08 | 4.84E-08 | 4.00E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.71E-07 |
| Zinc | 1.58E-06 | 1.85E-06 | 1.57E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-06 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.95E-12 | 3.85E-12 | 2.11E-12 | -- | 3.17E-12 | 9.88E-13 | 1.53E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.77E-12 | 7.59E-13 | 4.16E-13 | -- | 9.07E-13 | 2.83E-13 | 4.37E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.34E-11 | 5.74E-12 | 3.14E-12 | -- | 4.73E-12 | 1.47E-12 | 2.28E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.99E-06 | 2.15E-06 | 1.17E-06 | -- | 1.24E-06 | 3.86E-07 | 5.96E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.09E-05 | 1.33E-05 | 7.27E-06 | -- | 1.64E-06 | 5.11E-07 | 7.91E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.54E-16 | 6.60E-17 | 3.62E-17 | -- | 5.44E-17 | 1.70E-17 | 2.62E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.83E-14 | 2.51E-14 | 1.37E-14 | -- | 1.13E-14 | 3.54E-15 | 5.47E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.19E-13 | 5.13E-14 | 2.81E-14 | -- | 2.11E-13 | 6.59E-14 | 1.02E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.38E-14 | 5.91E-15 | 3.24E-15 | -- | 2.43E-15 | 7.59E-16 | 1.17E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.12E-14 | 9.10E-15 | 4.99E-15 | -- | 7.50E-15 | 2.34E-15 | 3.61E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.15E-09 | 4.94E-10 | 2.71E-10 | -- | 2.04E-10 | 6.35E-11 | 9.81E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.56E-12 | 1.53E-12 | 8.38E-13 | -- | 5.04E-13 | 1.57E-13 | 2.43E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.78E-13 | 7.65E-14 | 4.19E-14 | -- | 3.15E-14 | 9.83E-15 | 1.52E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.07E-10 | 8.92E-11 | 4.88E-11 | -- | 4.77E-11 | 1.49E-11 | 2.30E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.75E-09 | 1.61E-09 | 8.84E-10 | -- | 6.64E-11 | 2.07E-11 | 3.20E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.94E-10 | 1.26E-10 | 6.92E-11 | -- | 5.73E-11 | 1.79E-11 | 2.76E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.16E-06 | 9.29E-07 | 5.09E-07 | -- | 3.83E-07 | 1.19E-07 | 1.84E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.86E-07 | 1.23E-07 | 6.73E-08 | -- | 1.52E-08 | 4.73E-09 | 7.32E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.04E-09 | 1.31E-09 | 7.17E-10 | -- | 5.39E-10 | 1.68E-10 | 2.60E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.72E-07 | 1.17E-07 | 6.41E-08 | -- | 1.45E-08 | 4.50E-09 | 6.96E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.68E-08 | 7.23E-09 | 3.96E-09 | -- | 2.98E-09 | 9.29E-10 | 1.44E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.18E-06 | 3.09E-06 | 1.69E-06 | -- | 1.78E-06 | 5.55E-07 | 8.57E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.01E-10 | 8.65E-11 | 4.74E-11 | -- | 1.43E-11 | 4.44E-12 | 6.87E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-08 | 1.85E-08 | 1.01E-08 | -- | 6.84E-09 | 2.13E-09 | 3.30E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.61E-07 | 3.07E-07 | -- | 2.31E-07 | 7.21E-08 | 1.11E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.51E-05 | 1.94E-05 | 1.06E-05 | -- | 4.79E-07 | 1.49E-07 | 2.31E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.21E-05 | 9.51E-06 | 5.21E-06 | -- | 1.96E-06 | 6.11E-07 | 9.44E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.09E-06 | 4.69E-07 | 2.57E-07 | -- | 3.86E-07 | 1.20E-07 | 1.86E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.96E-06 | 8.42E-07 | 4.61E-07 | -- | 1.21E-06 | 3.78E-07 | 5.85E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 8.21E-14 | 3.53E-14 | 1.93E-14 | -- | 1.45E-14 | 4.53E-15 | 7.01E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.46E-09 | 1.49E-09 | 8.15E-10 | -- | 1.22E-11 | 3.82E-12 | 5.90E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.97E-08 | 1.71E-08 | 9.34E-09 | -- | 1.76E-08 | 5.47E-09 | 8.46E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.38E-04 | 1.02E-04 | 5.60E-05 | -- | 4.21E-06 | 1.31E-06 | 2.03E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.87E-08 | 2.95E-08 | 1.62E-08 | -- | 1.22E-08 | 3.79E-09 | 5.86E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.19E-07 | 9.40E-08 | 5.15E-08 | -- | 3.87E-08 | 1.21E-08 | 1.87E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.86E-07 | 1.23E-07 | 6.73E-08 | -- | 1.01E-08 | 3.16E-09 | 4.88E-09 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-12 | 2.36E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.35E-13 | 5.20E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-12 | 3.42E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-04 | 2.69E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-03 | 1.48E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.34E-17 | 3.97E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-15 | 1.21E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-14 | 6.45E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-15 | 2.88E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-15 | 5.43E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-09 | 3.47E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-12 | 8.06E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-13 | 4.61E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-10 | 6.96E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-09 | 9.10E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 | 1.20E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.29E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.03E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.03E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.79E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.34E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.38E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.44E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.76E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.94E-07 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.97E-11 | 1.28E-11 | 2.93E-12 | -- | 2.30E-12 | 6.62E-13 | 1.02E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.85E-12 | 2.51E-12 | 5.78E-13 | -- | 6.59E-13 | 1.89E-13 | 2.92E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.42E-11 | 1.90E-11 | 4.37E-12 | -- | 3.44E-12 | 9.87E-13 | 1.52E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.65E-05 | 7.11E-06 | 1.63E-06 | -- | 8.99E-07 | 2.58E-07 | 3.98E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.40E-05 | 1.01E-05 | -- | 1.19E-06 | 3.42E-07 | 5.28E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.09E-16 | 2.19E-16 | 5.03E-17 | -- | 3.95E-17 | 1.14E-17 | 1.75E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.93E-13 | 8.30E-14 | 1.91E-14 | -- | 8.25E-15 | 2.37E-15 | 3.65E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.95E-13 | 1.70E-13 | 3.91E-14 | -- | 1.54E-13 | 4.41E-14 | 6.80E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.56E-14 | 1.96E-14 | 4.50E-15 | -- | 1.77E-15 | 5.08E-16 | 7.84E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.02E-14 | 3.02E-14 | 6.93E-15 | -- | 5.45E-15 | 1.57E-15 | 2.41E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.81E-09 | 1.64E-09 | 3.76E-10 | -- | 1.48E-10 | 4.25E-11 | 6.55E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.18E-11 | 5.07E-12 | 1.16E-12 | -- | 3.66E-13 | 1.05E-13 | 1.62E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 5.90E-13 | 2.54E-13 | 5.83E-14 | -- | 2.29E-14 | 6.58E-15 | 1.01E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.87E-10 | 2.95E-10 | 6.79E-11 | -- | 3.47E-11 | 9.97E-12 | 1.54E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.24E-08 | 5.34E-09 | 1.23E-09 | -- | 4.83E-11 | 1.39E-11 | 2.14E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 9.74E-10 | 4.19E-10 | 9.62E-11 | -- | 4.16E-11 | 1.20E-11 | 1.84E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 7.16E-06 | 3.08E-06 | 7.07E-07 | -- | 2.78E-07 | 7.99E-08 | 1.23E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.47E-07 | 4.07E-07 | 9.36E-08 | -- | 1.10E-08 | 3.17E-09 | 4.89E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.01E-08 | 4.33E-09 | 9.96E-10 | -- | 3.92E-10 | 1.12E-10 | 1.73E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 9.01E-07 | 3.88E-07 | 8.90E-08 | -- | 1.05E-08 | 3.02E-09 | 4.65E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.58E-08 | 2.40E-08 | 5.51E-09 | -- | 2.17E-09 | 6.22E-10 | 9.59E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.38E-05 | 1.02E-05 | 2.35E-06 | -- | 1.29E-06 | 3.71E-07 | 5.73E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.67E-10 | 2.87E-10 | 6.59E-11 | -- | 1.04E-11 | 2.98E-12 | 4.59E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-07 | 6.12E-08 | 1.41E-08 | -- | 4.98E-09 | 1.43E-09 | 2.20E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.33E-06 | 1.86E-06 | 4.27E-07 | -- | 1.68E-07 | 4.83E-08 | 7.44E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.49E-04 | 6.42E-05 | 1.47E-05 | -- | 3.48E-07 | 9.99E-08 | 1.54E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.33E-05 | 3.15E-05 | 7.24E-06 | -- | 1.42E-06 | 4.09E-07 | 6.30E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.61E-06 | 1.55E-06 | 3.57E-07 | -- | 2.81E-07 | 8.06E-08 | 1.24E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.49E-06 | 2.79E-06 | 6.41E-07 | -- | 8.82E-07 | 2.53E-07 | 3.90E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.72E-13 | 1.17E-13 | 2.69E-14 | -- | 1.06E-14 | 3.04E-15 | 4.68E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.15E-08 | 4.93E-09 | 1.13E-09 | -- | 8.91E-12 | 2.56E-12 | 3.94E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.31E-07 | 5.65E-08 | 1.30E-08 | -- | 1.28E-08 | 3.67E-09 | 5.65E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 7.88E-04 | 3.39E-04 | 7.78E-05 | -- | 3.06E-06 | 8.79E-07 | 1.35E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.28E-07 | 9.78E-08 | 2.25E-08 | -- | 8.84E-09 | 2.54E-09 | 3.91E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.24E-07 | 3.11E-07 | 7.15E-08 | -- | 2.81E-08 | 8.08E-09 | 1.25E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.47E-07 | 4.07E-07 | 9.36E-08 | -- | 7.36E-09 | 2.11E-09 | 3.26E-09 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.62E-10 | 2.41E-10 | 2.16E-11 | 9.25E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.66E-10 |
| Anthracene | 1.44E-11 | 2.13E-11 | 3.02E-14 | 7.98E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-11 |
| Fluorene | 1.62E-10 | 2.41E-10 | 2.88E-13 | 2.25E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.77E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.84E-06 | 4.21E-06 | 5.43E-07 | 6.59E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.20E-05 | 1.75E-05 | 3.61E-06 | 1.25E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.81E-14 | 2.66E-14 | 1.55E-13 | 1.19E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-13 |
| Bromoform | 8.04E-12 | 1.20E-11 | 8.15E-12 | 1.10E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-11 |
| Carbon Tetrachloride | 9.52E-12 | 1.38E-11 | 1.29E-10 | 1.22E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-10 |
| Chloroform | 3.13E-12 | 4.62E-12 | 1.57E-11 | 1.15E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-11 |
| Trichlorofluoromethane (FREON 11) | 2.49E-12 | 3.66E-12 | 1.96E-11 | 1.68E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.26E-09 | 9.32E-09 | 1.37E-08 | 7.54E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.54E-08 |
| 1,2,4-Trichlorobenzene | 5.63E-11 | 8.37E-11 | 3.13E-11 | 2.59E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-10 |
| 1,2-Dichlorobenzene | 6.53E-12 | 9.55E-12 | 4.97E-11 | 6.15E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.67E-11 |
| Hexachlorobenzene | 5.85E-10 | 8.65E-10 | 6.00E-10 | 2.16E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-09 |
| Pentachlorobenzene | 1.25E-08 | 1.86E-08 | 7.84E-10 | 3.77E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-08 |
| Pentachlorophenol | 4.30E-08 | 1.60E-09 | 5.47E-08 | 2.39E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.21E-05 | 8.58E-06 | 7.37E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-05 |
| Arsenic | 1.44E-06 | 2.25E-07 | 2.60E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-06 |
| Barium | 1.79E-08 | 1.22E-08 | 5.19E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-08 |
| Beryllium | 2.12E-07 | 8.74E-08 | 4.64E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-06 |
| Boron | 3.88E-06 | 4.72E-06 | 3.83E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.07E-06 |
| Cadmium | 8.79E-05 | 1.12E-04 | 5.22E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-04 |
| Chromium (Total) | 1.46E-09 | 1.22E-10 | 1.03E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-09 |
| Chromium VI | 3.12E-07 | 2.61E-08 | 2.20E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.66E-07 |
| Cobalt | 4.75E-06 | 1.41E-06 | 1.04E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-05 |
| Lead | 7.61E-05 | 7.63E-05 | 4.61E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-04 |
| Mercury - Inorganic | 3.44E-05 | 3.99E-05 | 9.05E-06 | 3.17E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-04 |
| Methyl Mercury | 5.90E-06 | 3.99E-06 | 1.23E-06 | 1.34E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-05 |
| Nickel | 5.53E-06 | 2.27E-06 | 1.78E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-05 |
| Phosphorus | 2.70E-11 | 3.58E-11 | 3.27E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-11 |
| Selenium | 9.39E-08 | 8.40E-09 | 8.65E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-07 |
| Silver | 1.07E-06 | 6.81E-07 | 4.51E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-06 |
| Thallium | 4.65E-04 | 2.54E-05 | 1.08E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-03 |
| Tin | 1.06E-07 | 7.74E-08 | 4.68E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.51E-07 |
| Vanadium | 1.79E-07 | 9.03E-08 | 7.45E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-06 |
| Zinc | 2.93E-06 | 3.45E-06 | 2.93E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-05 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.12E-11 | 4.80E-12 | 2.63E-12 | -- | 3.95E-12 | 1.23E-12 | 1.91E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.20E-12 | 9.47E-13 | 5.18E-13 | -- | 1.13E-12 | 3.52E-13 | 5.45E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.67E-11 | 7.16E-12 | 3.92E-12 | -- | 5.90E-12 | 1.84E-12 | 2.84E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.22E-06 | 2.68E-06 | 1.47E-06 | -- | 1.54E-06 | 4.81E-07 | 7.43E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.28E-05 | 1.84E-05 | 1.01E-05 | -- | 2.27E-06 | 7.09E-07 | 1.10E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.92E-16 | 8.23E-17 | 4.51E-17 | -- | 6.78E-17 | 2.11E-17 | 3.27E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.27E-14 | 3.12E-14 | 1.71E-14 | -- | 1.42E-14 | 4.41E-15 | 6.82E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.49E-13 | 6.40E-14 | 3.50E-14 | -- | 2.63E-13 | 8.21E-14 | 1.27E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.72E-14 | 7.37E-15 | 4.04E-15 | -- | 3.04E-15 | 9.47E-16 | 1.46E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.64E-14 | 1.14E-14 | 6.22E-15 | -- | 9.35E-15 | 2.92E-15 | 4.51E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.43E-09 | 6.16E-10 | 3.38E-10 | -- | 2.54E-10 | 7.91E-11 | 1.22E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.44E-12 | 1.91E-12 | 1.04E-12 | -- | 6.28E-13 | 1.96E-13 | 3.03E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.22E-13 | 9.55E-14 | 5.23E-14 | -- | 3.93E-14 | 1.23E-14 | 1.89E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.59E-10 | 1.11E-10 | 6.09E-11 | -- | 5.95E-11 | 1.86E-11 | 2.87E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.68E-09 | 2.01E-09 | 1.10E-09 | -- | 8.29E-11 | 2.58E-11 | 3.99E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.67E-10 | 1.58E-10 | 8.64E-11 | -- | 7.14E-11 | 2.23E-11 | 3.44E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.99E-06 | 1.29E-06 | 7.05E-07 | -- | 5.30E-07 | 1.65E-07 | 2.56E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.96E-07 | 1.70E-07 | 9.33E-08 | -- | 2.10E-08 | 6.56E-09 | 1.01E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.22E-09 | 1.81E-09 | 9.93E-10 | -- | 7.47E-10 | 2.33E-10 | 3.60E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.77E-07 | 1.62E-07 | 8.88E-08 | -- | 2.00E-08 | 6.24E-09 | 9.65E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.33E-08 | 1.00E-08 | 5.49E-09 | -- | 4.13E-09 | 1.29E-09 | 1.99E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.94E-06 | 4.27E-06 | 2.34E-06 | -- | 2.46E-06 | 7.68E-07 | 1.19E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.79E-10 | 1.20E-10 | 6.57E-11 | -- | 1.98E-11 | 6.16E-12 | 9.52E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.95E-08 | 2.56E-08 | 1.40E-08 | -- | 9.48E-09 | 2.96E-09 | 4.57E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.81E-06 | 7.78E-07 | 4.26E-07 | -- | 3.20E-07 | 9.98E-08 | 1.54E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.24E-05 | 2.68E-05 | 1.47E-05 | -- | 6.63E-07 | 2.07E-07 | 3.20E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.31E-05 | 9.95E-06 | 5.45E-06 | -- | 2.05E-06 | 6.39E-07 | 9.87E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.51E-06 | 6.50E-07 | 3.56E-07 | -- | 5.35E-07 | 1.67E-07 | 2.58E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.71E-06 | 1.17E-06 | 6.39E-07 | -- | 1.68E-06 | 5.24E-07 | 8.10E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.14E-13 | 4.89E-14 | 2.68E-14 | -- | 2.01E-14 | 6.28E-15 | 9.71E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.79E-09 | 2.06E-09 | 1.13E-09 | -- | 1.70E-11 | 5.29E-12 | 8.18E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.50E-08 | 2.36E-08 | 1.29E-08 | -- | 2.43E-08 | 7.59E-09 | 1.17E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.29E-04 | 1.42E-04 | 7.76E-05 | -- | 5.83E-06 | 1.82E-06 | 2.81E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.52E-08 | 4.09E-08 | 2.24E-08 | -- | 1.68E-08 | 5.25E-09 | 8.12E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.03E-07 | 1.30E-07 | 7.13E-08 | -- | 5.36E-08 | 1.67E-08 | 2.58E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.96E-07 | 1.70E-07 | 9.33E-08 | -- | 1.40E-08 | 4.37E-09 | 6.76E-09 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.74E-12 | 3.44E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-12 | 7.30E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.86E-12 | 4.72E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.58E-03 | 3.59E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-02 | 4.47E-02 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-14 | 1.63E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.39E-11 | 4.40E-11 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.89E-11 | 3.96E-11 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-13 | 2.29E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-11 | 1.21E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-08 | 1.57E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-10 | 1.70E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-12 | 3.31E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-08 | 1.44E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-08 | 3.97E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-08 | 3.28E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.94E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.97E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.36E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.62E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.00E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.59E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.22E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.53E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.01E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.85E-07 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.70E-11 | 1.59E-11 | 3.65E-12 | -- | 2.87E-12 | 8.25E-13 | 1.27E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.30E-12 | 3.14E-12 | 7.21E-13 | -- | 8.22E-13 | 2.36E-13 | 3.64E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 5.52E-11 | 2.37E-11 | 5.45E-12 | -- | 4.29E-12 | 1.23E-12 | 1.90E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.06E-05 | 8.86E-06 | 2.04E-06 | -- | 1.12E-06 | 3.22E-07 | 4.96E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.42E-04 | 6.10E-05 | 1.40E-05 | -- | 1.65E-06 | 4.75E-07 | 7.32E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 6.35E-16 | 2.73E-16 | 6.27E-17 | -- | 4.93E-17 | 1.42E-17 | 2.18E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.41E-13 | 1.04E-13 | 2.38E-14 | -- | 1.03E-14 | 2.95E-15 | 4.56E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.93E-13 | 2.12E-13 | 4.87E-14 | -- | 1.92E-13 | 5.50E-14 | 8.48E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 5.68E-14 | 2.44E-14 | 5.61E-15 | -- | 2.21E-15 | 6.34E-16 | 9.77E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.75E-14 | 3.76E-14 | 8.64E-15 | -- | 6.80E-15 | 1.95E-15 | 3.01E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.75E-09 | 2.04E-09 | 4.69E-10 | -- | 1.85E-10 | 5.30E-11 | 8.17E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.47E-11 | 6.32E-12 | 1.45E-12 | -- | 4.57E-13 | 1.31E-13 | 2.02E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 7.36E-13 | 3.16E-13 | 7.27E-14 | -- | 2.86E-14 | 8.21E-15 | 1.27E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.57E-10 | 3.68E-10 | 8.47E-11 | -- | 4.33E-11 | 1.24E-11 | 1.92E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.55E-08 | 6.67E-09 | 1.53E-09 | -- | 6.02E-11 | 1.73E-11 | 2.67E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.22E-09 | 5.22E-10 | 1.20E-10 | -- | 5.19E-11 | 1.49E-11 | 2.30E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.92E-06 | 4.26E-06 | 9.80E-07 | -- | 3.85E-07 | 1.11E-07 | 1.71E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.64E-07 | 1.30E-07 | -- | 1.53E-08 | 4.39E-09 | 6.77E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.40E-08 | 6.01E-09 | 1.38E-09 | -- | 5.43E-10 | 1.56E-10 | 2.40E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.25E-06 | 5.37E-07 | 1.23E-07 | -- | 1.46E-08 | 4.18E-09 | 6.44E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.73E-08 | 3.32E-08 | 7.63E-09 | -- | 3.00E-09 | 8.62E-10 | 1.33E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.29E-05 | 1.42E-05 | 3.25E-06 | -- | 1.79E-06 | 5.15E-07 | 7.93E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.24E-10 | 3.97E-10 | 9.13E-11 | -- | 1.44E-11 | 4.12E-12 | 6.36E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.97E-07 | 8.48E-08 | 1.95E-08 | -- | 6.89E-09 | 1.98E-09 | 3.05E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.99E-06 | 2.58E-06 | 5.92E-07 | -- | 2.33E-07 | 6.69E-08 | 1.03E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.07E-04 | 8.89E-05 | 2.04E-05 | -- | 4.82E-07 | 1.38E-07 | 2.13E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.67E-05 | 3.30E-05 | 7.57E-06 | -- | 1.49E-06 | 4.28E-07 | 6.59E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.01E-06 | 2.15E-06 | 4.95E-07 | -- | 3.89E-07 | 1.12E-07 | 1.72E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.99E-06 | 3.86E-06 | 8.88E-07 | -- | 1.22E-06 | 3.51E-07 | 5.41E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.77E-13 | 1.62E-13 | 3.72E-14 | -- | 1.46E-14 | 4.21E-15 | 6.48E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.59E-08 | 6.83E-09 | 1.57E-09 | -- | 1.23E-11 | 3.54E-12 | 5.46E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.82E-07 | 7.83E-08 | 1.80E-08 | -- | 1.77E-08 | 5.08E-09 | 7.83E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.09E-03 | 4.69E-04 | 1.08E-04 | -- | 4.24E-06 | 1.22E-06 | 1.88E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.15E-07 | 1.36E-07 | 3.11E-08 | -- | 1.22E-08 | 3.52E-09 | 5.42E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.00E-06 | 4.31E-07 | 9.91E-08 | -- | 3.90E-08 | 1.12E-08 | 1.73E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.64E-07 | 1.30E-07 | -- | 1.02E-08 | 2.93E-09 | 4.52E-09 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.64E-10 | 6.65E-10 | 4.41E-11 | 3.26E-10 | -- | -- | -- | -- | 1.40E-12 | 7.42E-12 | 2.14E-13 | 4.14E-13 | 4.03E-13 | -- | -- | 1.47E-09 |
| Anthracene | 3.23E-11 | 5.89E-11 | 6.15E-14 | 2.54E-15 | -- | -- | -- | -- | 2.08E-13 | 1.02E-12 | 3.50E-14 | 7.20E-14 | 7.00E-14 | -- | -- | 1.05E-10 |
| Fluorene | 3.64E-10 | 6.65E-10 | 5.85E-13 | 7.16E-14 | -- | -- | -- | -- | 1.88E-12 | 9.51E-12 | 2.94E-13 | 5.84E-13 | 5.67E-13 | -- | -- | 1.13E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 6.38E-06 | 1.16E-05 | 1.11E-06 | 2.10E-08 | -- | -- | -- | -- | 1.92E-05 | 6.10E-05 | 4.40E-06 | 1.05E-07 | 1.02E-07 | -- | -- | 1.37E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.37E-05 | 5.36E-05 | 8.16E-06 | 3.99E-06 | -- | -- | -- | -- | 2.20E-04 | 9.86E-04 | 2.74E-05 | 5.98E-07 | 5.81E-07 | -- | -- | 1.57E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.06E-14 | 7.34E-14 | 3.15E-13 | 3.79E-16 | -- | -- | -- | -- | 1.14E-11 | 3.86E-11 | 5.10E-13 | 5.89E-15 | 5.72E-15 | -- | -- | 5.10E-11 |
| Bromoform | 1.81E-11 | 3.30E-11 | 1.66E-11 | 3.49E-15 | -- | -- | -- | -- | 4.28E-08 | 1.45E-07 | 1.91E-09 | 2.21E-11 | 2.15E-11 | -- | -- | 1.90E-07 |
| Carbon Tetrachloride | 2.13E-11 | 3.82E-11 | 2.63E-10 | 3.88E-13 | -- | -- | -- | -- | 1.41E-08 | 4.76E-08 | 6.28E-10 | 7.26E-12 | 7.05E-12 | -- | -- | 6.26E-08 |
| Chloroform | 7.02E-12 | 1.28E-11 | 3.20E-11 | 3.66E-14 | -- | -- | -- | -- | 4.39E-10 | 1.48E-09 | 1.96E-11 | 2.26E-13 | 2.20E-13 | -- | -- | 1.99E-09 |
| Trichlorofluoromethane (FREON 11) | 5.59E-12 | 1.01E-11 | 3.98E-11 | 5.36E-14 | -- | -- | -- | -- | 8.68E-09 | 2.94E-08 | 3.88E-10 | 4.48E-12 | 4.35E-12 | -- | -- | 3.85E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.41E-08 | 2.57E-08 | 2.79E-08 | 2.40E-12 | -- | -- | -- | -- | 3.58E-08 | 1.28E-07 | 2.35E-09 | 4.54E-11 | 4.41E-11 | -- | -- | 2.41E-07 |
| 1,2,4-Trichlorobenzene | 1.27E-10 | 2.31E-10 | 6.38E-11 | 8.24E-14 | -- | -- | -- | -- | 2.87E-09 | 9.77E-09 | 1.31E-10 | 1.55E-12 | 1.50E-12 | -- | -- | 1.32E-08 |
| 1,2-Dichlorobenzene | 1.46E-11 | 2.64E-11 | 1.01E-10 | 1.96E-13 | -- | -- | -- | -- | 2.51E-10 | 8.53E-10 | 1.14E-11 | 1.33E-13 | 1.29E-13 | -- | -- | 1.26E-09 |
| Hexachlorobenzene | 1.31E-09 | 2.39E-09 | 1.22E-09 | 6.89E-12 | -- | -- | -- | -- | 1.50E-08 | 5.17E-08 | 7.84E-10 | 1.06E-11 | 1.03E-11 | -- | -- | 7.38E-08 |
| Pentachlorobenzene | 2.81E-08 | 5.13E-08 | 1.60E-09 | 1.20E-11 | -- | -- | -- | -- | 3.42E-08 | 1.34E-07 | 6.00E-09 | 1.32E-10 | 1.29E-10 | -- | -- | 2.80E-07 |
| Pentachlorophenol | 8.74E-08 | 4.42E-09 | 1.11E-07 | 7.61E-08 | -- | -- | -- | -- | 6.31E-09 | 3.23E-08 | 1.50E-10 | 2.90E-14 | 2.82E-14 | -- | -- | 3.20E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 3.00E-05 | 2.63E-05 | 1.67E-06 | -- | -- | -- | -- | -- | 2.82E-06 | 6.62E-06 | 1.56E-07 | 1.98E-09 | 1.92E-09 | -- | -- | 8.34E-05 |
| Arsenic | 3.56E-06 | 6.91E-07 | 5.88E-08 | -- | -- | -- | -- | -- | 7.05E-07 | 4.89E-07 | 3.11E-08 | 4.29E-10 | 4.17E-10 | -- | -- | 7.57E-06 |
| Barium | 4.45E-08 | 3.74E-08 | 1.17E-09 | -- | -- | -- | -- | -- | 5.64E-10 | 3.07E-08 | 2.92E-11 | 3.73E-13 | 3.63E-13 | -- | -- | 1.37E-07 |
| Beryllium | 5.25E-07 | 2.68E-07 | 1.05E-08 | -- | -- | -- | -- | -- | 7.29E-08 | 1.27E-09 | 8.97E-09 | 1.96E-10 | 1.91E-10 | -- | -- | 2.82E-06 |
| Boron | 9.66E-06 | 1.45E-05 | 8.65E-07 | -- | -- | -- | -- | -- | 2.73E-07 | 1.45E-06 | 1.58E-08 | 1.85E-10 | 1.80E-10 | -- | -- | 2.69E-05 |
| Cadmium | 2.19E-04 | 3.42E-04 | 1.18E-05 | -- | -- | -- | -- | -- | 1.28E-06 | 1.65E-06 | 1.06E-07 | 1.16E-06 | 4.63E-08 | -- | -- | 6.31E-04 |
| Chromium (Total) | 3.61E-09 | 3.75E-10 | 2.33E-11 | -- | -- | -- | -- | -- | 1.87E-09 | 1.19E-08 | 6.87E-11 | 8.42E-13 | 8.18E-13 | -- | -- | 1.93E-08 |
| Chromium VI | 7.71E-07 | 8.00E-08 | 4.97E-09 | -- | -- | -- | -- | -- | 3.99E-07 | 2.55E-06 | 1.47E-08 | 1.80E-10 | 1.75E-10 | -- | -- | 4.13E-06 |
| Cobalt | 1.18E-05 | 4.31E-06 | 2.35E-07 | -- | -- | -- | -- | -- | 2.17E-05 | 1.03E-04 | 1.21E-06 | 2.00E-08 | 1.94E-08 | -- | -- | 1.52E-04 |
| Lead | 1.89E-04 | 2.34E-04 | 1.04E-05 | -- | -- | -- | -- | -- | 4.83E-06 | 8.42E-05 | 5.23E-07 | 1.04E-08 | 1.01E-08 | -- | -- | 8.40E-04 |
| Mercury - Inorganic | 6.70E-05 | 9.24E-05 | 1.55E-05 | 1.01E-05 | -- | -- | -- | -- | 1.29E-05 | 8.92E-05 | 1.50E-08 | 4.19E-07 | 7.12E-07 | -- | -- | 4.08E-04 |
| Methyl Mercury | 1.36E-05 | 1.22E-05 | 2.77E-06 | 4.27E-06 | -- | -- | -- | -- | 2.74E-07 | 2.46E-06 | 1.74E-10 | 4.42E-09 | 7.51E-09 | -- | -- | 4.40E-05 |
| Nickel | 1.37E-05 | 6.96E-06 | 4.03E-07 | -- | -- | -- | -- | -- | 7.80E-06 | 2.90E-05 | 5.09E-07 | 8.88E-09 | 8.63E-09 | -- | -- | 7.42E-05 |
| Phosphorus | 6.74E-11 | 1.10E-10 | 7.39E-12 | -- | -- | -- | -- | -- | 8.06E-11 | 4.41E-10 | 6.70E-12 | 1.06E-13 | 1.03E-13 | -- | -- | 7.13E-10 |
| Selenium | 2.32E-07 | 2.58E-08 | 1.96E-09 | -- | -- | -- | -- | -- | 4.66E-08 | 2.88E-06 | 7.87E-08 | 4.22E-09 | 7.18E-09 | -- | -- | 3.30E-06 |
| Silver | 2.67E-06 | 2.09E-06 | 1.02E-07 | -- | -- | -- | -- | -- | 5.59E-07 | 9.00E-05 | 2.01E-08 | 1.67E-10 | 1.62E-10 | -- | -- | 9.57E-05 |
| Thallium | 1.15E-03 | 7.79E-05 | 2.44E-06 | -- | -- | -- | -- | -- | 5.27E-03 | 5.74E-03 | 3.62E-04 | 6.84E-06 | 6.65E-06 | -- | -- | 1.43E-02 |
| Tin | 2.63E-07 | 2.37E-07 | 1.06E-08 | -- | -- | -- | -- | -- | 2.04E-06 | 8.98E-06 | 2.05E-07 | 4.13E-09 | 4.01E-09 | -- | -- | 1.23E-05 |
| Vanadium | 4.45E-07 | 2.77E-07 | 1.69E-08 | -- | -- | -- | -- | -- | 1.38E-07 | 5.54E-07 | 1.79E-08 | 4.00E-10 | 3.88E-10 | -- | -- | 3.05E-06 |
| Zinc | 7.31E-06 | 1.06E-05 | 6.61E-06 | -- | -- | -- | -- | -- | 3.25E-08 | 2.78E-07 | 2.42E-09 | 3.62E-09 | 6.16E-09 | -- | -- | 2.69E-05 |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.33E-12 | 1.00E-12 | 6.89E-13 | -- | 1.81E-13 | 5.19E-14 | 8.00E-14 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.59E-13 | 1.97E-13 | 1.36E-13 | -- | 5.17E-14 | 1.48E-14 | 2.29E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.47E-12 | 1.49E-12 | 1.03E-12 | -- | 2.69E-13 | 7.74E-14 | 1.19E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.30E-06 | 5.60E-07 | 3.86E-07 | -- | 7.09E-08 | 2.03E-08 | 3.14E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.36E-05 | 5.83E-06 | 4.02E-06 | -- | 1.58E-07 | 4.54E-08 | 7.00E-08 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.99E-17 | 1.71E-17 | 1.18E-17 | -- | 3.10E-18 | 8.90E-19 | 1.37E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.51E-14 | 6.50E-15 | 4.48E-15 | -- | 6.47E-16 | 1.86E-16 | 2.86E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.10E-14 | 1.33E-14 | 9.18E-15 | -- | 1.20E-14 | 3.46E-15 | 5.33E-15 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.57E-15 | 1.54E-15 | 1.06E-15 | -- | 1.39E-16 | 3.98E-17 | 6.14E-17 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.50E-15 | 2.36E-15 | 1.63E-15 | -- | 4.27E-16 | 1.23E-16 | 1.89E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.99E-10 | 1.28E-10 | 8.85E-11 | -- | 1.16E-11 | 3.33E-12 | 5.13E-12 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.24E-13 | 3.97E-13 | 2.74E-13 | -- | 2.87E-14 | 8.24E-15 | 1.27E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.62E-14 | 1.99E-14 | 1.37E-14 | -- | 1.80E-15 | 5.16E-16 | 7.95E-16 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.39E-11 | 2.32E-11 | 1.60E-11 | -- | 2.72E-12 | 7.81E-13 | 1.20E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.74E-10 | 4.19E-10 | 2.89E-10 | -- | 3.79E-12 | 1.09E-12 | 1.68E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.64E-11 | 3.28E-11 | 2.26E-11 | -- | 3.26E-12 | 9.37E-13 | 1.44E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.45E-07 | 4.06E-07 | 2.80E-07 | -- | 3.67E-08 | 1.05E-08 | 1.63E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.37E-08 | 3.70E-08 | -- | 1.46E-09 | 4.18E-10 | 6.45E-10 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.33E-09 | 5.72E-10 | 3.94E-10 | -- | 5.17E-11 | 1.48E-11 | 2.29E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.19E-07 | 5.12E-08 | 3.53E-08 | -- | 1.39E-09 | 3.99E-10 | 6.15E-10 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.35E-09 | 3.16E-09 | 2.18E-09 | -- | 2.86E-10 | 8.20E-11 | 1.26E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.14E-06 | 1.35E-06 | 9.30E-07 | -- | 1.71E-07 | 4.90E-08 | 7.56E-08 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.80E-11 | 3.78E-11 | 2.61E-11 | -- | 1.37E-12 | 3.93E-13 | 6.05E-13 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.88E-08 | 8.07E-09 | 5.56E-09 | -- | 6.56E-10 | 1.88E-10 | 2.91E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.71E-07 | 2.45E-07 | 1.69E-07 | -- | 2.22E-08 | 6.37E-09 | 9.82E-09 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.97E-05 | 8.48E-06 | 5.85E-06 | -- | 4.60E-08 | 1.32E-08 | 2.04E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.54E-06 | 3.67E-06 | 2.53E-06 | -- | 1.66E-07 | 4.76E-08 | 7.34E-08 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.78E-07 | 2.05E-07 | 1.42E-07 | -- | 3.71E-08 | 1.07E-08 | 1.64E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.56E-07 | 3.68E-07 | 2.54E-07 | -- | 1.16E-07 | 3.34E-08 | 5.15E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.59E-14 | 1.54E-14 | 1.06E-14 | -- | 1.39E-15 | 4.00E-16 | 6.17E-16 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.51E-09 | 6.50E-10 | 4.48E-10 | -- | 1.17E-12 | 3.37E-13 | 5.20E-13 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.73E-08 | 7.45E-09 | 5.14E-09 | -- | 1.68E-09 | 4.84E-10 | 7.46E-10 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.04E-04 | 4.47E-05 | 3.08E-05 | -- | 4.04E-07 | 1.16E-07 | 1.79E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.01E-08 | 1.29E-08 | 8.91E-09 | -- | 1.17E-09 | 3.35E-10 | 5.17E-10 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.57E-08 | 4.12E-08 | 2.84E-08 | -- | 3.72E-09 | 1.07E-09 | 1.65E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.38E-08 | 3.71E-08 | -- | 9.72E-10 | 2.79E-10 | 4.30E-10 | -- |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.45E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.42E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.72E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.43E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.40E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.35E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.29E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.77E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-10 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.72E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.41E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.89E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-07 |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.32E-13 | -- | -- | -- | 3.36E-14 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.52E-14 | -- | -- | -- | 9.60E-15 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 6.44E-13 | -- | -- | -- | 5.01E-14 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.42E-07 | -- | -- | -- | 1.32E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.37E-06 | -- | -- | -- | 1.60E-08 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 7.41E-18 | -- | -- | -- | 5.76E-19 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.81E-15 | -- | -- | -- | 1.20E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 5.76E-15 | -- | -- | -- | 2.24E-15 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 6.63E-16 | -- | -- | -- | 2.58E-17 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.02E-15 | -- | -- | -- | 7.94E-17 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 5.55E-11 | -- | -- | -- | 2.15E-12 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.72E-13 | -- | -- | -- | 5.33E-15 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 8.59E-15 | -- | -- | -- | 3.34E-16 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-11 | -- | -- | -- | 5.05E-13 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.81E-10 | -- | -- | -- | 7.03E-13 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-11 | -- | -- | -- | 6.06E-13 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.56E-08 | -- | -- | -- | 3.71E-09 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.26E-08 | -- | -- | -- | 1.47E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.35E-10 | -- | -- | -- | 5.23E-12 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.20E-08 | -- | -- | -- | 1.40E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.44E-10 | -- | -- | -- | 2.89E-11 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.18E-07 | -- | -- | -- | 1.73E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.90E-12 | -- | -- | -- | 1.38E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.90E-09 | -- | -- | -- | 6.64E-11 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.77E-08 | -- | -- | -- | 2.24E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.00E-06 | -- | -- | -- | 4.65E-09 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.20E-06 | -- | -- | -- | 2.32E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.83E-08 | -- | -- | -- | 3.75E-09 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.66E-08 | -- | -- | -- | 1.18E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.63E-15 | -- | -- | -- | 1.41E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.53E-10 | -- | -- | -- | 1.19E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.75E-09 | -- | -- | -- | 1.70E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.05E-05 | -- | -- | -- | 4.09E-08 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.04E-09 | -- | -- | -- | 1.18E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.68E-09 | -- | -- | -- | 3.76E-10 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.27E-08 | -- | -- | -- | 9.83E-11 | -- | -- | -- |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-13 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.48E-14 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.94E-13 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-07 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.98E-18 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-15 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.99E-15 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.89E-16 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-11 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.92E-15 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.93E-08 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.73E-10 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.04E-12 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.21E-08 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.84E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-15 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-08 |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 9.08E-13 | -- | -- | -- | 7.05E-14 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.79E-13 | -- | -- | -- | 2.02E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.35E-12 | -- | -- | -- | 1.05E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.07E-07 | -- | -- | -- | 2.76E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.90E-06 | -- | -- | -- | 4.54E-08 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.56E-17 | -- | -- | -- | 1.21E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.91E-15 | -- | -- | -- | 2.53E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.21E-14 | -- | -- | -- | 4.70E-15 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.39E-15 | -- | -- | -- | 5.42E-17 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.15E-15 | -- | -- | -- | 1.67E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.17E-10 | -- | -- | -- | 4.53E-12 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.61E-13 | -- | -- | -- | 1.12E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.81E-14 | -- | -- | -- | 7.01E-16 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.10E-11 | -- | -- | -- | 1.06E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.81E-10 | -- | -- | -- | 1.48E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.98E-11 | -- | -- | -- | 1.27E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.72E-07 | -- | -- | -- | 1.06E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.60E-08 | -- | -- | -- | 4.20E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.83E-10 | -- | -- | -- | 1.49E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.43E-08 | -- | -- | -- | 4.00E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.12E-09 | -- | -- | -- | 8.24E-11 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.04E-07 | -- | -- | -- | 4.92E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.54E-11 | -- | -- | -- | 3.94E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.41E-09 | -- | -- | -- | 1.89E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.64E-07 | -- | -- | -- | 6.39E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.68E-06 | -- | -- | -- | 1.32E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.77E-06 | -- | -- | -- | 5.39E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.37E-07 | -- | -- | -- | 1.07E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.47E-07 | -- | -- | -- | 3.35E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.03E-14 | -- | -- | -- | 4.02E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.36E-10 | -- | -- | -- | 3.39E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.00E-09 | -- | -- | -- | 4.85E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.00E-05 | -- | -- | -- | 1.16E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.66E-09 | -- | -- | -- | 3.36E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.76E-08 | -- | -- | -- | 1.07E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.60E-08 | -- | -- | -- | 2.80E-10 | -- | -- | -- |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Project Alone Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.78E-13 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.35E-07 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.16E-15 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.11E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.60E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.69E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.80E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.48E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.63E-08 |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | 3.67E-12 | -- | -- | -- | -- | -- | 2.66E-12 | -- | 6.34E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | 2.76E-13 | -- | -- | -- | -- | -- | 3.27E-13 | -- | 6.03E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | 1.59E-11 | -- | -- | -- | -- | -- | 1.20E-11 | -- | 2.78E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | 3.37E-08 | -- | -- | -- | -- | -- | 6.49E-07 | -- | 6.83E-07 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | 2.17E-07 | -- | -- | -- | -- | -- | 6.71E-08 | -- | 2.84E-07 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | 4.64E-12 | -- | -- | -- | -- | -- | -- | -- | 4.64E-12 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | 2.02E-08 | -- | -- | -- | -- | -- | 4.06E-10 | -- | 2.06E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | 3.99E-09 | -- | -- | -- | -- | -- | -- | -- | 3.99E-09 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | 3.05E-10 | -- | -- | -- | -- | -- | -- | -- | 3.05E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | 3.49E-09 | -- | -- | -- | -- | -- | -- | -- | 3.49E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.75E-09 | -- | -- | -- | -- | -- | 1.54E-09 | -- | 3.29E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 2.23E-10 | -- | -- | -- | -- | -- | 7.96E-11 | -- | 3.03E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 3.35E-11 | -- | -- | -- | -- | -- | 1.14E-11 | -- | 4.49E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 8.79E-10 | -- | -- | -- | -- | -- | 3.78E-09 | -- | 4.66E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.12E-09 | -- | -- | -- | -- | -- | 7.25E-11 | -- | 1.19E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | 6.04E-08 | -- | -- | -- | -- | -- | 4.79E-08 | -- | 1.08E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | 1.29E-05 | -- | -- | -- | -- | -- | 2.63E-07 | -- | 1.31E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | 2.64E-06 | -- | -- | -- | -- | -- | 5.39E-08 | -- | 2.69E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 1.99E-08 | -- | -- | -- | -- | -- | 4.07E-10 | -- | 2.03E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 | -- | -- | -- | -- | -- | 3.09E-09 | -- | 1.54E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | 1.44E-06 | -- | -- | -- | -- | -- | 2.95E-08 | -- | 1.47E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | 2.59E-05 | -- | -- | -- | -- | -- | 5.28E-07 | -- | 2.64E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | 2.83E-09 | -- | -- | -- | -- | -- | 5.78E-11 | -- | 2.89E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | 6.04E-07 | -- | -- | -- | -- | -- | 2.47E-08 | -- | 6.28E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | 7.78E-06 | -- | -- | -- | -- | -- | 6.36E-08 | -- | 7.84E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | 2.33E-05 | -- | -- | -- | -- | -- | 1.63E-07 | -- | 2.34E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | 1.41E-06 | -- | -- | -- | -- | -- | 2.88E-08 | -- | 1.44E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | 8.94E-09 | -- | -- | -- | -- | -- | 1.83E-10 | -- | 9.12E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | 8.11E-06 | -- | -- | -- | -- | -- | 3.31E-08 | -- | 8.14E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | 6.08E-12 | -- | -- | -- | -- | -- | -- | -- | 6.08E-12 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | 1.81E-07 | -- | -- | -- | -- | -- | 3.70E-09 | -- | 1.85E-07 |
| Silver | -- | -- | -- | -- | -- | -- | -- | 1.27E-06 | -- | -- | -- | -- | -- | 1.55E-08 | -- | 1.28E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | 9.03E-04 | -- | -- | -- | -- | -- | 1.85E-05 | -- | 9.22E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 8.39E-08 | -- | -- | -- | -- | -- | 1.72E-09 | -- | 8.57E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | 1.07E-07 | -- | -- | -- | -- | -- | 2.18E-09 | -- | 1.09E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | 1.24E-06 | -- | -- | -- | -- | -- | 1.52E-08 | -- | 1.26E-06 |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | 2.60E-13 | 3.58E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.18E-13 |
| Anthracene | -- | -- | -- | -- | 3.68E-14 | 1.07E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-13 |
| Fluorene | -- | -- | -- | -- | 3.39E-13 | 3.08E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.42E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | 2.40E-06 | 2.12E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | 6.69E-05 | 1.65E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | 9.83E-14 | 1.80E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-12 |
| Bromoform | -- | -- | -- | -- | 3.75E-10 | 5.80E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.18E-09 |
| Carbon Tetrachloride | -- | -- | -- | -- | 1.22E-10 | 3.09E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-09 |
| Chloroform | -- | -- | -- | -- | 3.55E-12 | 3.74E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | 7.57E-11 | 1.35E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | 2.30E-09 | 1.35E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-07 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | 3.38E-11 | 3.44E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-09 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | 2.66E-12 | 9.84E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | 4.34E-10 | 2.15E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-07 |
| Pentachlorobenzene | -- | -- | -- | -- | 4.94E-09 | 2.02E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-07 |
| Pentachlorophenol | -- | -- | -- | -- | 1.50E-09 | 8.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.31E-06 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | 9.90E-07 | 6.30E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.31E-04 |
| Arsenic | -- | -- | -- | -- | 3.16E-07 | 3.23E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-05 |
| Barium | -- | -- | -- | -- | 2.12E-10 | 4.87E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-08 |
| Beryllium | -- | -- | -- | -- | 2.24E-08 | 3.70E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-06 |
| Boron | -- | -- | -- | -- | 9.46E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.46E-08 |
| Cadmium | -- | -- | -- | -- | 3.60E-07 | 7.60E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.60E-03 |
| Chromium (Total) | -- | -- | -- | -- | 8.96E-10 | 1.38E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-07 |
| Chromium VI | -- | -- | -- | -- | 1.91E-07 | 5.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-06 |
| Cobalt | -- | -- | -- | -- | 9.40E-06 | 1.90E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-04 |
| Lead | -- | -- | -- | -- | 1.35E-06 | 5.96E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.97E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | 2.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-06 |
| Methyl Mercury | -- | -- | -- | -- | 9.84E-08 | 1.39E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-03 |
| Nickel | -- | -- | -- | -- | 3.13E-06 | 3.10E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-04 |
| Phosphorus | -- | -- | -- | -- | 2.75E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-11 |
| Selenium | -- | -- | -- | -- | 2.33E-08 | 7.54E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.56E-06 |
| Silver | -- | -- | -- | -- | 2.41E-07 | 2.74E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.77E-05 |
| Thallium | -- | -- | -- | -- | 2.21E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-03 |
| Tin | -- | -- | -- | -- | 6.54E-07 | 6.16E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.23E-05 |
| Vanadium | -- | -- | -- | -- | 4.24E-08 | 4.17E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.22E-06 |
| Zinc | -- | -- | -- | -- | 1.02E-08 | 2.83E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-04 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.04E-13 | 4.47E-14 | 1.48E-14 | -- | 1.43E-13 | 3.46E-14 | 5.53E-14 | -- | 8.08E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.77E-19 | 1.19E-19 | 3.95E-20 | -- | 2.09E-19 | 5.07E-20 | 8.10E-20 | -- | 1.60E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.27E-19 | 1.40E-19 | 4.66E-20 | -- | 4.49E-19 | 1.09E-19 | 1.74E-19 | -- | 1.12E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.57E-18 | 2.39E-18 | 7.93E-19 | -- | 3.82E-18 | 9.26E-19 | 1.48E-18 | -- | 1.34E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.59E-15 | 1.11E-15 | 3.69E-16 | -- | 2.31E-15 | 5.60E-16 | 8.95E-16 | -- | 3.08E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 6.37E-15 | 2.74E-15 | 9.08E-16 | -- | 4.81E-15 | 1.17E-15 | 1.86E-15 | -- | 7.95E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.09E-12 | 2.62E-12 | 8.68E-13 | -- | 1.25E-12 | 3.04E-13 | 4.86E-13 | -- | 1.64E-10 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.94E-13 | 8.72E-14 | 8.87E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.34E-16 | 2.27E-16 | 1.36E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.21E-16 |
| Carbon Tetrachloride | 1.56E-16 | 2.07E-15 | 8.71E-18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-15 |
| Dichloromethane | 1.95E-14 | 1.33E-13 | 7.07E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.43E-14 | 4.38E-14 | 7.06E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-13 |
| Pentachlorophenol | 1.42E-13 | 6.93E-12 | 1.35E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.97E-11 | 3.24E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 7.87E-14 | 3.38E-14 | 1.12E-14 | -- | 1.08E-13 | 2.62E-14 | 4.18E-14 | -- | 5.45E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.10E-19 | 9.01E-20 | 2.99E-20 | -- | 1.58E-19 | 3.84E-20 | 6.13E-20 | -- | 1.21E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.47E-19 | 1.06E-19 | 3.52E-20 | -- | 3.39E-19 | 8.23E-20 | 1.31E-19 | -- | 8.39E-17 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 4.21E-18 | 1.81E-18 | 6.00E-19 | -- | 2.89E-18 | 7.01E-19 | 1.12E-18 | -- | 1.01E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.96E-15 | 8.43E-16 | 2.79E-16 | -- | 1.75E-15 | 4.24E-16 | 6.77E-16 | -- | 2.32E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.82E-15 | 2.07E-15 | 6.87E-16 | -- | 3.64E-15 | 8.83E-16 | 1.41E-15 | -- | 5.14E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.44E-12 | 1.91E-12 | 6.33E-13 | -- | 9.15E-13 | 2.22E-13 | 3.54E-13 | -- | 1.15E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 4.49E-13 | 6.60E-14 | 5.72E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.77E-16 | 1.71E-16 | 8.78E-20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-16 |
| Carbon Tetrachloride | 1.18E-16 | 1.56E-15 | 5.62E-18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-15 |
| Dichloromethane | 1.48E-14 | 1.01E-13 | 4.56E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.35E-14 | 3.32E-14 | 4.56E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.63E-14 |
| Pentachlorophenol | 1.08E-13 | 5.24E-12 | 8.73E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.44E-11 | 2.36E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.36E-13 | 1.44E-13 | 4.79E-14 | -- | 4.61E-13 | 1.12E-13 | 1.79E-13 | -- | 1.85E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 8.95E-19 | 3.85E-19 | 1.28E-19 | -- | 6.76E-19 | 1.64E-19 | 2.62E-19 | -- | 5.17E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.06E-18 | 4.54E-19 | 1.50E-19 | -- | 1.45E-18 | 3.51E-19 | 5.61E-19 | -- | 3.54E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.80E-17 | 7.73E-18 | 2.56E-18 | -- | 1.23E-17 | 2.99E-18 | 4.78E-18 | -- | 4.32E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 8.37E-15 | 3.60E-15 | 1.19E-15 | -- | 7.47E-15 | 1.81E-15 | 2.89E-15 | -- | 9.88E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.06E-14 | 8.85E-15 | 2.93E-15 | -- | 1.55E-14 | 3.77E-15 | 6.02E-15 | -- | 1.50E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.35E-11 | 5.81E-12 | 1.93E-12 | -- | 2.78E-12 | 6.75E-13 | 1.08E-12 | -- | 3.00E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.92E-12 | 2.82E-13 | 1.66E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 7.55E-16 | 7.32E-16 | 2.55E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-15 |
| Carbon Tetrachloride | 5.03E-16 | 6.68E-15 | 1.63E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.56E-15 |
| Dichloromethane | 6.30E-14 | 4.30E-13 | 1.33E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.37E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.43E-13 | 1.42E-13 | 1.32E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-13 |
| Pentachlorophenol | 4.60E-13 | 2.24E-11 | 2.54E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.33E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 4.37E-11 | 7.19E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-10 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 9.41E-14 | 4.04E-14 | 1.34E-14 | -- | 1.29E-13 | 3.13E-14 | 5.00E-14 | -- | 7.00E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.51E-19 | 1.08E-19 | 3.57E-20 | -- | 1.89E-19 | 4.59E-20 | 7.33E-20 | -- | 1.45E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.96E-19 | 1.27E-19 | 4.21E-20 | -- | 4.06E-19 | 9.84E-20 | 1.57E-19 | -- | 1.01E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.04E-18 | 2.16E-18 | 7.17E-19 | -- | 3.46E-18 | 8.38E-19 | 1.34E-18 | -- | 1.21E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.34E-15 | 1.01E-15 | 3.34E-16 | -- | 2.09E-15 | 5.07E-16 | 8.10E-16 | -- | 2.78E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.77E-15 | 2.48E-15 | 8.21E-16 | -- | 4.35E-15 | 1.06E-15 | 1.69E-15 | -- | 6.78E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.32E-12 | 1.43E-12 | 4.74E-13 | -- | 6.84E-13 | 1.66E-13 | 2.65E-13 | -- | 7.45E-11 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.37E-13 | 7.89E-14 | 7.56E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.11E-16 | 2.05E-16 | 1.16E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.62E-16 |
| Carbon Tetrachloride | 1.41E-16 | 1.87E-15 | 7.42E-18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-15 |
| Dichloromethane | 1.76E-14 | 1.20E-13 | 6.03E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.01E-14 | 3.96E-14 | 6.02E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-13 |
| Pentachlorophenol | 1.29E-13 | 6.27E-12 | 1.15E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.07E-11 | 1.77E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.34E-11 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.42E-13 | 6.10E-14 | 2.02E-14 | -- | 1.95E-13 | 4.72E-14 | 7.55E-14 | -- | 1.06E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 3.78E-19 | 1.63E-19 | 5.39E-20 | -- | 2.86E-19 | 6.93E-20 | 1.11E-19 | -- | 2.18E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.46E-19 | 1.92E-19 | 6.36E-20 | -- | 6.13E-19 | 1.49E-19 | 2.37E-19 | -- | 1.52E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 7.60E-18 | 3.27E-18 | 1.08E-18 | -- | 5.22E-18 | 1.26E-18 | 2.02E-18 | -- | 1.83E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.54E-15 | 1.52E-15 | 5.04E-16 | -- | 3.16E-15 | 7.65E-16 | 1.22E-15 | -- | 4.20E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 8.70E-15 | 3.74E-15 | 1.24E-15 | -- | 6.57E-15 | 1.59E-15 | 2.54E-15 | -- | 1.04E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.18E-12 | 2.66E-12 | 8.81E-13 | -- | 1.27E-12 | 3.09E-13 | 4.93E-13 | -- | 1.48E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 8.11E-13 | 1.19E-13 | 1.16E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 3.19E-16 | 3.09E-16 | 1.77E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.48E-16 |
| Carbon Tetrachloride | 2.13E-16 | 2.82E-15 | 1.13E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.20E-15 |
| Dichloromethane | 2.66E-14 | 1.82E-13 | 9.21E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 6.05E-14 | 5.98E-14 | 9.20E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-13 |
| Pentachlorophenol | 1.94E-13 | 9.46E-12 | 1.76E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.00E-11 | 3.29E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.40E-14 | 2.75E-14 | 9.12E-15 | -- | 8.79E-14 | 2.13E-14 | 3.40E-14 | -- | 6.68E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.71E-19 | 7.33E-20 | 2.43E-20 | -- | 1.29E-19 | 3.12E-20 | 4.99E-20 | -- | 9.85E-17 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.01E-19 | 8.65E-20 | 2.87E-20 | -- | 2.76E-19 | 6.69E-20 | 1.07E-19 | -- | 7.02E-17 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.43E-18 | 1.47E-18 | 4.88E-19 | -- | 2.35E-18 | 5.70E-19 | 9.11E-19 | -- | 8.26E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.59E-15 | 6.86E-16 | 2.27E-16 | -- | 1.42E-15 | 3.45E-16 | 5.51E-16 | -- | 1.91E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.92E-15 | 1.69E-15 | 5.59E-16 | -- | 2.96E-15 | 7.18E-16 | 1.15E-15 | -- | 7.21E-12 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.10E-12 | 9.04E-13 | 3.00E-13 | -- | 4.33E-13 | 1.05E-13 | 1.68E-13 | -- | 5.45E-11 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 3.66E-13 | 5.37E-14 | 8.08E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.44E-16 | 1.39E-16 | 1.24E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-16 |
| Carbon Tetrachloride | 9.58E-17 | 1.27E-15 | 7.93E-18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-15 |
| Dichloromethane | 1.20E-14 | 8.20E-14 | 6.44E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.73E-14 | 2.70E-14 | 6.43E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.88E-14 |
| Pentachlorophenol | 8.76E-14 | 4.27E-12 | 1.23E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 6.80E-12 | 1.12E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-11 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.13E-13 | 9.15E-14 | 3.03E-14 | -- | 2.92E-13 | 7.09E-14 | 1.13E-13 | -- | 1.39E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 5.67E-19 | 2.44E-19 | 8.08E-20 | -- | 4.28E-19 | 1.04E-19 | 1.66E-19 | -- | 3.27E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 6.69E-19 | 2.88E-19 | 9.54E-20 | -- | 9.19E-19 | 2.23E-19 | 3.56E-19 | -- | 2.26E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.14E-17 | 4.90E-18 | 1.62E-18 | -- | 7.82E-18 | 1.90E-18 | 3.03E-18 | -- | 2.74E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 5.30E-15 | 2.28E-15 | 7.56E-16 | -- | 4.73E-15 | 1.15E-15 | 1.83E-15 | -- | 6.28E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.30E-14 | 5.61E-15 | 1.86E-15 | -- | 9.85E-15 | 2.39E-15 | 3.82E-15 | -- | 1.26E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 7.57E-12 | 3.25E-12 | 1.08E-12 | -- | 1.56E-12 | 3.78E-13 | 6.04E-13 | -- | 1.63E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.22E-12 | 1.79E-13 | 1.41E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.78E-16 | 4.64E-16 | 2.16E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-15 |
| Carbon Tetrachloride | 3.19E-16 | 4.23E-15 | 1.38E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.79E-15 |
| Dichloromethane | 3.99E-14 | 2.73E-13 | 1.12E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.40E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 9.08E-14 | 8.97E-14 | 1.12E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-13 |
| Pentachlorophenol | 2.91E-13 | 1.42E-11 | 2.14E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.86E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.45E-11 | 4.03E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.74E-13 | 1.61E-13 | 5.33E-14 | -- | 5.14E-13 | 1.25E-13 | 1.99E-13 | -- | 1.87E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 9.98E-19 | 4.29E-19 | 1.42E-19 | -- | 7.53E-19 | 1.83E-19 | 2.92E-19 | -- | 5.76E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.18E-18 | 5.06E-19 | 1.68E-19 | -- | 1.62E-18 | 3.92E-19 | 6.26E-19 | -- | 3.92E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.00E-17 | 8.62E-18 | 2.86E-18 | -- | 1.38E-17 | 3.33E-18 | 5.33E-18 | -- | 4.81E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 9.33E-15 | 4.01E-15 | 1.33E-15 | -- | 8.32E-15 | 2.02E-15 | 3.22E-15 | -- | 1.10E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.29E-14 | 9.86E-15 | 3.27E-15 | -- | 1.73E-14 | 4.20E-15 | 6.71E-15 | -- | 1.40E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.39E-11 | 6.00E-12 | 1.99E-12 | -- | 2.87E-12 | 6.96E-13 | 1.11E-12 | -- | 2.93E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.14E-12 | 3.14E-13 | 1.54E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.80E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 8.41E-16 | 8.16E-16 | 2.36E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-15 |
| Carbon Tetrachloride | 5.60E-16 | 7.44E-15 | 1.51E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.41E-15 |
| Dichloromethane | 7.02E-14 | 4.80E-13 | 1.23E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.98E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.60E-13 | 1.58E-13 | 1.23E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.57E-13 |
| Pentachlorophenol | 5.12E-13 | 2.49E-11 | 2.35E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.30E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 4.51E-11 | 7.42E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-10 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 4.66E-13 | 2.00E-13 | 6.63E-14 | -- | 6.39E-13 | 1.55E-13 | 2.48E-13 | -- | 3.90E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.24E-18 | 5.34E-19 | 1.77E-19 | -- | 9.37E-19 | 2.27E-19 | 3.63E-19 | -- | 1.29E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.46E-18 | 6.30E-19 | 2.09E-19 | -- | 2.01E-18 | 4.87E-19 | 7.79E-19 | -- | 8.78E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.49E-17 | 1.07E-17 | 3.55E-18 | -- | 1.71E-17 | 4.15E-18 | 6.63E-18 | -- | 1.08E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.16E-14 | 4.99E-15 | 1.65E-15 | -- | 1.04E-14 | 2.51E-15 | 4.01E-15 | -- | 2.47E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.86E-14 | 1.23E-14 | 4.07E-15 | -- | 2.16E-14 | 5.23E-15 | 8.35E-15 | -- | 2.85E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.93E-11 | 8.29E-12 | 2.75E-12 | -- | 3.97E-12 | 9.62E-13 | 1.54E-12 | -- | 7.24E-10 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.88E-12 | 6.38E-13 | 4.92E-11 | -- | -- | -- | -- | 2.37E-11 | 4.80E-11 | 4.75E-13 | 1.19E-13 | 1.09E-13 | -- | 1.69E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.32E-15 | 1.66E-15 | 7.55E-19 | -- | -- | -- | -- | 1.08E-11 | 1.45E-11 | 3.92E-13 | 5.04E-15 | 4.65E-15 | -- | 2.57E-11 |
| Carbon Tetrachloride | 1.54E-15 | 1.51E-14 | 4.83E-17 | -- | -- | -- | -- | 2.04E-12 | 2.74E-12 | 7.41E-14 | 9.54E-16 | 8.80E-16 | -- | 4.87E-12 |
| Dichloromethane | 1.93E-13 | 9.74E-13 | 3.92E-16 | -- | -- | -- | -- | 5.77E-12 | 7.74E-12 | 2.10E-13 | 2.70E-15 | 2.49E-15 | -- | 1.50E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.40E-13 | 3.20E-13 | 3.91E-15 | -- | -- | -- | -- | 3.01E-09 | 4.03E-09 | 1.09E-10 | 1.41E-12 | 1.30E-12 | -- | 7.15E-09 |
| Pentachlorophenol | 1.41E-12 | 5.07E-11 | 7.50E-11 | -- | -- | -- | -- | 7.63E-12 | 1.52E-11 | 1.56E-13 | 6.35E-16 | 5.86E-16 | -- | 1.79E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.38E-10 | 1.67E-11 | -- | -- | -- | -- | -- | 5.02E-10 | 1.38E-10 | 1.80E-11 | 2.77E-13 | 2.55E-13 | -- | 1.57E-09 |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.94E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.54E-14 | 6.64E-15 | -- | -- | 2.87E-14 | 6.86E-15 | 1.10E-14 | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 4.12E-20 | 1.77E-20 | -- | -- | 4.20E-20 | 1.01E-20 | 1.61E-20 | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.85E-20 | 2.09E-20 | -- | -- | 9.01E-20 | 2.16E-20 | 3.46E-20 | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 8.27E-19 | 3.55E-19 | -- | -- | 7.67E-19 | 1.84E-19 | 2.94E-19 | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.85E-16 | 1.65E-16 | -- | -- | 4.64E-16 | 1.11E-16 | 1.78E-16 | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 9.47E-16 | 4.07E-16 | -- | -- | 9.66E-16 | 2.31E-16 | 3.71E-16 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.61E-01 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.55E-13 | 4.10E-13 | -- | -- | 2.66E-13 | 6.36E-14 | 1.02E-13 | -- | -- |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.86E-14 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.92E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-12 |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 5.47E-15 | -- | -- | -- | 7.51E-15 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.46E-20 | -- | -- | -- | 1.10E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.72E-20 | -- | -- | -- | 2.36E-20 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.93E-19 | -- | -- | -- | 2.01E-19 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.36E-16 | -- | -- | -- | 1.22E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.35E-16 | -- | -- | -- | 2.53E-16 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.87E-13 | -- | -- | -- | 3.85E-14 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-14 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-20 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-20 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.94E-19 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-16 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.88E-16 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-13 |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.14E-14 | -- | -- | -- | 1.56E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 3.03E-20 | -- | -- | -- | 2.29E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.58E-20 | -- | -- | -- | 4.91E-20 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 6.09E-19 | -- | -- | -- | 4.18E-19 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.84E-16 | -- | -- | -- | 2.53E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 6.98E-16 | -- | -- | -- | 5.27E-16 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.27E-13 | -- | -- | -- | 1.09E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-14 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.32E-20 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.49E-20 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.37E-16 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.36E-13 |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | 8.85E-13 | -- | -- | -- | -- | -- | 3.72E-13 | 1.26E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | 1.86E-12 | -- | -- | -- | -- | -- | -- | 1.86E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | 2.12E-13 | -- | -- | -- | -- | -- | 2.00E-13 | 4.12E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | 4.15E-12 | -- | -- | -- | -- | -- | -- | 4.15E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | 3.39E-10 | -- | -- | -- | -- | -- | -- | 3.39E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | 3.58E-09 | -- | -- | -- | -- | -- | 3.95E-12 | 3.58E-09 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | 6.92E-10 | -- | -- | -- | -- | -- | 1.67E-11 | 7.08E-10 |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | 3.95E-12 | 2.72E-11 | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | 5.92E-14 | 4.88E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 5.48E-13 |
| Carbon Tetrachloride | -- | -- | -- | 1.11E-14 | 1.50E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-13 |
| Dichloromethane | -- | -- | -- | 2.82E-14 | 9.30E-14 | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | 1.43E-10 | 7.58E-08 | -- | -- | -- | -- | -- | -- | -- | -- | 7.60E-08 |
| Pentachlorophenol | -- | -- | -- | 1.14E-12 | 4.50E-07 | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-07 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | 1.42E-10 | 7.74E-09 | -- | -- | -- | -- | -- | -- | -- | -- | 7.88E-09 |

# APPENDIX I-7

Multi-Pathway Results – Upset Operations (Process Upset Case) – 140,000 tpy

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 3.00E-12 | 1.65E-12 | -- | 2.47E-12 | 7.71E-13 | 1.19E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.38E-12 | 5.93E-13 | 3.25E-13 | -- | 7.08E-13 | 2.21E-13 | 3.41E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.04E-11 | 4.48E-12 | 2.45E-12 | -- | 3.69E-12 | 1.15E-12 | 1.78E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.92E-06 | 1.68E-06 | 9.22E-07 | -- | 9.71E-07 | 3.03E-07 | 4.68E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.81E-05 | 1.64E-05 | 8.98E-06 | -- | 2.02E-06 | 6.31E-07 | 9.76E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.20E-16 | 5.15E-17 | 2.82E-17 | -- | 4.24E-17 | 1.32E-17 | 2.05E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.55E-14 | 1.95E-14 | 1.07E-14 | -- | 8.86E-15 | 2.76E-15 | 4.27E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 9.31E-14 | 4.00E-14 | 2.19E-14 | -- | 1.65E-13 | 5.14E-14 | 7.95E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.07E-14 | 4.61E-15 | 2.53E-15 | -- | 1.90E-15 | 5.92E-16 | 9.16E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.65E-14 | 7.11E-15 | 3.89E-15 | -- | 5.85E-15 | 1.82E-15 | 2.82E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.97E-10 | 3.86E-10 | 2.11E-10 | -- | 1.59E-10 | 4.95E-11 | 7.66E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.78E-12 | 1.19E-12 | 6.54E-13 | -- | 3.93E-13 | 1.23E-13 | 1.90E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.39E-13 | 5.97E-14 | 3.27E-14 | -- | 2.46E-14 | 7.67E-15 | 1.19E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.62E-10 | 6.96E-11 | 3.81E-11 | -- | 3.73E-11 | 1.16E-11 | 1.80E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.93E-09 | 1.26E-09 | 6.90E-10 | -- | 5.19E-11 | 1.62E-11 | 2.50E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.30E-10 | 9.87E-11 | 5.40E-11 | -- | 4.47E-11 | 1.39E-11 | 2.15E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.37E-06 | 5.91E-07 | 3.24E-07 | -- | 2.43E-07 | 7.59E-08 | 1.17E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.82E-07 | 7.82E-08 | 4.28E-08 | -- | 9.66E-09 | 3.01E-09 | 4.65E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.94E-09 | 8.32E-10 | 4.56E-10 | -- | 3.43E-10 | 1.07E-10 | 1.65E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.73E-07 | 7.45E-08 | 4.08E-08 | -- | 9.20E-09 | 2.87E-09 | 4.44E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.07E-08 | 4.60E-09 | 2.52E-09 | -- | 1.89E-09 | 5.90E-10 | 9.13E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.57E-06 | 1.96E-06 | 1.08E-06 | -- | 1.13E-06 | 3.53E-07 | 5.46E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.28E-10 | 5.50E-11 | 3.01E-11 | -- | 9.06E-12 | 2.83E-12 | 4.37E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.73E-08 | 1.17E-08 | 6.43E-09 | -- | 4.35E-09 | 1.36E-09 | 2.10E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.30E-07 | 3.57E-07 | 1.96E-07 | -- | 1.47E-07 | 4.58E-08 | 7.09E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.87E-05 | 1.23E-05 | 6.76E-06 | -- | 3.05E-07 | 9.50E-08 | 1.47E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.25E-05 | 5.39E-06 | 2.95E-06 | -- | 1.11E-06 | 3.46E-07 | 5.35E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.95E-07 | 2.99E-07 | 1.64E-07 | -- | 2.46E-07 | 7.67E-08 | 1.19E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.25E-06 | 5.35E-07 | 2.93E-07 | -- | 7.72E-07 | 2.41E-07 | 3.72E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.22E-14 | 2.24E-14 | 1.23E-14 | -- | 9.24E-15 | 2.88E-15 | 4.45E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.20E-09 | 9.45E-10 | 5.18E-10 | -- | 7.79E-12 | 2.43E-12 | 3.75E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.52E-08 | 1.08E-08 | 5.94E-09 | -- | 1.12E-08 | 3.48E-09 | 5.38E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.51E-04 | 6.50E-05 | 3.56E-05 | -- | 2.68E-06 | 8.35E-07 | 1.29E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.37E-08 | 1.88E-08 | 1.03E-08 | -- | 7.74E-09 | 2.41E-09 | 3.73E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.39E-07 | 5.99E-08 | 3.28E-08 | -- | 2.46E-08 | 7.68E-09 | 1.19E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.82E-07 | 7.82E-08 | 4.28E-08 | -- | 6.44E-09 | 2.01E-09 | 3.10E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-12 | 1.84E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.96E-13 | 4.06E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-12 | 2.67E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-04 | 2.12E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-03 | 1.93E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-17 | 3.10E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-15 | 9.46E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.30E-14 | 5.04E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-15 | 2.25E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-15 | 4.24E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.27E-10 | 2.71E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.61E-13 | 6.29E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.46E-14 | 3.60E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-10 | 5.44E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-09 | 7.10E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-08 | 1.49E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.20E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.33E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.83E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.46E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.20E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.67E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-07 |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 9.95E-12 | 2.29E-12 | -- | 1.80E-12 | 5.17E-13 | 7.96E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.57E-12 | 1.96E-12 | 4.51E-13 | -- | 5.15E-13 | 1.48E-13 | 2.28E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.45E-11 | 1.48E-11 | 3.41E-12 | -- | 2.68E-12 | 7.70E-13 | 1.19E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.30E-05 | 5.58E-06 | 1.28E-06 | -- | 7.06E-07 | 2.03E-07 | 3.12E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.26E-04 | 5.43E-05 | 1.25E-05 | -- | 1.47E-06 | 4.23E-07 | 6.52E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.97E-16 | 1.71E-16 | 3.92E-17 | -- | 3.09E-17 | 8.86E-18 | 1.37E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.51E-13 | 6.48E-14 | 1.49E-14 | -- | 6.44E-15 | 1.85E-15 | 2.85E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.09E-13 | 1.33E-13 | 3.05E-14 | -- | 1.20E-13 | 3.44E-14 | 5.31E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.56E-14 | 1.53E-14 | 3.51E-15 | -- | 1.38E-15 | 3.97E-16 | 6.12E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.48E-14 | 2.35E-14 | 5.41E-15 | -- | 4.25E-15 | 1.22E-15 | 1.88E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.97E-09 | 1.28E-09 | 2.94E-10 | -- | 1.15E-10 | 3.32E-11 | 5.11E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.20E-12 | 3.95E-12 | 9.09E-13 | -- | 2.86E-13 | 8.21E-14 | 1.27E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.60E-13 | 1.98E-13 | 4.55E-14 | -- | 1.79E-14 | 5.14E-15 | 7.92E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.36E-10 | 2.31E-10 | 5.30E-11 | -- | 2.71E-11 | 7.78E-12 | 1.20E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.70E-09 | 4.17E-09 | 9.59E-10 | -- | 3.77E-11 | 1.08E-11 | 1.67E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.60E-10 | 3.27E-10 | 7.51E-11 | -- | 3.25E-11 | 9.33E-12 | 1.44E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.55E-06 | 1.96E-06 | 4.50E-07 | -- | 1.77E-07 | 5.08E-08 | 7.83E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.02E-07 | 2.59E-07 | 5.95E-08 | -- | 7.02E-09 | 2.02E-09 | 3.11E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.41E-09 | 2.76E-09 | 6.33E-10 | -- | 2.49E-10 | 7.15E-11 | 1.10E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 5.74E-07 | 2.47E-07 | 5.67E-08 | -- | 6.69E-09 | 1.92E-09 | 2.96E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.54E-08 | 1.52E-08 | 3.50E-09 | -- | 1.38E-09 | 3.95E-10 | 6.10E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.51E-05 | 6.50E-06 | 1.49E-06 | -- | 8.23E-07 | 2.36E-07 | 3.64E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.24E-10 | 1.82E-10 | 4.19E-11 | -- | 6.59E-12 | 1.89E-12 | 2.92E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.05E-08 | 3.89E-08 | 8.94E-09 | -- | 3.16E-09 | 9.08E-10 | 1.40E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.75E-06 | 1.18E-06 | 2.72E-07 | -- | 1.07E-07 | 3.07E-08 | 4.73E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 9.51E-05 | 4.09E-05 | 9.39E-06 | -- | 2.22E-07 | 6.36E-08 | 9.81E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.15E-05 | 1.79E-05 | 4.10E-06 | -- | 8.07E-07 | 2.32E-07 | 3.57E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.30E-06 | 9.89E-07 | 2.27E-07 | -- | 1.79E-07 | 5.14E-08 | 7.92E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.13E-06 | 1.77E-06 | 4.08E-07 | -- | 5.61E-07 | 1.61E-07 | 2.48E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.73E-13 | 7.44E-14 | 1.71E-14 | -- | 6.72E-15 | 1.93E-15 | 2.97E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.29E-09 | 3.13E-09 | 7.20E-10 | -- | 5.66E-12 | 1.63E-12 | 2.51E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.36E-08 | 3.59E-08 | 8.25E-09 | -- | 8.12E-09 | 2.33E-09 | 3.59E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.01E-04 | 2.15E-04 | 4.95E-05 | -- | 1.95E-06 | 5.59E-07 | 8.62E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.45E-07 | 6.23E-08 | 1.43E-08 | -- | 5.63E-09 | 1.62E-09 | 2.49E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.61E-07 | 1.98E-07 | 4.56E-08 | -- | 1.79E-08 | 5.15E-09 | 7.93E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.03E-07 | 2.59E-07 | 5.95E-08 | -- | 4.68E-09 | 1.34E-09 | 2.07E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.27E-10 | 1.88E-10 | 1.69E-11 | 7.23E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.42E-10 |
| Anthracene | 1.12E-11 | 1.67E-11 | 2.36E-14 | 1.28E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.58E-11 |
| Fluorene | 1.26E-10 | 1.88E-10 | 2.25E-13 | 3.62E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.24E-06 | 3.30E-06 | 4.26E-07 | 1.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.10E-05 | 2.16E-05 | 4.45E-06 | 2.02E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.43E-14 | 2.07E-14 | 1.21E-13 | 1.92E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-13 |
| Bromoform | 6.28E-12 | 9.34E-12 | 6.36E-12 | 1.76E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-11 |
| Carbon Tetrachloride | 7.60E-12 | 1.08E-11 | 1.01E-10 | 1.96E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-10 |
| Chloroform | 2.46E-12 | 3.61E-12 | 1.23E-11 | 1.85E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-11 |
| Trichlorofluoromethane (FREON 11) | 1.97E-12 | 2.86E-12 | 1.53E-11 | 2.71E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.89E-09 | 7.27E-09 | 1.07E-08 | 1.21E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-08 |
| 1,2,4-Trichlorobenzene | 4.40E-11 | 6.53E-11 | 2.45E-11 | 4.16E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-10 |
| 1,2-Dichlorobenzene | 5.18E-12 | 7.45E-12 | 3.88E-11 | 9.90E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.22E-11 |
| Hexachlorobenzene | 4.60E-10 | 6.75E-10 | 4.68E-10 | 3.48E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-09 |
| Pentachlorobenzene | 9.76E-09 | 1.45E-08 | 6.12E-10 | 6.07E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-08 |
| Pentachlorophenol | 6.82E-08 | 1.25E-09 | 4.27E-08 | 3.85E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 8.90E-06 | 5.46E-06 | 4.69E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-05 |
| Arsenic | 1.17E-06 | 1.43E-07 | 1.65E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-06 |
| Barium | 1.33E-08 | 7.76E-09 | 3.30E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-08 |
| Beryllium | 1.65E-07 | 5.56E-08 | 2.95E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-06 |
| Boron | 2.60E-06 | 3.00E-06 | 2.43E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-06 |
| Cadmium | 5.84E-05 | 7.11E-05 | 3.32E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-04 |
| Chromium (Total) | 1.20E-09 | 7.77E-11 | 6.55E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-09 |
| Chromium VI | 2.56E-07 | 1.66E-08 | 1.40E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.17E-07 |
| Cobalt | 3.76E-06 | 8.94E-07 | 6.61E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.11E-06 |
| Lead | 5.33E-05 | 4.86E-05 | 2.94E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-04 |
| Mercury - Inorganic | 2.15E-05 | 2.26E-05 | 5.13E-06 | 2.64E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-04 |
| Methyl Mercury | 4.39E-06 | 2.54E-06 | 7.82E-07 | 1.12E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-05 |
| Nickel | 4.30E-06 | 1.44E-06 | 1.13E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-05 |
| Phosphorus | 1.77E-11 | 2.27E-11 | 2.08E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.28E-11 |
| Selenium | 7.70E-08 | 5.34E-09 | 5.50E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.40E-08 |
| Silver | 8.03E-07 | 4.33E-07 | 2.87E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-06 |
| Thallium | 3.83E-04 | 1.62E-05 | 6.88E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-03 |
| Tin | 7.79E-08 | 4.93E-08 | 2.98E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-07 |
| Vanadium | 1.37E-07 | 5.75E-08 | 4.75E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.36E-07 |
| Zinc | 1.98E-06 | 2.20E-06 | 1.86E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.97E-06 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 2.25E-12 | 1.23E-12 | -- | 1.86E-12 | 5.79E-13 | 8.94E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.03E-12 | 4.44E-13 | 2.43E-13 | -- | 5.31E-13 | 1.65E-13 | 2.56E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 7.82E-12 | 3.36E-12 | 1.84E-12 | -- | 2.77E-12 | 8.63E-13 | 1.33E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.93E-06 | 1.26E-06 | 6.89E-07 | -- | 7.25E-07 | 2.26E-07 | 3.50E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.75E-05 | 1.18E-05 | 6.47E-06 | -- | 1.46E-06 | 4.55E-07 | 7.04E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.99E-17 | 3.86E-17 | 2.12E-17 | -- | 3.18E-17 | 9.92E-18 | 1.53E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.41E-14 | 1.47E-14 | 8.03E-15 | -- | 6.64E-15 | 2.07E-15 | 3.20E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.98E-14 | 3.00E-14 | 1.64E-14 | -- | 1.24E-13 | 3.86E-14 | 5.96E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 8.05E-15 | 3.46E-15 | 1.90E-15 | -- | 1.43E-15 | 4.44E-16 | 6.87E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.24E-14 | 5.33E-15 | 2.92E-15 | -- | 4.39E-15 | 1.37E-15 | 2.12E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.73E-10 | 2.89E-10 | 1.58E-10 | -- | 1.19E-10 | 3.71E-11 | 5.74E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.08E-12 | 8.95E-13 | 4.90E-13 | -- | 2.95E-13 | 9.19E-14 | 1.42E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.04E-13 | 4.48E-14 | 2.45E-14 | -- | 1.85E-14 | 5.75E-15 | 8.89E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.21E-10 | 5.22E-11 | 2.86E-11 | -- | 2.79E-11 | 8.71E-12 | 1.35E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.20E-09 | 9.44E-10 | 5.17E-10 | -- | 3.89E-11 | 1.21E-11 | 1.87E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.72E-10 | 7.40E-11 | 4.05E-11 | -- | 3.35E-11 | 1.05E-11 | 1.62E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.94E-07 | 4.27E-07 | 2.34E-07 | -- | 1.76E-07 | 5.49E-08 | 8.48E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.32E-07 | 5.65E-08 | 3.10E-08 | -- | 6.99E-09 | 2.18E-09 | 3.37E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.40E-09 | 6.02E-10 | 3.30E-10 | -- | 2.48E-10 | 7.73E-11 | 1.19E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.25E-07 | 5.38E-08 | 2.95E-08 | -- | 6.65E-09 | 2.07E-09 | 3.21E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.74E-09 | 3.33E-09 | 1.82E-09 | -- | 1.37E-09 | 4.27E-10 | 6.60E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.30E-06 | 1.42E-06 | 7.78E-07 | -- | 8.18E-07 | 2.55E-07 | 3.94E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.26E-11 | 3.98E-11 | 2.18E-11 | -- | 6.56E-12 | 2.04E-12 | 3.16E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.98E-08 | 8.49E-09 | 4.65E-09 | -- | 3.15E-09 | 9.81E-10 | 1.52E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.01E-07 | 2.58E-07 | 1.41E-07 | -- | 1.06E-07 | 3.31E-08 | 5.12E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.07E-05 | 8.91E-06 | 4.88E-06 | -- | 2.20E-07 | 6.87E-08 | 1.06E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.25E-06 | 3.55E-06 | 1.94E-06 | -- | 7.30E-07 | 2.28E-07 | 3.52E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.02E-07 | 2.16E-07 | 1.18E-07 | -- | 1.78E-07 | 5.54E-08 | 8.57E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.01E-07 | 3.87E-07 | 2.12E-07 | -- | 5.58E-07 | 1.74E-07 | 2.69E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.78E-14 | 1.62E-14 | 8.89E-15 | -- | 6.69E-15 | 2.08E-15 | 3.22E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.59E-09 | 6.84E-10 | 3.75E-10 | -- | 5.63E-12 | 1.76E-12 | 2.72E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.82E-08 | 7.84E-09 | 4.30E-09 | -- | 8.08E-09 | 2.52E-09 | 3.89E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.09E-04 | 4.70E-05 | 2.58E-05 | -- | 1.94E-06 | 6.04E-07 | 9.33E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.16E-08 | 1.36E-08 | 7.44E-09 | -- | 5.60E-09 | 1.74E-09 | 2.70E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.01E-07 | 4.33E-08 | 2.37E-08 | -- | 1.78E-08 | 5.55E-09 | 8.58E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.32E-07 | 5.66E-08 | 3.10E-08 | -- | 4.66E-09 | 1.45E-09 | 2.25E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-12 | 1.38E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-13 | 3.05E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-12 | 2.00E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-04 | 1.58E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-03 | 1.37E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-17 | 2.32E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-15 | 7.10E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-14 | 3.78E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.14E-16 | 1.69E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-15 | 3.18E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E-10 | 2.03E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.20E-13 | 4.72E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.34E-14 | 2.70E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-10 | 4.08E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-09 | 5.32E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.73E-09 | 1.01E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.78E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.97E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.49E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-07 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 7.46E-12 | 1.72E-12 | -- | 1.35E-12 | 3.87E-13 | 5.97E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.43E-12 | 1.47E-12 | 3.38E-13 | -- | 3.86E-13 | 1.11E-13 | 1.71E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.59E-11 | 1.11E-11 | 2.56E-12 | -- | 2.01E-12 | 5.78E-13 | 8.91E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 9.70E-06 | 4.17E-06 | 9.58E-07 | -- | 5.27E-07 | 1.51E-07 | 2.33E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.11E-05 | 3.91E-05 | 9.00E-06 | -- | 1.06E-06 | 3.05E-07 | 4.70E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.98E-16 | 1.28E-16 | 2.94E-17 | -- | 2.31E-17 | 6.65E-18 | 1.02E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.13E-13 | 4.86E-14 | 1.12E-14 | -- | 4.83E-15 | 1.39E-15 | 2.14E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.31E-13 | 9.95E-14 | 2.29E-14 | -- | 8.99E-14 | 2.58E-14 | 3.98E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.67E-14 | 1.15E-14 | 2.63E-15 | -- | 1.04E-15 | 2.98E-16 | 4.59E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.11E-14 | 1.77E-14 | 4.06E-15 | -- | 3.19E-15 | 9.16E-16 | 1.41E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.23E-09 | 9.59E-10 | 2.20E-10 | -- | 8.66E-11 | 2.49E-11 | 3.83E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 6.90E-12 | 2.97E-12 | 6.82E-13 | -- | 2.14E-13 | 6.16E-14 | 9.49E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.45E-13 | 1.48E-13 | 3.41E-14 | -- | 1.34E-14 | 3.85E-15 | 5.94E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.02E-10 | 1.73E-10 | 3.97E-11 | -- | 2.03E-11 | 5.83E-12 | 8.99E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.28E-09 | 3.13E-09 | 7.19E-10 | -- | 2.83E-11 | 8.12E-12 | 1.25E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.70E-10 | 2.45E-10 | 5.63E-11 | -- | 2.44E-11 | 7.00E-12 | 1.08E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.29E-06 | 1.42E-06 | 3.25E-07 | -- | 1.28E-07 | 3.67E-08 | 5.67E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.36E-07 | 1.87E-07 | 4.30E-08 | -- | 5.08E-09 | 1.46E-09 | 2.25E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.64E-09 | 1.99E-09 | 4.58E-10 | -- | 1.80E-10 | 5.17E-11 | 7.98E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.15E-07 | 1.78E-07 | 4.10E-08 | -- | 4.84E-09 | 1.39E-09 | 2.14E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.56E-08 | 1.10E-08 | 2.53E-09 | -- | 9.96E-10 | 2.86E-10 | 4.41E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.09E-05 | 4.70E-06 | 1.08E-06 | -- | 5.95E-07 | 1.71E-07 | 2.63E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.07E-10 | 1.32E-10 | 3.03E-11 | -- | 4.77E-12 | 1.37E-12 | 2.11E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.54E-08 | 2.81E-08 | 6.47E-09 | -- | 2.29E-09 | 6.57E-10 | 1.01E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.99E-06 | 8.55E-07 | 1.97E-07 | -- | 7.73E-08 | 2.22E-08 | 3.42E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.87E-05 | 2.95E-05 | 6.79E-06 | -- | 1.60E-07 | 4.60E-08 | 7.09E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.73E-05 | 1.17E-05 | 2.70E-06 | -- | 5.31E-07 | 1.52E-07 | 2.35E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.66E-06 | 7.15E-07 | 1.64E-07 | -- | 1.29E-07 | 3.71E-08 | 5.72E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.98E-06 | 1.28E-06 | 2.95E-07 | -- | 4.06E-07 | 1.17E-07 | 1.80E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.25E-13 | 5.38E-14 | 1.24E-14 | -- | 4.86E-15 | 1.40E-15 | 2.15E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.27E-09 | 2.27E-09 | 5.21E-10 | -- | 4.10E-12 | 1.18E-12 | 1.81E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.05E-08 | 2.60E-08 | 5.97E-09 | -- | 5.87E-09 | 1.69E-09 | 2.60E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.62E-04 | 1.56E-04 | 3.58E-05 | -- | 1.41E-06 | 4.04E-07 | 6.23E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.05E-07 | 4.50E-08 | 1.03E-08 | -- | 4.07E-09 | 1.17E-09 | 1.80E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.33E-07 | 1.43E-07 | 3.29E-08 | -- | 1.29E-08 | 3.72E-09 | 5.73E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.36E-07 | 1.87E-07 | 4.31E-08 | -- | 3.39E-09 | 9.73E-10 | 1.50E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 9.50E-11 | 1.41E-10 | 1.27E-11 | 5.42E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.32E-10 |
| Anthracene | 8.42E-12 | 1.25E-11 | 1.77E-14 | 8.31E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-11 |
| Fluorene | 9.48E-11 | 1.41E-10 | 1.68E-13 | 2.34E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.67E-06 | 2.47E-06 | 3.19E-07 | 6.87E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.18E-05 | 1.56E-05 | 3.21E-06 | 1.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.07E-14 | 1.56E-14 | 9.06E-14 | 1.24E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-13 |
| Bromoform | 4.71E-12 | 7.00E-12 | 4.77E-12 | 1.14E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-11 |
| Carbon Tetrachloride | 5.67E-12 | 8.10E-12 | 7.55E-11 | 1.27E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-11 |
| Chloroform | 1.84E-12 | 2.71E-12 | 9.21E-12 | 1.20E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-11 |
| Trichlorofluoromethane (FREON 11) | 1.47E-12 | 2.14E-12 | 1.14E-11 | 1.75E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.67E-09 | 5.45E-09 | 8.02E-09 | 7.85E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-08 |
| 1,2,4-Trichlorobenzene | 3.30E-11 | 4.90E-11 | 1.83E-11 | 2.69E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-10 |
| 1,2-Dichlorobenzene | 3.87E-12 | 5.59E-12 | 2.91E-11 | 6.41E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-11 |
| Hexachlorobenzene | 3.44E-10 | 5.06E-10 | 3.51E-10 | 2.25E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-09 |
| Pentachlorobenzene | 7.32E-09 | 1.09E-08 | 4.59E-10 | 3.92E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.98E-08 |
| Pentachlorophenol | 4.42E-08 | 9.36E-10 | 3.20E-08 | 2.49E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 6.30E-06 | 3.95E-06 | 3.39E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-05 |
| Arsenic | 8.14E-07 | 1.04E-07 | 1.20E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-06 |
| Barium | 9.39E-09 | 5.61E-09 | 2.39E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-08 |
| Beryllium | 1.16E-07 | 4.02E-08 | 2.13E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-07 |
| Boron | 1.87E-06 | 2.17E-06 | 1.76E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.25E-06 |
| Cadmium | 4.20E-05 | 5.14E-05 | 2.40E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-04 |
| Chromium (Total) | 8.36E-10 | 5.62E-11 | 4.74E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-09 |
| Chromium VI | 1.78E-07 | 1.20E-08 | 1.01E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-07 |
| Cobalt | 2.64E-06 | 6.47E-07 | 4.78E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.51E-06 |
| Lead | 3.80E-05 | 3.51E-05 | 2.12E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-04 |
| Mercury - Inorganic | 1.42E-05 | 1.49E-05 | 3.38E-06 | 1.71E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.69E-05 |
| Methyl Mercury | 3.01E-06 | 1.84E-06 | 5.65E-07 | 7.22E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.90E-06 |
| Nickel | 3.02E-06 | 1.04E-06 | 8.19E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.41E-06 |
| Phosphorus | 1.28E-11 | 1.65E-11 | 1.50E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-11 |
| Selenium | 5.37E-08 | 3.86E-09 | 3.98E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.60E-08 |
| Silver | 5.67E-07 | 3.13E-07 | 2.07E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-06 |
| Thallium | 2.67E-04 | 1.17E-05 | 4.97E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.36E-04 |
| Tin | 5.51E-08 | 3.56E-08 | 2.16E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-07 |
| Vanadium | 9.66E-08 | 4.15E-08 | 3.43E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.74E-07 |
| Zinc | 1.42E-06 | 1.59E-06 | 1.35E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.03E-06 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 9.64E-12 | 5.28E-12 | -- | 7.94E-12 | 2.48E-12 | 3.83E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.42E-12 | 1.90E-12 | 1.04E-12 | -- | 2.27E-12 | 7.08E-13 | 1.10E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.34E-11 | 1.44E-11 | 7.88E-12 | -- | 1.18E-11 | 3.69E-12 | 5.71E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.25E-05 | 5.40E-06 | 2.96E-06 | -- | 3.11E-06 | 9.70E-07 | 1.50E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 8.39E-05 | 3.61E-05 | 1.98E-05 | -- | 4.46E-06 | 1.39E-06 | 2.15E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.85E-16 | 1.65E-16 | 9.06E-17 | -- | 1.36E-16 | 4.25E-17 | 6.57E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.46E-13 | 6.27E-14 | 3.44E-14 | -- | 2.84E-14 | 8.86E-15 | 1.37E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.99E-13 | 1.28E-13 | 7.04E-14 | -- | 5.29E-13 | 1.65E-13 | 2.55E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.44E-14 | 1.48E-14 | 8.11E-15 | -- | 6.10E-15 | 1.90E-15 | 2.94E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.30E-14 | 2.28E-14 | 1.25E-14 | -- | 1.88E-14 | 5.86E-15 | 9.05E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.88E-09 | 1.24E-09 | 6.78E-10 | -- | 5.10E-10 | 1.59E-10 | 2.46E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.91E-12 | 3.83E-12 | 2.10E-12 | -- | 1.26E-12 | 3.93E-13 | 6.08E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.46E-13 | 1.92E-13 | 1.05E-13 | -- | 7.90E-14 | 2.46E-14 | 3.81E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.19E-10 | 2.23E-10 | 1.22E-10 | -- | 1.20E-10 | 3.73E-11 | 5.76E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.40E-09 | 4.04E-09 | 2.21E-09 | -- | 1.66E-10 | 5.19E-11 | 8.02E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.37E-10 | 3.17E-10 | 1.73E-10 | -- | 1.43E-10 | 4.47E-11 | 6.91E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.03E-06 | 1.30E-06 | 7.13E-07 | -- | 5.36E-07 | 1.67E-07 | 2.58E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.01E-07 | 1.72E-07 | 9.44E-08 | -- | 2.13E-08 | 6.63E-09 | 1.03E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.27E-09 | 1.83E-09 | 1.00E-09 | -- | 7.55E-10 | 2.35E-10 | 3.64E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.82E-07 | 1.64E-07 | 8.99E-08 | -- | 2.03E-08 | 6.32E-09 | 9.77E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.36E-08 | 1.01E-08 | 5.55E-09 | -- | 4.17E-09 | 1.30E-09 | 2.01E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.01E-05 | 4.33E-06 | 2.37E-06 | -- | 2.49E-06 | 7.78E-07 | 1.20E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.82E-10 | 1.21E-10 | 6.64E-11 | -- | 2.00E-11 | 6.23E-12 | 9.63E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.02E-08 | 2.59E-08 | 1.42E-08 | -- | 9.59E-09 | 2.99E-09 | 4.62E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.83E-06 | 7.87E-07 | 4.31E-07 | -- | 3.24E-07 | 1.01E-07 | 1.56E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.32E-05 | 2.72E-05 | 1.49E-05 | -- | 6.72E-07 | 2.09E-07 | 3.24E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.04E-05 | 1.31E-05 | 7.16E-06 | -- | 2.69E-06 | 8.40E-07 | 1.30E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-06 | 6.58E-07 | 3.60E-07 | -- | 5.42E-07 | 1.69E-07 | 2.61E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.74E-06 | 1.18E-06 | 6.46E-07 | -- | 1.70E-06 | 5.30E-07 | 8.20E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.15E-13 | 4.95E-14 | 2.71E-14 | -- | 2.04E-14 | 6.35E-15 | 9.82E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.85E-09 | 2.08E-09 | 1.14E-09 | -- | 1.72E-11 | 5.35E-12 | 8.27E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.56E-08 | 2.39E-08 | 1.31E-08 | -- | 2.46E-08 | 7.67E-09 | 1.19E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.33E-04 | 1.43E-04 | 7.85E-05 | -- | 5.90E-06 | 1.84E-06 | 2.84E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.64E-08 | 4.14E-08 | 2.27E-08 | -- | 1.71E-08 | 5.32E-09 | 8.22E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.07E-07 | 1.32E-07 | 7.22E-08 | -- | 5.43E-08 | 1.69E-08 | 2.62E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.01E-07 | 1.72E-07 | 9.44E-08 | -- | 1.42E-08 | 4.43E-09 | 6.84E-09 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.52E-12 | 5.91E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-12 | 1.30E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.70E-12 | 8.57E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.50E-04 | 6.77E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-03 | 4.09E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-16 | 9.94E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.63E-15 | 3.04E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-13 | 1.62E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-15 | 7.22E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-14 | 1.36E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.97E-09 | 8.68E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-12 | 2.02E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-13 | 1.15E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63E-10 | 1.74E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.83E-09 | 2.28E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.20E-08 | 3.35E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.01E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.06E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.46E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.72E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.68E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.06E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.63E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.55E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.62E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.10E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.66E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.08E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.93E-07 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 3.19E-11 | 7.34E-12 | -- | 5.77E-12 | 1.66E-12 | 2.56E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.47E-11 | 6.30E-12 | 1.45E-12 | -- | 1.65E-12 | 4.74E-13 | 7.31E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.11E-10 | 4.76E-11 | 1.09E-11 | -- | 8.61E-12 | 2.47E-12 | 3.81E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.16E-05 | 1.79E-05 | 4.11E-06 | -- | 2.26E-06 | 6.49E-07 | 1.00E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.78E-04 | 1.19E-04 | 2.75E-05 | -- | 3.24E-06 | 9.30E-07 | 1.43E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.27E-15 | 5.48E-16 | 1.26E-16 | -- | 9.90E-17 | 2.84E-17 | 4.38E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.84E-13 | 2.08E-13 | 4.78E-14 | -- | 2.07E-14 | 5.93E-15 | 9.15E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 9.90E-13 | 4.26E-13 | 9.78E-14 | -- | 3.85E-13 | 1.10E-13 | 1.70E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.14E-13 | 4.91E-14 | 1.13E-14 | -- | 4.43E-15 | 1.27E-15 | 1.96E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.76E-13 | 7.56E-14 | 1.74E-14 | -- | 1.37E-14 | 3.92E-15 | 6.05E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 9.54E-09 | 4.10E-09 | 9.42E-10 | -- | 3.71E-10 | 1.06E-10 | 1.64E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.95E-11 | 1.27E-11 | 2.92E-12 | -- | 9.18E-13 | 2.63E-13 | 4.06E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.48E-12 | 6.35E-13 | 1.46E-13 | -- | 5.74E-14 | 1.65E-14 | 2.54E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.72E-09 | 7.40E-10 | 1.70E-10 | -- | 8.69E-11 | 2.50E-11 | 3.85E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.11E-08 | 1.34E-08 | 3.08E-09 | -- | 1.21E-10 | 3.47E-11 | 5.36E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.44E-09 | 1.05E-09 | 2.41E-10 | -- | 1.04E-10 | 2.99E-11 | 4.62E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-05 | 4.31E-06 | 9.91E-07 | -- | 3.90E-07 | 1.12E-07 | 1.73E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.33E-06 | 5.71E-07 | 1.31E-07 | -- | 1.55E-08 | 4.44E-09 | 6.85E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.41E-08 | 6.08E-09 | 1.40E-09 | -- | 5.49E-10 | 1.58E-10 | 2.43E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.26E-06 | 5.44E-07 | 1.25E-07 | -- | 1.47E-08 | 4.23E-09 | 6.53E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.81E-08 | 3.36E-08 | 7.72E-09 | -- | 3.03E-09 | 8.71E-10 | 1.34E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.33E-05 | 1.43E-05 | 3.29E-06 | -- | 1.81E-06 | 5.21E-07 | 8.03E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.35E-10 | 4.02E-10 | 9.23E-11 | -- | 1.45E-11 | 4.17E-12 | 6.43E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.99E-07 | 8.57E-08 | 1.97E-08 | -- | 6.97E-09 | 2.00E-09 | 3.09E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.06E-06 | 2.61E-06 | 5.99E-07 | -- | 2.36E-07 | 6.76E-08 | 1.04E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.09E-04 | 9.00E-05 | 2.07E-05 | -- | 4.88E-07 | 1.40E-07 | 2.16E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.01E-04 | 4.33E-05 | 9.96E-06 | -- | 1.96E-06 | 5.62E-07 | 8.67E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.07E-06 | 2.18E-06 | 5.01E-07 | -- | 3.94E-07 | 1.13E-07 | 1.74E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.09E-06 | 3.91E-06 | 8.98E-07 | -- | 1.24E-06 | 3.55E-07 | 5.47E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.81E-13 | 1.64E-13 | 3.77E-14 | -- | 1.48E-14 | 4.25E-15 | 6.56E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.61E-08 | 6.90E-09 | 1.59E-09 | -- | 1.25E-11 | 3.58E-12 | 5.52E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.84E-07 | 7.92E-08 | 1.82E-08 | -- | 1.79E-08 | 5.14E-09 | 7.92E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.10E-03 | 4.75E-04 | 1.09E-04 | -- | 4.29E-06 | 1.23E-06 | 1.90E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.19E-07 | 1.37E-07 | 3.15E-08 | -- | 1.24E-08 | 3.56E-09 | 5.49E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.02E-06 | 4.37E-07 | 1.00E-07 | -- | 3.95E-08 | 1.13E-08 | 1.75E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.33E-06 | 5.71E-07 | 1.31E-07 | -- | 1.03E-08 | 2.96E-09 | 4.57E-09 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.06E-10 | 6.03E-10 | 5.42E-11 | 2.32E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-09 |
| Anthracene | 3.60E-11 | 5.35E-11 | 7.58E-14 | 2.41E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-10 |
| Fluorene | 4.06E-10 | 6.04E-10 | 7.21E-13 | 6.80E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.15E-06 | 1.06E-05 | 1.37E-06 | 1.99E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.66E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 6.18E-05 | 4.75E-05 | 9.80E-06 | 3.79E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.53E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.54E-14 | 6.66E-14 | 3.88E-13 | 3.60E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.02E-13 |
| Bromoform | 2.01E-11 | 3.00E-11 | 2.04E-11 | 3.31E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13E-11 |
| Carbon Tetrachloride | 2.39E-11 | 3.47E-11 | 3.23E-10 | 3.68E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-10 |
| Chloroform | 7.84E-12 | 1.16E-11 | 3.94E-11 | 3.48E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-11 |
| Trichlorofluoromethane (FREON 11) | 6.26E-12 | 9.18E-12 | 4.90E-11 | 5.09E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.57E-08 | 2.33E-08 | 3.43E-08 | 2.28E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.86E-08 |
| 1,2,4-Trichlorobenzene | 1.41E-10 | 2.10E-10 | 7.85E-11 | 7.82E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-10 |
| 1,2-Dichlorobenzene | 1.64E-11 | 2.39E-11 | 1.24E-10 | 1.86E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-10 |
| Hexachlorobenzene | 1.47E-09 | 2.17E-09 | 1.50E-09 | 6.54E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.92E-09 |
| Pentachlorobenzene | 3.13E-08 | 4.66E-08 | 1.96E-09 | 1.14E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-07 |
| Pentachlorophenol | 1.29E-07 | 4.01E-09 | 1.37E-07 | 7.23E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.75E-05 | 1.20E-05 | 1.03E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.65E-05 |
| Arsenic | 2.13E-06 | 3.16E-07 | 3.64E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-06 |
| Barium | 2.60E-08 | 1.71E-08 | 7.27E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63E-08 |
| Beryllium | 3.11E-07 | 1.23E-07 | 6.51E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-06 |
| Boron | 5.49E-06 | 6.62E-06 | 5.36E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-05 |
| Cadmium | 1.24E-04 | 1.57E-04 | 7.32E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.42E-04 |
| Chromium (Total) | 2.17E-09 | 1.71E-10 | 1.44E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.81E-09 |
| Chromium VI | 4.63E-07 | 3.66E-08 | 3.08E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.20E-07 |
| Cobalt | 6.99E-06 | 1.97E-06 | 1.46E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-05 |
| Lead | 1.09E-04 | 1.07E-04 | 6.47E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.43E-04 |
| Mercury - Inorganic | 4.87E-05 | 5.49E-05 | 1.24E-05 | 4.96E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.78E-04 |
| Methyl Mercury | 8.74E-06 | 5.60E-06 | 1.72E-06 | 2.10E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-05 |
| Nickel | 8.11E-06 | 3.18E-06 | 2.50E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-05 |
| Phosphorus | 3.81E-11 | 5.01E-11 | 4.58E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.34E-11 |
| Selenium | 1.39E-07 | 1.18E-08 | 1.21E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-07 |
| Silver | 1.56E-06 | 9.55E-07 | 6.32E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.89E-06 |
| Thallium | 6.92E-04 | 3.56E-05 | 1.52E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-03 |
| Tin | 1.53E-07 | 1.09E-07 | 6.57E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.78E-07 |
| Vanadium | 2.62E-07 | 1.27E-07 | 1.05E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-06 |
| Zinc | 4.16E-06 | 4.84E-06 | 4.10E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-05 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 2.69E-12 | 1.47E-12 | -- | 2.22E-12 | 6.91E-13 | 1.07E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.23E-12 | 5.31E-13 | 2.91E-13 | -- | 6.34E-13 | 1.98E-13 | 3.06E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.33E-12 | 4.01E-12 | 2.20E-12 | -- | 3.31E-12 | 1.03E-12 | 1.59E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.50E-06 | 1.51E-06 | 8.25E-07 | -- | 8.68E-07 | 2.71E-07 | 4.18E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.05E-05 | 8.79E-06 | 4.82E-06 | -- | 1.09E-06 | 3.39E-07 | 5.24E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.07E-16 | 4.62E-17 | 2.53E-17 | -- | 3.80E-17 | 1.19E-17 | 1.83E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.07E-14 | 1.75E-14 | 9.59E-15 | -- | 7.93E-15 | 2.47E-15 | 3.82E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 8.34E-14 | 3.59E-14 | 1.96E-14 | -- | 1.48E-13 | 4.60E-14 | 7.12E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 9.61E-15 | 4.13E-15 | 2.26E-15 | -- | 1.70E-15 | 5.31E-16 | 8.20E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.48E-14 | 6.36E-15 | 3.49E-15 | -- | 5.24E-15 | 1.63E-15 | 2.53E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.04E-10 | 3.45E-10 | 1.89E-10 | -- | 1.42E-10 | 4.44E-11 | 6.86E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.49E-12 | 1.07E-12 | 5.86E-13 | -- | 3.52E-13 | 1.10E-13 | 1.70E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.24E-13 | 5.35E-14 | 2.93E-14 | -- | 2.20E-14 | 6.87E-15 | 1.06E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.45E-10 | 6.23E-11 | 3.41E-11 | -- | 3.34E-11 | 1.04E-11 | 1.61E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.62E-09 | 1.13E-09 | 6.18E-10 | -- | 4.64E-11 | 1.45E-11 | 2.24E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.06E-10 | 8.84E-11 | 4.84E-11 | -- | 4.00E-11 | 1.25E-11 | 1.93E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 7.39E-07 | 3.18E-07 | 1.74E-07 | -- | 1.31E-07 | 4.08E-08 | 6.30E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.77E-08 | 4.20E-08 | 2.30E-08 | -- | 5.19E-09 | 1.62E-09 | 2.50E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.04E-09 | 4.47E-10 | 2.45E-10 | -- | 1.84E-10 | 5.74E-11 | 8.87E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 9.31E-08 | 4.00E-08 | 2.19E-08 | -- | 4.94E-09 | 1.54E-09 | 2.38E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.75E-09 | 2.47E-09 | 1.35E-09 | -- | 1.02E-09 | 3.17E-10 | 4.91E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.45E-06 | 1.05E-06 | 5.78E-07 | -- | 6.08E-07 | 1.90E-07 | 2.93E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.88E-11 | 2.96E-11 | 1.62E-11 | -- | 4.87E-12 | 1.52E-12 | 2.35E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.47E-08 | 6.31E-09 | 3.46E-09 | -- | 2.34E-09 | 7.29E-10 | 1.13E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.46E-07 | 1.92E-07 | 1.05E-07 | -- | 7.90E-08 | 2.46E-08 | 3.81E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.54E-05 | 6.63E-06 | 3.63E-06 | -- | 1.64E-07 | 5.10E-08 | 7.89E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.52E-06 | 4.09E-06 | 2.24E-06 | -- | 8.43E-07 | 2.63E-07 | 4.06E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.73E-07 | 1.60E-07 | 8.79E-08 | -- | 1.32E-07 | 4.12E-08 | 6.37E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.69E-07 | 2.88E-07 | 1.58E-07 | -- | 4.15E-07 | 1.29E-07 | 2.00E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.81E-14 | 1.21E-14 | 6.61E-15 | -- | 4.97E-15 | 1.55E-15 | 2.39E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.18E-09 | 5.08E-10 | 2.78E-10 | -- | 4.18E-12 | 1.30E-12 | 2.02E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.36E-08 | 5.83E-09 | 3.19E-09 | -- | 6.00E-09 | 1.87E-09 | 2.89E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 8.13E-05 | 3.49E-05 | 1.91E-05 | -- | 1.44E-06 | 4.49E-07 | 6.94E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.35E-08 | 1.01E-08 | 5.53E-09 | -- | 4.16E-09 | 1.30E-09 | 2.00E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.48E-08 | 3.21E-08 | 1.76E-08 | -- | 1.32E-08 | 4.13E-09 | 6.38E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.78E-08 | 4.20E-08 | 2.30E-08 | -- | 3.46E-09 | 1.08E-09 | 1.67E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-12 | 1.65E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.44E-13 | 3.64E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-12 | 2.39E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-04 | 1.89E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-03 | 1.07E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.04E-17 | 2.77E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-15 | 8.47E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-14 | 4.51E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-15 | 2.02E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-15 | 3.80E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.30E-10 | 2.42E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.60E-13 | 5.63E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57E-14 | 3.23E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-10 | 4.87E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-09 | 6.36E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-08 | 1.29E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.18E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.85E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.58E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.56E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-07 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 8.92E-12 | 2.05E-12 | -- | 1.61E-12 | 4.63E-13 | 7.13E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.09E-12 | 1.76E-12 | 4.04E-13 | -- | 4.61E-13 | 1.32E-13 | 2.04E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.09E-11 | 1.33E-11 | 3.06E-12 | -- | 2.40E-12 | 6.90E-13 | 1.06E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.16E-05 | 4.99E-06 | 1.15E-06 | -- | 6.31E-07 | 1.81E-07 | 2.79E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 6.78E-05 | 2.91E-05 | 6.69E-06 | -- | 7.90E-07 | 2.27E-07 | 3.50E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.56E-16 | 1.53E-16 | 3.51E-17 | -- | 2.76E-17 | 7.94E-18 | 1.22E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.35E-13 | 5.80E-14 | 1.33E-14 | -- | 5.77E-15 | 1.66E-15 | 2.55E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.76E-13 | 1.19E-13 | 2.73E-14 | -- | 1.07E-13 | 3.08E-14 | 4.75E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.18E-14 | 1.37E-14 | 3.15E-15 | -- | 1.24E-15 | 3.55E-16 | 5.48E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.90E-14 | 2.11E-14 | 4.84E-15 | -- | 3.81E-15 | 1.09E-15 | 1.69E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.66E-09 | 1.14E-09 | 2.63E-10 | -- | 1.03E-10 | 2.97E-11 | 4.58E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.24E-12 | 3.54E-12 | 8.14E-13 | -- | 2.56E-13 | 7.35E-14 | 1.13E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.12E-13 | 1.77E-13 | 4.07E-14 | -- | 1.60E-14 | 4.60E-15 | 7.09E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.80E-10 | 2.06E-10 | 4.74E-11 | -- | 2.43E-11 | 6.97E-12 | 1.07E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.69E-09 | 3.74E-09 | 8.59E-10 | -- | 3.38E-11 | 9.70E-12 | 1.49E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 6.81E-10 | 2.93E-10 | 6.73E-11 | -- | 2.91E-11 | 8.36E-12 | 1.29E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.45E-06 | 1.05E-06 | 2.42E-07 | -- | 9.51E-08 | 2.73E-08 | 4.21E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.24E-07 | 1.39E-07 | 3.20E-08 | -- | 3.77E-09 | 1.08E-09 | 1.67E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.45E-09 | 1.48E-09 | 3.40E-10 | -- | 1.34E-10 | 3.84E-11 | 5.93E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.08E-07 | 1.33E-07 | 3.05E-08 | -- | 3.59E-09 | 1.03E-09 | 1.59E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.90E-08 | 8.19E-09 | 1.88E-09 | -- | 7.40E-10 | 2.12E-10 | 3.28E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.13E-06 | 3.49E-06 | 8.03E-07 | -- | 4.42E-07 | 1.27E-07 | 1.96E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.28E-10 | 9.80E-11 | 2.25E-11 | -- | 3.54E-12 | 1.02E-12 | 1.57E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.86E-08 | 2.09E-08 | 4.80E-09 | -- | 1.70E-09 | 4.88E-10 | 7.53E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.48E-06 | 6.36E-07 | 1.46E-07 | -- | 5.74E-08 | 1.65E-08 | 2.54E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.11E-05 | 2.20E-05 | 5.04E-06 | -- | 1.19E-07 | 3.42E-08 | 5.27E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.15E-05 | 1.36E-05 | 3.11E-06 | -- | 6.13E-07 | 1.76E-07 | 2.71E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.24E-06 | 5.31E-07 | 1.22E-07 | -- | 9.61E-08 | 2.76E-08 | 4.25E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.22E-06 | 9.53E-07 | 2.19E-07 | -- | 3.01E-07 | 8.66E-08 | 1.33E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 9.29E-14 | 4.00E-14 | 9.18E-15 | -- | 3.61E-15 | 1.04E-15 | 1.60E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.92E-09 | 1.68E-09 | 3.87E-10 | -- | 3.04E-12 | 8.74E-13 | 1.35E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.49E-08 | 1.93E-08 | 4.44E-09 | -- | 4.36E-09 | 1.25E-09 | 1.93E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.69E-04 | 1.16E-04 | 2.66E-05 | -- | 1.05E-06 | 3.00E-07 | 4.63E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.78E-08 | 3.35E-08 | 7.69E-09 | -- | 3.02E-09 | 8.68E-10 | 1.34E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.48E-07 | 1.07E-07 | 2.45E-08 | -- | 9.62E-09 | 2.76E-09 | 4.26E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.24E-07 | 1.39E-07 | 3.20E-08 | -- | 2.52E-09 | 7.23E-10 | 1.11E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.13E-10 | 1.68E-10 | 1.51E-11 | 6.48E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.96E-10 |
| Anthracene | 1.01E-11 | 1.49E-11 | 2.11E-14 | 1.10E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-11 |
| Fluorene | 1.13E-10 | 1.68E-10 | 2.01E-13 | 3.10E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-06 | 2.96E-06 | 3.81E-07 | 9.08E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.65E-05 | 1.16E-05 | 2.39E-06 | 1.73E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.28E-14 | 1.86E-14 | 1.08E-13 | 1.64E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-13 |
| Bromoform | 5.62E-12 | 8.37E-12 | 5.69E-12 | 1.51E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-11 |
| Carbon Tetrachloride | 6.80E-12 | 9.68E-12 | 9.02E-11 | 1.68E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| Chloroform | 2.20E-12 | 3.23E-12 | 1.10E-11 | 1.58E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-11 |
| Trichlorofluoromethane (FREON 11) | 1.76E-12 | 2.56E-12 | 1.37E-11 | 2.32E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.38E-09 | 6.51E-09 | 9.57E-09 | 1.04E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-08 |
| 1,2,4-Trichlorobenzene | 3.94E-11 | 5.85E-11 | 2.19E-11 | 3.56E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-10 |
| 1,2-Dichlorobenzene | 4.64E-12 | 6.68E-12 | 3.47E-11 | 8.48E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.68E-11 |
| Hexachlorobenzene | 4.11E-10 | 6.05E-10 | 4.19E-10 | 2.98E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-09 |
| Pentachlorobenzene | 8.74E-09 | 1.30E-08 | 5.48E-10 | 5.19E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.56E-08 |
| Pentachlorophenol | 5.84E-08 | 1.12E-09 | 3.82E-08 | 3.29E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 4.28E-06 | 2.93E-06 | 2.52E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-05 |
| Arsenic | 5.24E-07 | 7.70E-08 | 8.88E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-06 |
| Barium | 6.37E-09 | 4.17E-09 | 1.77E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-08 |
| Beryllium | 7.63E-08 | 2.99E-08 | 1.59E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.85E-07 |
| Boron | 1.34E-06 | 1.61E-06 | 1.31E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-06 |
| Cadmium | 3.04E-05 | 3.82E-05 | 1.78E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.35E-05 |
| Chromium (Total) | 5.34E-10 | 4.18E-11 | 3.52E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.34E-10 |
| Chromium VI | 1.14E-07 | 8.91E-09 | 7.51E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-07 |
| Cobalt | 1.72E-06 | 4.81E-07 | 3.55E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.59E-06 |
| Lead | 2.67E-05 | 2.61E-05 | 1.58E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-04 |
| Mercury - Inorganic | 1.63E-05 | 1.72E-05 | 3.89E-06 | 2.26E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.89E-05 |
| Methyl Mercury | 2.91E-06 | 1.37E-06 | 4.20E-07 | 9.56E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.71E-06 |
| Nickel | 1.99E-06 | 7.75E-07 | 6.08E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.74E-06 |
| Phosphorus | 9.30E-12 | 1.22E-11 | 1.12E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-11 |
| Selenium | 3.43E-08 | 2.87E-09 | 2.96E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-08 |
| Silver | 3.83E-07 | 2.33E-07 | 1.54E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.07E-07 |
| Thallium | 1.70E-04 | 8.68E-06 | 3.70E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.93E-04 |
| Tin | 3.76E-08 | 2.65E-08 | 1.60E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-07 |
| Vanadium | 6.44E-08 | 3.09E-08 | 2.55E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.93E-07 |
| Zinc | 1.02E-06 | 1.18E-06 | 1.00E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.70E-06 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 4.09E-12 | 2.24E-12 | -- | 3.37E-12 | 1.05E-12 | 1.62E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.88E-12 | 8.06E-13 | 4.42E-13 | -- | 9.63E-13 | 3.00E-13 | 4.64E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.42E-11 | 6.10E-12 | 3.34E-12 | -- | 5.02E-12 | 1.57E-12 | 2.42E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.31E-06 | 2.28E-06 | 1.25E-06 | -- | 1.32E-06 | 4.10E-07 | 6.34E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.84E-05 | 1.65E-05 | 9.04E-06 | -- | 2.04E-06 | 6.35E-07 | 9.82E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.63E-16 | 7.01E-17 | 3.84E-17 | -- | 5.78E-17 | 1.80E-17 | 2.78E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.19E-14 | 2.66E-14 | 1.46E-14 | -- | 1.21E-14 | 3.76E-15 | 5.81E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.27E-13 | 5.45E-14 | 2.98E-14 | -- | 2.24E-13 | 6.99E-14 | 1.08E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.46E-14 | 6.28E-15 | 3.44E-15 | -- | 2.59E-15 | 8.06E-16 | 1.25E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.25E-14 | 9.67E-15 | 5.30E-15 | -- | 7.96E-15 | 2.48E-15 | 3.84E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.22E-09 | 5.25E-10 | 2.87E-10 | -- | 2.16E-10 | 6.74E-11 | 1.04E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.78E-12 | 1.62E-12 | 8.90E-13 | -- | 5.35E-13 | 1.67E-13 | 2.58E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.89E-13 | 8.13E-14 | 4.45E-14 | -- | 3.35E-14 | 1.04E-14 | 1.61E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.20E-10 | 9.47E-11 | 5.19E-11 | -- | 5.07E-11 | 1.58E-11 | 2.44E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.99E-09 | 1.71E-09 | 9.38E-10 | -- | 7.06E-11 | 2.20E-11 | 3.40E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.12E-10 | 1.34E-10 | 7.35E-11 | -- | 6.08E-11 | 1.90E-11 | 2.93E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.39E-06 | 5.97E-07 | 3.27E-07 | -- | 2.46E-07 | 7.66E-08 | 1.18E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.84E-07 | 7.89E-08 | 4.32E-08 | -- | 9.75E-09 | 3.04E-09 | 4.70E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.95E-09 | 8.40E-10 | 4.60E-10 | -- | 3.46E-10 | 1.08E-10 | 1.67E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.75E-07 | 7.52E-08 | 4.12E-08 | -- | 9.29E-09 | 2.89E-09 | 4.48E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.08E-08 | 4.65E-09 | 2.54E-09 | -- | 1.91E-09 | 5.96E-10 | 9.22E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.61E-06 | 1.98E-06 | 1.09E-06 | -- | 1.14E-06 | 3.56E-07 | 5.51E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.29E-10 | 5.56E-11 | 3.04E-11 | -- | 9.16E-12 | 2.85E-12 | 4.41E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.76E-08 | 1.19E-08 | 6.49E-09 | -- | 4.39E-09 | 1.37E-09 | 2.12E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.39E-07 | 3.60E-07 | 1.97E-07 | -- | 1.48E-07 | 4.63E-08 | 7.16E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.90E-05 | 1.24E-05 | 6.82E-06 | -- | 3.08E-07 | 9.59E-08 | 1.48E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.45E-05 | 6.23E-06 | 3.41E-06 | -- | 1.28E-06 | 4.00E-07 | 6.19E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 7.01E-07 | 3.01E-07 | 1.65E-07 | -- | 2.48E-07 | 7.74E-08 | 1.20E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.26E-06 | 5.41E-07 | 2.96E-07 | -- | 7.79E-07 | 2.43E-07 | 3.76E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.27E-14 | 2.27E-14 | 1.24E-14 | -- | 9.34E-15 | 2.91E-15 | 4.50E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.22E-09 | 9.55E-10 | 5.23E-10 | -- | 7.87E-12 | 2.45E-12 | 3.79E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.55E-08 | 1.10E-08 | 6.00E-09 | -- | 1.13E-08 | 3.52E-09 | 5.43E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.53E-04 | 6.57E-05 | 3.60E-05 | -- | 2.70E-06 | 8.43E-07 | 1.30E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.41E-08 | 1.90E-08 | 1.04E-08 | -- | 7.81E-09 | 2.44E-09 | 3.77E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.40E-07 | 6.04E-08 | 3.31E-08 | -- | 2.49E-08 | 7.75E-09 | 1.20E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.84E-07 | 7.90E-08 | 4.33E-08 | -- | 6.50E-09 | 2.03E-09 | 3.13E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-12 | 2.51E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.74E-13 | 5.52E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-12 | 3.63E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-04 | 2.87E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-03 | 1.97E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.61E-17 | 4.21E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-15 | 1.29E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-14 | 6.86E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-15 | 3.06E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.92E-15 | 5.77E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-09 | 3.68E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-12 | 8.56E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-13 | 4.90E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-10 | 7.40E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-09 | 9.66E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-08 | 1.97E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.23E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.88E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.14E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.73E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.38E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.71E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.75E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.18E-07 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 1.35E-11 | 3.11E-12 | -- | 2.45E-12 | 7.03E-13 | 1.08E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.21E-12 | 2.67E-12 | 6.14E-13 | -- | 7.00E-13 | 2.01E-13 | 3.10E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.70E-11 | 2.02E-11 | 4.64E-12 | -- | 3.65E-12 | 1.05E-12 | 1.62E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.76E-05 | 7.56E-06 | 1.74E-06 | -- | 9.57E-07 | 2.75E-07 | 4.24E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.27E-04 | 5.47E-05 | 1.26E-05 | -- | 1.48E-06 | 4.25E-07 | 6.56E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.40E-16 | 2.32E-16 | 5.34E-17 | -- | 4.20E-17 | 1.21E-17 | 1.86E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.05E-13 | 8.81E-14 | 2.03E-14 | -- | 8.76E-15 | 2.52E-15 | 3.88E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.20E-13 | 1.80E-13 | 4.15E-14 | -- | 1.63E-13 | 4.68E-14 | 7.22E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.84E-14 | 2.08E-14 | 4.78E-15 | -- | 1.88E-15 | 5.40E-16 | 8.32E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.45E-14 | 3.20E-14 | 7.36E-15 | -- | 5.79E-15 | 1.66E-15 | 2.56E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.05E-09 | 1.74E-09 | 4.00E-10 | -- | 1.57E-10 | 4.51E-11 | 6.96E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.25E-11 | 5.38E-12 | 1.24E-12 | -- | 3.89E-13 | 1.12E-13 | 1.72E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.26E-13 | 2.69E-13 | 6.19E-14 | -- | 2.43E-14 | 6.99E-15 | 1.08E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.30E-10 | 3.14E-10 | 7.21E-11 | -- | 3.69E-11 | 1.06E-11 | 1.63E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.32E-08 | 5.68E-09 | 1.30E-09 | -- | 5.13E-11 | 1.47E-11 | 2.27E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.03E-09 | 4.45E-10 | 1.02E-10 | -- | 4.42E-11 | 1.27E-11 | 1.96E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.60E-06 | 1.98E-06 | 4.54E-07 | -- | 1.79E-07 | 5.13E-08 | 7.91E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.08E-07 | 2.62E-07 | 6.01E-08 | -- | 7.09E-09 | 2.04E-09 | 3.14E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.48E-09 | 2.78E-09 | 6.40E-10 | -- | 2.52E-10 | 7.22E-11 | 1.11E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 5.79E-07 | 2.49E-07 | 5.72E-08 | -- | 6.75E-09 | 1.94E-09 | 2.99E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.58E-08 | 1.54E-08 | 3.54E-09 | -- | 1.39E-09 | 3.99E-10 | 6.16E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-05 | 6.57E-06 | 1.51E-06 | -- | 8.31E-07 | 2.39E-07 | 3.68E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.28E-10 | 1.84E-10 | 4.23E-11 | -- | 6.66E-12 | 1.91E-12 | 2.95E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.14E-08 | 3.93E-08 | 9.03E-09 | -- | 3.20E-09 | 9.17E-10 | 1.41E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.78E-06 | 1.19E-06 | 2.74E-07 | -- | 1.08E-07 | 3.10E-08 | 4.78E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 9.59E-05 | 4.12E-05 | 9.48E-06 | -- | 2.24E-07 | 6.42E-08 | 9.90E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.80E-05 | 2.07E-05 | 4.74E-06 | -- | 9.33E-07 | 2.68E-07 | 4.13E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.32E-06 | 9.98E-07 | 2.29E-07 | -- | 1.80E-07 | 5.18E-08 | 7.99E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.17E-06 | 1.79E-06 | 4.12E-07 | -- | 5.66E-07 | 1.63E-07 | 2.51E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.75E-13 | 7.51E-14 | 1.73E-14 | -- | 6.79E-15 | 1.95E-15 | 3.01E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.36E-09 | 3.16E-09 | 7.27E-10 | -- | 5.72E-12 | 1.64E-12 | 2.53E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.44E-08 | 3.63E-08 | 8.34E-09 | -- | 8.20E-09 | 2.35E-09 | 3.63E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.06E-04 | 2.18E-04 | 5.00E-05 | -- | 1.97E-06 | 5.65E-07 | 8.70E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.46E-07 | 6.29E-08 | 1.44E-08 | -- | 5.68E-09 | 1.63E-09 | 2.51E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.65E-07 | 2.00E-07 | 4.60E-08 | -- | 1.81E-08 | 5.19E-09 | 8.00E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.09E-07 | 2.62E-07 | 6.01E-08 | -- | 4.73E-09 | 1.36E-09 | 2.09E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.72E-10 | 2.56E-10 | 2.30E-11 | 9.84E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.02E-10 |
| Anthracene | 1.53E-11 | 2.27E-11 | 3.21E-14 | 1.68E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.87E-11 |
| Fluorene | 1.72E-10 | 2.56E-10 | 3.05E-13 | 4.73E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.07E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 3.04E-06 | 4.48E-06 | 5.78E-07 | 1.39E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.08E-05 | 2.17E-05 | 4.48E-06 | 2.64E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.94E-14 | 2.82E-14 | 1.64E-13 | 2.51E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-13 |
| Bromoform | 8.54E-12 | 1.27E-11 | 8.65E-12 | 2.30E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-11 |
| Carbon Tetrachloride | 1.03E-11 | 1.47E-11 | 1.37E-10 | 2.56E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-10 |
| Chloroform | 3.34E-12 | 4.91E-12 | 1.67E-11 | 2.42E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-11 |
| Trichlorofluoromethane (FREON 11) | 2.68E-12 | 3.89E-12 | 2.08E-11 | 3.54E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.65E-09 | 9.89E-09 | 1.45E-08 | 1.59E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-08 |
| 1,2,4-Trichlorobenzene | 5.98E-11 | 8.89E-11 | 3.33E-11 | 5.44E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-10 |
| 1,2-Dichlorobenzene | 7.04E-12 | 1.01E-11 | 5.27E-11 | 1.29E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.11E-11 |
| Hexachlorobenzene | 6.25E-10 | 9.18E-10 | 6.37E-10 | 4.55E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-09 |
| Pentachlorobenzene | 1.33E-08 | 1.97E-08 | 8.33E-10 | 7.93E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.41E-08 |
| Pentachlorophenol | 8.92E-08 | 1.70E-09 | 5.81E-08 | 5.03E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 8.38E-06 | 5.51E-06 | 4.73E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-05 |
| Arsenic | 1.05E-06 | 1.45E-07 | 1.67E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-06 |
| Barium | 1.25E-08 | 7.83E-09 | 3.33E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.10E-08 |
| Beryllium | 1.52E-07 | 5.61E-08 | 2.98E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-06 |
| Boron | 2.56E-06 | 3.03E-06 | 2.46E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-06 |
| Cadmium | 5.78E-05 | 7.17E-05 | 3.35E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-04 |
| Chromium (Total) | 1.08E-09 | 7.85E-11 | 6.61E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-09 |
| Chromium VI | 2.30E-07 | 1.68E-08 | 1.41E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-07 |
| Cobalt | 3.43E-06 | 9.03E-07 | 6.67E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.84E-06 |
| Lead | 5.14E-05 | 4.90E-05 | 2.96E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-04 |
| Mercury - Inorganic | 2.52E-05 | 2.62E-05 | 5.93E-06 | 3.45E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-04 |
| Methyl Mercury | 4.93E-06 | 2.56E-06 | 7.89E-07 | 1.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-05 |
| Nickel | 3.96E-06 | 1.46E-06 | 1.14E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-05 |
| Phosphorus | 1.76E-11 | 2.30E-11 | 2.10E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.30E-11 |
| Selenium | 6.92E-08 | 5.39E-09 | 5.55E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.64E-08 |
| Silver | 7.52E-07 | 4.38E-07 | 2.90E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-06 |
| Thallium | 3.44E-04 | 1.63E-05 | 6.94E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-03 |
| Tin | 7.35E-08 | 4.97E-08 | 3.01E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-07 |
| Vanadium | 1.27E-07 | 5.80E-08 | 4.79E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.33E-07 |
| Zinc | 1.94E-06 | 2.22E-06 | 1.88E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.98E-06 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 1.86E-12 | 1.02E-12 | -- | 1.54E-12 | 4.79E-13 | 7.40E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.55E-13 | 3.68E-13 | 2.01E-13 | -- | 4.39E-13 | 1.37E-13 | 2.12E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 6.47E-12 | 2.78E-12 | 1.52E-12 | -- | 2.29E-12 | 7.14E-13 | 1.10E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.43E-06 | 1.04E-06 | 5.72E-07 | -- | 6.02E-07 | 1.88E-07 | 2.90E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.33E-05 | 5.71E-06 | 3.13E-06 | -- | 7.06E-07 | 2.20E-07 | 3.40E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 7.44E-17 | 3.20E-17 | 1.75E-17 | -- | 2.63E-17 | 8.21E-18 | 1.27E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.82E-14 | 1.21E-14 | 6.64E-15 | -- | 5.49E-15 | 1.71E-15 | 2.65E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 5.78E-14 | 2.48E-14 | 1.36E-14 | -- | 1.02E-13 | 3.19E-14 | 4.93E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 6.66E-15 | 2.86E-15 | 1.57E-15 | -- | 1.18E-15 | 3.67E-16 | 5.68E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.03E-14 | 4.41E-15 | 2.41E-15 | -- | 3.63E-15 | 1.13E-15 | 1.75E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 5.57E-10 | 2.39E-10 | 1.31E-10 | -- | 9.86E-11 | 3.07E-11 | 4.75E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.72E-12 | 7.40E-13 | 4.06E-13 | -- | 2.44E-13 | 7.61E-14 | 1.18E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 8.62E-14 | 3.71E-14 | 2.03E-14 | -- | 1.53E-14 | 4.76E-15 | 7.36E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-10 | 4.32E-11 | 2.36E-11 | -- | 2.31E-11 | 7.20E-12 | 1.11E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.82E-09 | 7.81E-10 | 4.28E-10 | -- | 3.22E-11 | 1.00E-11 | 1.55E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-10 | 6.12E-11 | 3.35E-11 | -- | 2.77E-11 | 8.64E-12 | 1.34E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.79E-07 | 2.06E-07 | 1.13E-07 | -- | 8.48E-08 | 2.65E-08 | 4.09E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.34E-08 | 2.73E-08 | 1.49E-08 | -- | 3.37E-09 | 1.05E-09 | 1.62E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.75E-10 | 2.90E-10 | 1.59E-10 | -- | 1.19E-10 | 3.72E-11 | 5.76E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 6.04E-08 | 2.60E-08 | 1.42E-08 | -- | 3.21E-09 | 1.00E-09 | 1.55E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.73E-09 | 1.60E-09 | 8.78E-10 | -- | 6.60E-10 | 2.06E-10 | 3.18E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.59E-06 | 6.84E-07 | 3.75E-07 | -- | 3.95E-07 | 1.23E-07 | 1.90E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.46E-11 | 1.92E-11 | 1.05E-11 | -- | 3.16E-12 | 9.85E-13 | 1.52E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.52E-09 | 4.09E-09 | 2.24E-09 | -- | 1.52E-09 | 4.73E-10 | 7.31E-10 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.90E-07 | 1.24E-07 | 6.82E-08 | -- | 5.13E-08 | 1.60E-08 | 2.47E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.00E-05 | 4.30E-06 | 2.36E-06 | -- | 1.06E-07 | 3.31E-08 | 5.12E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.93E-06 | 3.84E-06 | 2.10E-06 | -- | 7.91E-07 | 2.46E-07 | 3.81E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.42E-07 | 1.04E-07 | 5.70E-08 | -- | 8.58E-08 | 2.67E-08 | 4.13E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-07 | 1.87E-07 | 1.02E-07 | -- | 2.69E-07 | 8.39E-08 | 1.30E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.82E-14 | 7.82E-15 | 4.29E-15 | -- | 3.22E-15 | 1.00E-15 | 1.55E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.67E-10 | 3.30E-10 | 1.81E-10 | -- | 2.71E-12 | 8.46E-13 | 1.31E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.79E-09 | 3.78E-09 | 2.07E-09 | -- | 3.89E-09 | 1.21E-09 | 1.88E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.27E-05 | 2.27E-05 | 1.24E-05 | -- | 9.34E-07 | 2.91E-07 | 4.50E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.52E-08 | 6.56E-09 | 3.59E-09 | -- | 2.70E-09 | 8.42E-10 | 1.30E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.85E-08 | 2.09E-08 | 1.14E-08 | -- | 8.59E-09 | 2.68E-09 | 4.14E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.34E-08 | 2.73E-08 | 1.49E-08 | -- | 2.25E-09 | 7.00E-10 | 1.08E-09 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-12 | 1.14E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-13 | 2.52E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-12 | 1.66E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-04 | 1.32E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.48E-04 | 7.71E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-17 | 1.92E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-15 | 5.87E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-14 | 3.13E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.58E-16 | 1.40E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-15 | 2.63E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.75E-10 | 1.68E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.96E-13 | 3.90E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-14 | 2.24E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-10 | 3.38E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-09 | 4.41E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-08 | 1.24E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.50E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.40E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.00E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.74E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.95E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.63E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-07 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 6.17E-12 | 1.42E-12 | -- | 1.12E-12 | 3.20E-13 | 4.94E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.83E-12 | 1.22E-12 | 2.80E-13 | -- | 3.19E-13 | 9.17E-14 | 1.41E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.14E-11 | 9.21E-12 | 2.12E-12 | -- | 1.66E-12 | 4.78E-13 | 7.37E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 8.05E-06 | 3.46E-06 | 7.95E-07 | -- | 4.38E-07 | 1.26E-07 | 1.94E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.40E-05 | 1.89E-05 | 4.35E-06 | -- | 5.13E-07 | 1.47E-07 | 2.27E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.46E-16 | 1.06E-16 | 2.43E-17 | -- | 1.91E-17 | 5.50E-18 | 8.47E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.35E-14 | 4.02E-14 | 9.23E-15 | -- | 3.99E-15 | 1.15E-15 | 1.77E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.91E-13 | 8.23E-14 | 1.89E-14 | -- | 7.44E-14 | 2.14E-14 | 3.29E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.21E-14 | 9.48E-15 | 2.18E-15 | -- | 8.57E-16 | 2.46E-16 | 3.79E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.40E-14 | 1.46E-14 | 3.36E-15 | -- | 2.64E-15 | 7.58E-16 | 1.17E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.84E-09 | 7.93E-10 | 1.82E-10 | -- | 7.16E-11 | 2.06E-11 | 3.17E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.71E-12 | 2.45E-12 | 5.64E-13 | -- | 1.77E-13 | 5.09E-14 | 7.85E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.86E-13 | 1.23E-13 | 2.82E-14 | -- | 1.11E-14 | 3.19E-15 | 4.91E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.33E-10 | 1.43E-10 | 3.29E-11 | -- | 1.68E-11 | 4.82E-12 | 7.44E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.02E-09 | 2.59E-09 | 5.95E-10 | -- | 2.34E-11 | 6.72E-12 | 1.04E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.72E-10 | 2.03E-10 | 4.66E-11 | -- | 2.02E-11 | 5.79E-12 | 8.92E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.59E-06 | 6.83E-07 | 1.57E-07 | -- | 6.17E-08 | 1.77E-08 | 2.73E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.10E-07 | 9.03E-08 | 2.07E-08 | -- | 2.45E-09 | 7.03E-10 | 1.08E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.24E-09 | 9.61E-10 | 2.21E-10 | -- | 8.69E-11 | 2.49E-11 | 3.85E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.00E-07 | 8.61E-08 | 1.98E-08 | -- | 2.33E-09 | 6.70E-10 | 1.03E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.24E-08 | 5.31E-09 | 1.22E-09 | -- | 4.80E-10 | 1.38E-10 | 2.13E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.27E-06 | 2.27E-06 | 5.21E-07 | -- | 2.87E-07 | 8.24E-08 | 1.27E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.48E-10 | 6.36E-11 | 1.46E-11 | -- | 2.30E-12 | 6.60E-13 | 1.02E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.15E-08 | 1.36E-08 | 3.12E-09 | -- | 1.10E-09 | 3.17E-10 | 4.88E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 9.59E-07 | 4.12E-07 | 9.48E-08 | -- | 3.73E-08 | 1.07E-08 | 1.65E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.31E-05 | 1.43E-05 | 3.27E-06 | -- | 7.73E-08 | 2.22E-08 | 3.42E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.96E-05 | 1.27E-05 | 2.92E-06 | -- | 5.75E-07 | 1.65E-07 | 2.54E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 8.02E-07 | 3.45E-07 | 7.93E-08 | -- | 6.24E-08 | 1.79E-08 | 2.76E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.44E-06 | 6.18E-07 | 1.42E-07 | -- | 1.96E-07 | 5.62E-08 | 8.66E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 6.03E-14 | 2.59E-14 | 5.96E-15 | -- | 2.34E-15 | 6.73E-16 | 1.04E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.54E-09 | 1.09E-09 | 2.51E-10 | -- | 1.97E-12 | 5.67E-13 | 8.74E-13 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.91E-08 | 1.25E-08 | 2.88E-09 | -- | 2.83E-09 | 8.13E-10 | 1.25E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.75E-04 | 7.51E-05 | 1.73E-05 | -- | 6.79E-07 | 1.95E-07 | 3.01E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.05E-08 | 2.17E-08 | 4.99E-09 | -- | 1.96E-09 | 5.64E-10 | 8.69E-10 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.61E-07 | 6.91E-08 | 1.59E-08 | -- | 6.25E-09 | 1.79E-09 | 2.77E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.10E-07 | 9.03E-08 | 2.08E-08 | -- | 1.63E-09 | 4.69E-10 | 7.23E-10 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 7.88E-11 | 1.17E-10 | 1.05E-11 | 4.50E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-10 |
| Anthracene | 6.97E-12 | 1.03E-11 | 1.46E-14 | 1.17E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-11 |
| Fluorene | 7.85E-11 | 1.17E-10 | 1.39E-13 | 3.30E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.39E-06 | 2.05E-06 | 2.64E-07 | 9.68E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.26E-05 | 7.53E-06 | 1.55E-06 | 1.84E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.17E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 8.95E-15 | 1.29E-14 | 7.49E-14 | 1.75E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.73E-14 |
| Bromoform | 3.90E-12 | 5.79E-12 | 3.94E-12 | 1.61E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-11 |
| Carbon Tetrachloride | 4.82E-12 | 6.70E-12 | 6.25E-11 | 1.79E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.46E-11 |
| Chloroform | 1.53E-12 | 2.24E-12 | 7.61E-12 | 1.69E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-11 |
| Trichlorofluoromethane (FREON 11) | 1.24E-12 | 1.77E-12 | 9.47E-12 | 2.47E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.03E-09 | 4.51E-09 | 6.63E-09 | 1.11E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-08 |
| 1,2,4-Trichlorobenzene | 2.73E-11 | 4.05E-11 | 1.52E-11 | 3.80E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.21E-11 |
| 1,2-Dichlorobenzene | 3.27E-12 | 4.62E-12 | 2.40E-11 | 9.04E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-11 |
| Hexachlorobenzene | 2.87E-10 | 4.19E-10 | 2.90E-10 | 3.18E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-09 |
| Pentachlorobenzene | 6.06E-09 | 9.00E-09 | 3.80E-10 | 5.53E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-08 |
| Pentachlorophenol | 6.20E-08 | 7.74E-10 | 2.65E-08 | 3.51E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 3.03E-06 | 1.90E-06 | 1.63E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.63E-06 |
| Arsenic | 3.91E-07 | 4.99E-08 | 5.76E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.72E-07 |
| Barium | 4.52E-09 | 2.70E-09 | 1.15E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-08 |
| Beryllium | 5.56E-08 | 1.94E-08 | 1.03E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-07 |
| Boron | 8.99E-07 | 1.05E-06 | 8.48E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-06 |
| Cadmium | 2.02E-05 | 2.48E-05 | 1.16E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.47E-05 |
| Chromium (Total) | 4.02E-10 | 2.71E-11 | 2.28E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.61E-10 |
| Chromium VI | 8.57E-08 | 5.78E-09 | 4.87E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-07 |
| Cobalt | 1.27E-06 | 3.12E-07 | 2.30E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-06 |
| Lead | 1.83E-05 | 1.69E-05 | 1.02E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.71E-05 |
| Mercury - Inorganic | 1.56E-05 | 1.61E-05 | 3.65E-06 | 2.41E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.40E-05 |
| Methyl Mercury | 2.62E-06 | 8.86E-07 | 2.73E-07 | 1.02E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-06 |
| Nickel | 1.45E-06 | 5.03E-07 | 3.95E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.53E-06 |
| Phosphorus | 6.15E-12 | 7.93E-12 | 7.24E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-11 |
| Selenium | 2.58E-08 | 1.86E-09 | 1.92E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-08 |
| Silver | 2.73E-07 | 1.51E-07 | 9.99E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.83E-07 |
| Thallium | 1.28E-04 | 5.63E-06 | 2.40E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.03E-04 |
| Tin | 2.65E-08 | 1.72E-08 | 1.04E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-07 |
| Vanadium | 4.65E-08 | 2.00E-08 | 1.66E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-07 |
| Zinc | 6.85E-07 | 7.66E-07 | 6.49E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-06 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 6.06E-12 | 3.32E-12 | -- | 4.99E-12 | 1.56E-12 | 2.41E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.78E-12 | 1.20E-12 | 6.55E-13 | -- | 1.43E-12 | 4.45E-13 | 6.88E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.10E-11 | 9.04E-12 | 4.95E-12 | -- | 7.45E-12 | 2.32E-12 | 3.59E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 7.89E-06 | 3.39E-06 | 1.86E-06 | -- | 1.96E-06 | 6.10E-07 | 9.42E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.65E-05 | 2.00E-05 | 1.10E-05 | -- | 2.47E-06 | 7.70E-07 | 1.19E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.42E-16 | 1.04E-16 | 5.70E-17 | -- | 8.56E-17 | 2.67E-17 | 4.13E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.18E-14 | 3.94E-14 | 2.16E-14 | -- | 1.79E-14 | 5.57E-15 | 8.61E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.88E-13 | 8.08E-14 | 4.43E-14 | -- | 3.33E-13 | 1.04E-13 | 1.60E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.17E-14 | 9.31E-15 | 5.10E-15 | -- | 3.83E-15 | 1.20E-15 | 1.85E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.34E-14 | 1.43E-14 | 7.85E-15 | -- | 1.18E-14 | 3.68E-15 | 5.69E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.81E-09 | 7.78E-10 | 4.26E-10 | -- | 3.21E-10 | 9.99E-11 | 1.55E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.60E-12 | 2.41E-12 | 1.32E-12 | -- | 7.94E-13 | 2.47E-13 | 3.82E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.80E-13 | 1.21E-13 | 6.60E-14 | -- | 4.96E-14 | 1.55E-14 | 2.39E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.27E-10 | 1.40E-10 | 7.69E-11 | -- | 7.52E-11 | 2.34E-11 | 3.62E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.91E-09 | 2.54E-09 | 1.39E-09 | -- | 1.05E-10 | 3.26E-11 | 5.04E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.63E-10 | 1.99E-10 | 1.09E-10 | -- | 9.02E-11 | 2.81E-11 | 4.35E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.68E-06 | 7.22E-07 | 3.95E-07 | -- | 2.97E-07 | 9.27E-08 | 1.43E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.22E-07 | 9.55E-08 | 5.23E-08 | -- | 1.18E-08 | 3.68E-09 | 5.69E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.36E-09 | 1.02E-09 | 5.57E-10 | -- | 4.19E-10 | 1.31E-10 | 2.02E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.12E-07 | 9.10E-08 | 4.98E-08 | -- | 1.12E-08 | 3.50E-09 | 5.42E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.31E-08 | 5.62E-09 | 3.08E-09 | -- | 2.31E-09 | 7.22E-10 | 1.12E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.58E-06 | 2.40E-06 | 1.31E-06 | -- | 1.38E-06 | 4.31E-07 | 6.67E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.56E-10 | 6.72E-11 | 3.68E-11 | -- | 1.11E-11 | 3.45E-12 | 5.34E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.34E-08 | 1.43E-08 | 7.86E-09 | -- | 5.32E-09 | 1.66E-09 | 2.56E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.01E-06 | 4.36E-07 | 2.39E-07 | -- | 1.80E-07 | 5.60E-08 | 8.66E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.50E-05 | 1.51E-05 | 8.25E-06 | -- | 3.72E-07 | 1.16E-07 | 1.79E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.01E-05 | 8.66E-06 | 4.74E-06 | -- | 1.78E-06 | 5.56E-07 | 8.60E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 8.48E-07 | 3.65E-07 | 2.00E-07 | -- | 3.00E-07 | 9.37E-08 | 1.45E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.52E-06 | 6.54E-07 | 3.58E-07 | -- | 9.43E-07 | 2.94E-07 | 4.54E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 6.38E-14 | 2.74E-14 | 1.50E-14 | -- | 1.13E-14 | 3.52E-15 | 5.44E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.69E-09 | 1.16E-09 | 6.33E-10 | -- | 9.52E-12 | 2.97E-12 | 4.59E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.08E-08 | 1.33E-08 | 7.26E-09 | -- | 1.36E-08 | 4.25E-09 | 6.58E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.85E-04 | 7.95E-05 | 4.35E-05 | -- | 3.27E-06 | 1.02E-06 | 1.58E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.34E-08 | 2.30E-08 | 1.26E-08 | -- | 9.46E-09 | 2.95E-09 | 4.56E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.70E-07 | 7.31E-08 | 4.00E-08 | -- | 3.01E-08 | 9.39E-09 | 1.45E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.22E-07 | 9.56E-08 | 5.23E-08 | -- | 7.87E-09 | 2.45E-09 | 3.79E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-12 | 3.72E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-12 | 8.20E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.47E-12 | 5.39E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-04 | 4.26E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-03 | 2.36E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.84E-17 | 6.25E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-15 | 1.91E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-13 | 1.02E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-15 | 4.54E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.78E-15 | 8.55E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-09 | 5.46E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-12 | 1.27E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-13 | 7.26E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.18E-10 | 1.10E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.30E-09 | 1.43E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-08 | 2.54E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.69E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.80E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.51E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.23E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.58E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-07 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 2.01E-11 | 4.62E-12 | -- | 3.63E-12 | 1.04E-12 | 1.61E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.22E-12 | 3.96E-12 | 9.11E-13 | -- | 1.04E-12 | 2.98E-13 | 4.60E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 6.97E-11 | 3.00E-11 | 6.88E-12 | -- | 5.41E-12 | 1.55E-12 | 2.40E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.61E-05 | 1.12E-05 | 2.58E-06 | -- | 1.42E-06 | 4.08E-07 | 6.29E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.54E-04 | 6.62E-05 | 1.52E-05 | -- | 1.80E-06 | 5.16E-07 | 7.95E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.01E-16 | 3.45E-16 | 7.92E-17 | -- | 6.23E-17 | 1.79E-17 | 2.76E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.04E-13 | 1.31E-13 | 3.00E-14 | -- | 1.30E-14 | 3.73E-15 | 5.75E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.23E-13 | 2.68E-13 | 6.15E-14 | -- | 2.42E-13 | 6.95E-14 | 1.07E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.18E-14 | 3.08E-14 | 7.09E-15 | -- | 2.79E-15 | 8.00E-16 | 1.23E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.10E-13 | 4.75E-14 | 1.09E-14 | -- | 8.59E-15 | 2.47E-15 | 3.80E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.00E-09 | 2.58E-09 | 5.93E-10 | -- | 2.33E-10 | 6.69E-11 | 1.03E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.86E-11 | 7.98E-12 | 1.83E-12 | -- | 5.77E-13 | 1.66E-13 | 2.55E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 9.29E-13 | 3.99E-13 | 9.18E-14 | -- | 3.61E-14 | 1.04E-14 | 1.60E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.08E-09 | 4.65E-10 | 1.07E-10 | -- | 5.47E-11 | 1.57E-11 | 2.42E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.96E-08 | 8.42E-09 | 1.93E-09 | -- | 7.61E-11 | 2.18E-11 | 3.37E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.53E-09 | 6.60E-10 | 1.52E-10 | -- | 6.56E-11 | 1.88E-11 | 2.90E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.56E-06 | 2.39E-06 | 5.50E-07 | -- | 2.16E-07 | 6.21E-08 | 9.57E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.36E-07 | 3.16E-07 | 7.27E-08 | -- | 8.58E-09 | 2.46E-09 | 3.80E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.84E-09 | 3.37E-09 | 7.74E-10 | -- | 3.04E-10 | 8.74E-11 | 1.35E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 7.01E-07 | 3.01E-07 | 6.93E-08 | -- | 8.17E-09 | 2.35E-09 | 3.62E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.33E-08 | 1.86E-08 | 4.28E-09 | -- | 1.68E-09 | 4.83E-10 | 7.45E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.85E-05 | 7.95E-06 | 1.83E-06 | -- | 1.01E-06 | 2.89E-07 | 4.45E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.18E-10 | 2.23E-10 | 5.12E-11 | -- | 8.05E-12 | 2.31E-12 | 3.57E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.11E-07 | 4.75E-08 | 1.09E-08 | -- | 3.87E-09 | 1.11E-09 | 1.71E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.36E-06 | 1.45E-06 | 3.32E-07 | -- | 1.31E-07 | 3.75E-08 | 5.78E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.16E-04 | 4.99E-05 | 1.15E-05 | -- | 2.71E-07 | 7.77E-08 | 1.20E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.68E-05 | 2.87E-05 | 6.59E-06 | -- | 1.30E-06 | 3.72E-07 | 5.74E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.81E-06 | 1.21E-06 | 2.78E-07 | -- | 2.18E-07 | 6.27E-08 | 9.67E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.04E-06 | 2.17E-06 | 4.98E-07 | -- | 6.86E-07 | 1.97E-07 | 3.04E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.11E-13 | 9.09E-14 | 2.09E-14 | -- | 8.21E-15 | 2.36E-15 | 3.64E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.90E-09 | 3.83E-09 | 8.80E-10 | -- | 6.92E-12 | 1.99E-12 | 3.06E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.02E-07 | 4.39E-08 | 1.01E-08 | -- | 9.92E-09 | 2.85E-09 | 4.39E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 6.12E-04 | 2.63E-04 | 6.05E-05 | -- | 2.38E-06 | 6.83E-07 | 1.05E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.77E-07 | 7.61E-08 | 1.75E-08 | -- | 6.88E-09 | 1.97E-09 | 3.04E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 5.63E-07 | 2.42E-07 | 5.57E-08 | -- | 2.19E-08 | 6.29E-09 | 9.69E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.36E-07 | 3.17E-07 | 7.28E-08 | -- | 5.72E-09 | 1.64E-09 | 2.53E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 2.56E-10 | 3.79E-10 | 3.41E-11 | 1.46E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.92E-10 |
| Anthracene | 2.26E-11 | 3.36E-11 | 4.76E-14 | 2.03E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.22E-11 |
| Fluorene | 2.55E-10 | 3.80E-10 | 4.53E-13 | 5.73E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.51E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.50E-06 | 6.66E-06 | 8.59E-07 | 1.68E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.45E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.57E-05 | 2.63E-05 | 5.43E-06 | 3.19E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.87E-14 | 4.18E-14 | 2.44E-13 | 3.03E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-13 |
| Bromoform | 1.27E-11 | 1.88E-11 | 1.28E-11 | 2.79E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-11 |
| Carbon Tetrachloride | 1.52E-11 | 2.18E-11 | 2.03E-10 | 3.10E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-10 |
| Chloroform | 4.94E-12 | 7.28E-12 | 2.48E-11 | 2.93E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.71E-11 |
| Trichlorofluoromethane (FREON 11) | 3.95E-12 | 5.77E-12 | 3.08E-11 | 4.28E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 9.86E-09 | 1.47E-08 | 2.16E-08 | 1.92E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-08 |
| 1,2,4-Trichlorobenzene | 8.87E-11 | 1.32E-10 | 4.94E-11 | 6.59E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.99E-10 |
| 1,2-Dichlorobenzene | 1.04E-11 | 1.50E-11 | 7.82E-11 | 1.57E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-10 |
| Hexachlorobenzene | 9.25E-10 | 1.36E-09 | 9.45E-10 | 5.51E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.99E-09 |
| Pentachlorobenzene | 1.97E-08 | 2.93E-08 | 1.24E-09 | 9.59E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.03E-08 |
| Pentachlorophenol | 1.08E-07 | 2.52E-09 | 8.61E-08 | 6.08E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 9.52E-06 | 6.67E-06 | 5.73E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-05 |
| Arsenic | 1.15E-06 | 1.75E-07 | 2.02E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-06 |
| Barium | 1.41E-08 | 9.48E-09 | 4.03E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-08 |
| Beryllium | 1.68E-07 | 6.80E-08 | 3.61E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-06 |
| Boron | 3.03E-06 | 3.67E-06 | 2.97E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.06E-06 |
| Cadmium | 6.86E-05 | 8.68E-05 | 4.06E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-04 |
| Chromium (Total) | 1.17E-09 | 9.50E-11 | 8.00E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-09 |
| Chromium VI | 2.49E-07 | 2.03E-08 | 1.71E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-07 |
| Cobalt | 3.78E-06 | 1.09E-06 | 8.07E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-05 |
| Lead | 5.97E-05 | 5.93E-05 | 3.59E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-04 |
| Mercury - Inorganic | 3.34E-05 | 3.64E-05 | 8.24E-06 | 4.17E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-04 |
| Methyl Mercury | 5.88E-06 | 3.10E-06 | 9.55E-07 | 1.77E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-05 |
| Nickel | 4.39E-06 | 1.76E-06 | 1.38E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-05 |
| Phosphorus | 2.10E-11 | 2.78E-11 | 2.54E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.17E-11 |
| Selenium | 7.49E-08 | 6.52E-09 | 6.72E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.58E-08 |
| Silver | 8.48E-07 | 5.29E-07 | 3.50E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-06 |
| Thallium | 3.72E-04 | 1.97E-05 | 8.40E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-03 |
| Tin | 8.36E-08 | 6.02E-08 | 3.64E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.30E-07 |
| Vanadium | 1.42E-07 | 7.02E-08 | 5.80E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-06 |
| Zinc | 2.29E-06 | 2.68E-06 | 2.27E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.39E-06 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 1.08E-11 | 5.90E-12 | -- | 8.88E-12 | 2.77E-12 | 4.28E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.94E-12 | 2.13E-12 | 1.16E-12 | -- | 2.54E-12 | 7.91E-13 | 1.22E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.74E-11 | 1.61E-11 | 8.80E-12 | -- | 1.32E-11 | 4.13E-12 | 6.38E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.40E-05 | 6.01E-06 | 3.29E-06 | -- | 3.46E-06 | 1.08E-06 | 1.67E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 8.65E-05 | 3.72E-05 | 2.04E-05 | -- | 4.59E-06 | 1.43E-06 | 2.21E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.30E-16 | 1.85E-16 | 1.01E-16 | -- | 1.52E-16 | 4.75E-17 | 7.34E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.63E-13 | 7.01E-14 | 3.84E-14 | -- | 3.18E-14 | 9.91E-15 | 1.53E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.34E-13 | 1.44E-13 | 7.87E-14 | -- | 5.92E-13 | 1.84E-13 | 2.85E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.85E-14 | 1.66E-14 | 9.07E-15 | -- | 6.82E-15 | 2.13E-15 | 3.29E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.93E-14 | 2.55E-14 | 1.40E-14 | -- | 2.10E-14 | 6.55E-15 | 1.01E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.22E-09 | 1.38E-09 | 7.58E-10 | -- | 5.70E-10 | 1.78E-10 | 2.75E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.96E-12 | 4.28E-12 | 2.35E-12 | -- | 1.41E-12 | 4.40E-13 | 6.80E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.99E-13 | 2.14E-13 | 1.17E-13 | -- | 8.83E-14 | 2.75E-14 | 4.25E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.81E-10 | 2.50E-10 | 1.37E-10 | -- | 1.34E-10 | 4.17E-11 | 6.44E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.05E-08 | 4.52E-09 | 2.47E-09 | -- | 1.86E-10 | 5.80E-11 | 8.97E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.23E-10 | 3.54E-10 | 1.94E-10 | -- | 1.60E-10 | 5.00E-11 | 7.73E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.13E-06 | 1.35E-06 | 7.38E-07 | -- | 5.55E-07 | 1.73E-07 | 2.67E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.15E-07 | 1.78E-07 | 9.76E-08 | -- | 2.20E-08 | 6.86E-09 | 1.06E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.41E-09 | 1.90E-09 | 1.04E-09 | -- | 7.81E-10 | 2.44E-10 | 3.77E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.94E-07 | 1.70E-07 | 9.29E-08 | -- | 2.10E-08 | 6.53E-09 | 1.01E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.44E-08 | 1.05E-08 | 5.75E-09 | -- | 4.32E-09 | 1.35E-09 | 2.08E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.04E-05 | 4.47E-06 | 2.45E-06 | -- | 2.58E-06 | 8.04E-07 | 1.24E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.92E-10 | 1.25E-10 | 6.87E-11 | -- | 2.07E-11 | 6.44E-12 | 9.96E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.23E-08 | 2.68E-08 | 1.47E-08 | -- | 9.92E-09 | 3.09E-09 | 4.78E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.89E-06 | 8.14E-07 | 4.46E-07 | -- | 3.35E-07 | 1.04E-07 | 1.62E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.53E-05 | 2.81E-05 | 1.54E-05 | -- | 6.94E-07 | 2.16E-07 | 3.34E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.21E-05 | 1.38E-05 | 7.56E-06 | -- | 2.84E-06 | 8.85E-07 | 1.37E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.58E-06 | 6.80E-07 | 3.72E-07 | -- | 5.60E-07 | 1.75E-07 | 2.70E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.84E-06 | 1.22E-06 | 6.68E-07 | -- | 1.76E-06 | 5.48E-07 | 8.48E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.19E-13 | 5.12E-14 | 2.80E-14 | -- | 2.11E-14 | 6.57E-15 | 1.02E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.02E-09 | 2.16E-09 | 1.18E-09 | -- | 1.78E-11 | 5.54E-12 | 8.56E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.75E-08 | 2.47E-08 | 1.35E-08 | -- | 2.55E-08 | 7.94E-09 | 1.23E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.45E-04 | 1.48E-04 | 8.12E-05 | -- | 6.10E-06 | 1.90E-06 | 2.94E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.96E-08 | 4.28E-08 | 2.34E-08 | -- | 1.76E-08 | 5.50E-09 | 8.50E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.17E-07 | 1.36E-07 | 7.46E-08 | -- | 5.61E-08 | 1.75E-08 | 2.70E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.15E-07 | 1.78E-07 | 9.76E-08 | -- | 1.47E-08 | 4.58E-09 | 7.08E-09 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.41E-12 | 6.61E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-12 | 1.46E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.73E-12 | 9.57E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.24E-04 | 7.53E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.01E-03 | 4.16E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-16 | 1.11E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-14 | 3.39E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-13 | 1.81E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-15 | 8.07E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-14 | 1.52E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.32E-09 | 9.71E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-12 | 2.26E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-13 | 1.29E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.41E-10 | 1.95E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-09 | 2.55E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-08 | 3.36E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.21E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.75E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.84E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.23E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.85E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.88E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.39E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.85E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.28E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-07 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 3.57E-11 | 8.20E-12 | -- | 6.45E-12 | 1.85E-12 | 2.86E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.64E-11 | 7.04E-12 | 1.62E-12 | -- | 1.85E-12 | 5.30E-13 | 8.17E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.24E-10 | 5.33E-11 | 1.22E-11 | -- | 9.63E-12 | 2.76E-12 | 4.26E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.63E-05 | 1.99E-05 | 4.57E-06 | -- | 2.52E-06 | 7.23E-07 | 1.11E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.87E-04 | 1.23E-04 | 2.83E-05 | -- | 3.34E-06 | 9.59E-07 | 1.48E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.42E-15 | 6.13E-16 | 1.41E-16 | -- | 1.11E-16 | 3.18E-17 | 4.90E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.41E-13 | 2.32E-13 | 5.34E-14 | -- | 2.31E-14 | 6.63E-15 | 1.02E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.11E-12 | 4.76E-13 | 1.09E-13 | -- | 4.30E-13 | 1.23E-13 | 1.90E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.28E-13 | 5.48E-14 | 1.26E-14 | -- | 4.96E-15 | 1.42E-15 | 2.19E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.96E-13 | 8.45E-14 | 1.94E-14 | -- | 1.53E-14 | 4.38E-15 | 6.76E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.07E-08 | 4.59E-09 | 1.05E-09 | -- | 4.14E-10 | 1.19E-10 | 1.83E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.30E-11 | 1.42E-11 | 3.26E-12 | -- | 1.03E-12 | 2.95E-13 | 4.54E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.65E-12 | 7.10E-13 | 1.63E-13 | -- | 6.42E-14 | 1.84E-14 | 2.84E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.92E-09 | 8.27E-10 | 1.90E-10 | -- | 9.72E-11 | 2.79E-11 | 4.30E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.48E-08 | 1.50E-08 | 3.44E-09 | -- | 1.35E-10 | 3.88E-11 | 5.99E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.73E-09 | 1.17E-09 | 2.69E-10 | -- | 1.17E-10 | 3.35E-11 | 5.16E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.04E-05 | 4.46E-06 | 1.03E-06 | -- | 4.03E-07 | 1.16E-07 | 1.79E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.37E-06 | 5.91E-07 | 1.36E-07 | -- | 1.60E-08 | 4.60E-09 | 7.09E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.46E-08 | 6.28E-09 | 1.44E-09 | -- | 5.68E-10 | 1.63E-10 | 2.51E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.62E-07 | 1.29E-07 | -- | 1.52E-08 | 4.37E-09 | 6.74E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.08E-08 | 3.48E-08 | 7.99E-09 | -- | 3.14E-09 | 9.02E-10 | 1.39E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.45E-05 | 1.48E-05 | 3.41E-06 | -- | 1.88E-06 | 5.38E-07 | 8.30E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.67E-10 | 4.16E-10 | 9.55E-11 | -- | 1.50E-11 | 4.32E-12 | 6.65E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.06E-07 | 8.87E-08 | 2.04E-08 | -- | 7.21E-09 | 2.07E-09 | 3.19E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.27E-06 | 2.70E-06 | 6.20E-07 | -- | 2.44E-07 | 7.00E-08 | 1.08E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.16E-04 | 9.30E-05 | 2.14E-05 | -- | 5.05E-07 | 1.45E-07 | 2.23E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.06E-04 | 4.57E-05 | 1.05E-05 | -- | 2.06E-06 | 5.93E-07 | 9.14E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.24E-06 | 2.25E-06 | 5.18E-07 | -- | 4.07E-07 | 1.17E-07 | 1.80E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.40E-06 | 4.04E-06 | 9.29E-07 | -- | 1.28E-06 | 3.67E-07 | 5.66E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.95E-13 | 1.70E-13 | 3.90E-14 | -- | 1.53E-14 | 4.40E-15 | 6.79E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.66E-08 | 7.14E-09 | 1.64E-09 | -- | 1.29E-11 | 3.71E-12 | 5.72E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.91E-07 | 8.19E-08 | 1.88E-08 | -- | 1.85E-08 | 5.32E-09 | 8.20E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.14E-03 | 4.91E-04 | 1.13E-04 | -- | 4.44E-06 | 1.27E-06 | 1.96E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.30E-07 | 1.42E-07 | 3.26E-08 | -- | 1.28E-08 | 3.68E-09 | 5.68E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.05E-06 | 4.51E-07 | 1.04E-07 | -- | 4.08E-08 | 1.17E-08 | 1.81E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.37E-06 | 5.91E-07 | 1.36E-07 | -- | 1.07E-08 | 3.07E-09 | 4.73E-09 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.54E-10 | 6.74E-10 | 6.06E-11 | 2.59E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-09 |
| Anthracene | 4.02E-11 | 5.98E-11 | 8.47E-14 | 2.23E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-10 |
| Fluorene | 4.54E-10 | 6.75E-10 | 8.05E-13 | 6.30E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.96E-06 | 1.18E-05 | 1.52E-06 | 1.85E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 6.16E-05 | 4.90E-05 | 1.01E-05 | 3.51E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.06E-14 | 7.44E-14 | 4.33E-13 | 3.34E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.61E-13 |
| Bromoform | 2.25E-11 | 3.35E-11 | 2.28E-11 | 3.07E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.97E-11 |
| Carbon Tetrachloride | 2.66E-11 | 3.88E-11 | 3.61E-10 | 3.41E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.30E-10 |
| Chloroform | 8.75E-12 | 1.29E-11 | 4.40E-11 | 3.22E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.60E-11 |
| Trichlorofluoromethane (FREON 11) | 6.98E-12 | 1.03E-11 | 5.48E-11 | 4.71E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.24E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.75E-08 | 2.61E-08 | 3.84E-08 | 2.11E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.90E-08 |
| 1,2,4-Trichlorobenzene | 1.58E-10 | 2.34E-10 | 8.77E-11 | 7.24E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.32E-10 |
| 1,2-Dichlorobenzene | 1.83E-11 | 2.67E-11 | 1.39E-10 | 1.72E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-10 |
| Hexachlorobenzene | 1.64E-09 | 2.42E-09 | 1.68E-09 | 6.06E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.85E-09 |
| Pentachlorobenzene | 3.50E-08 | 5.21E-08 | 2.20E-09 | 1.06E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-07 |
| Pentachlorophenol | 1.20E-07 | 4.48E-09 | 1.53E-07 | 6.69E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.75E-05 | 1.24E-05 | 1.07E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-05 |
| Arsenic | 2.09E-06 | 3.27E-07 | 3.77E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-06 |
| Barium | 2.60E-08 | 1.77E-08 | 7.52E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-08 |
| Beryllium | 3.07E-07 | 1.27E-07 | 6.73E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-06 |
| Boron | 5.62E-06 | 6.85E-06 | 5.55E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-05 |
| Cadmium | 1.27E-04 | 1.62E-04 | 7.57E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.53E-04 |
| Chromium (Total) | 2.12E-09 | 1.77E-10 | 1.49E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.81E-09 |
| Chromium VI | 4.52E-07 | 3.78E-08 | 3.19E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.21E-07 |
| Cobalt | 6.88E-06 | 2.04E-06 | 1.51E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-05 |
| Lead | 1.10E-04 | 1.11E-04 | 6.68E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-04 |
| Mercury - Inorganic | 5.00E-05 | 5.79E-05 | 1.31E-05 | 4.59E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.92E-04 |
| Methyl Mercury | 8.56E-06 | 5.79E-06 | 1.78E-06 | 1.94E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-05 |
| Nickel | 8.01E-06 | 3.29E-06 | 2.58E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-05 |
| Phosphorus | 3.92E-11 | 5.19E-11 | 4.74E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-11 |
| Selenium | 1.36E-07 | 1.22E-08 | 1.25E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-07 |
| Silver | 1.56E-06 | 9.88E-07 | 6.54E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-06 |
| Thallium | 6.74E-04 | 3.68E-05 | 1.57E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-03 |
| Tin | 1.54E-07 | 1.12E-07 | 6.79E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.99E-07 |
| Vanadium | 2.60E-07 | 1.31E-07 | 1.08E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-06 |
| Zinc | 4.25E-06 | 5.01E-06 | 4.24E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-05 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 1.34E-11 | 7.36E-12 | -- | 1.11E-11 | 3.45E-12 | 5.34E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.17E-12 | 2.65E-12 | 1.45E-12 | -- | 3.17E-12 | 9.87E-13 | 1.53E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.66E-11 | 2.00E-11 | 1.10E-11 | -- | 1.65E-11 | 5.15E-12 | 7.96E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.74E-05 | 7.49E-06 | 4.10E-06 | -- | 4.32E-06 | 1.35E-06 | 2.08E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.20E-04 | 5.15E-05 | 2.82E-05 | -- | 6.36E-06 | 1.98E-06 | 3.07E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.36E-16 | 2.31E-16 | 1.26E-16 | -- | 1.90E-16 | 5.92E-17 | 9.15E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.03E-13 | 8.75E-14 | 4.79E-14 | -- | 3.96E-14 | 1.24E-14 | 1.91E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.17E-13 | 1.79E-13 | 9.81E-14 | -- | 7.38E-13 | 2.30E-13 | 3.56E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.80E-14 | 2.06E-14 | 1.13E-14 | -- | 8.50E-15 | 2.65E-15 | 4.10E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.40E-14 | 3.18E-14 | 1.74E-14 | -- | 2.62E-14 | 8.16E-15 | 1.26E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.01E-09 | 1.73E-09 | 9.45E-10 | -- | 7.11E-10 | 2.22E-10 | 3.43E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.24E-11 | 5.34E-12 | 2.93E-12 | -- | 1.76E-12 | 5.49E-13 | 8.48E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.22E-13 | 2.67E-13 | 1.46E-13 | -- | 1.10E-13 | 3.43E-14 | 5.31E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.24E-10 | 3.11E-10 | 1.71E-10 | -- | 1.67E-10 | 5.20E-11 | 8.03E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.31E-08 | 5.63E-09 | 3.09E-09 | -- | 2.32E-10 | 7.23E-11 | 1.12E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.03E-09 | 4.41E-10 | 2.42E-10 | -- | 2.00E-10 | 6.23E-11 | 9.64E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.34E-06 | 1.87E-06 | 1.02E-06 | -- | 7.69E-07 | 2.40E-07 | 3.70E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.74E-07 | 2.47E-07 | 1.35E-07 | -- | 3.05E-08 | 9.51E-09 | 1.47E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.11E-09 | 2.63E-09 | 1.44E-09 | -- | 1.08E-09 | 3.37E-10 | 5.22E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 5.47E-07 | 2.35E-07 | 1.29E-07 | -- | 2.90E-08 | 9.05E-09 | 1.40E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.38E-08 | 1.45E-08 | 7.96E-09 | -- | 5.99E-09 | 1.87E-09 | 2.89E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.44E-05 | 6.20E-06 | 3.40E-06 | -- | 3.57E-06 | 1.11E-06 | 1.72E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.04E-10 | 1.74E-10 | 9.52E-11 | -- | 2.86E-11 | 8.93E-12 | 1.38E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.63E-08 | 3.71E-08 | 2.03E-08 | -- | 1.37E-08 | 4.29E-09 | 6.63E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.62E-06 | 1.13E-06 | 6.18E-07 | -- | 4.64E-07 | 1.45E-07 | 2.24E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 9.05E-05 | 3.89E-05 | 2.13E-05 | -- | 9.62E-07 | 3.00E-07 | 4.63E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.36E-05 | 1.44E-05 | 7.90E-06 | -- | 2.97E-06 | 9.26E-07 | 1.43E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.19E-06 | 9.42E-07 | 5.16E-07 | -- | 7.76E-07 | 2.42E-07 | 3.74E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.93E-06 | 1.69E-06 | 9.26E-07 | -- | 2.44E-06 | 7.60E-07 | 1.17E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.65E-13 | 7.09E-14 | 3.89E-14 | -- | 2.92E-14 | 9.11E-15 | 1.41E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.95E-09 | 2.99E-09 | 1.64E-09 | -- | 2.46E-11 | 7.67E-12 | 1.19E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.97E-08 | 3.43E-08 | 1.88E-08 | -- | 3.53E-08 | 1.10E-08 | 1.70E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.78E-04 | 2.05E-04 | 1.12E-04 | -- | 8.46E-06 | 2.64E-06 | 4.08E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.38E-07 | 5.93E-08 | 3.25E-08 | -- | 2.44E-08 | 7.62E-09 | 1.18E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.39E-07 | 1.89E-07 | 1.03E-07 | -- | 7.77E-08 | 2.42E-08 | 3.75E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.75E-07 | 2.47E-07 | 1.35E-07 | -- | 2.03E-08 | 6.34E-09 | 9.81E-09 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-11 | 9.64E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-12 | 2.04E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-11 | 1.32E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-02 | 1.01E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-01 | 1.25E-01 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.44E-14 | 4.56E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-10 | 1.23E-10 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-10 | 1.11E-10 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.46E-13 | 6.41E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-11 | 3.38E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-08 | 4.41E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.52E-10 | 4.76E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.03E-12 | 9.26E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.88E-08 | 4.03E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.88E-08 | 1.11E-07 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-08 | 9.19E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.61E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.62E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.70E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.04E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.20E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.12E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.04E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.27E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.11E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.74E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.71E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.93E-07 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 4.45E-11 | 1.02E-11 | -- | 8.05E-12 | 2.31E-12 | 3.56E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.04E-11 | 8.78E-12 | 2.02E-12 | -- | 2.30E-12 | 6.61E-13 | 1.02E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.54E-10 | 6.64E-11 | 1.53E-11 | -- | 1.20E-11 | 3.45E-12 | 5.31E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.77E-05 | 2.48E-05 | 5.70E-06 | -- | 3.14E-06 | 9.02E-07 | 1.39E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.97E-04 | 1.71E-04 | 3.92E-05 | -- | 4.63E-06 | 1.33E-06 | 2.05E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.78E-15 | 7.64E-16 | 1.76E-16 | -- | 1.38E-16 | 3.96E-17 | 6.11E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.74E-13 | 2.90E-13 | 6.66E-14 | -- | 2.88E-14 | 8.27E-15 | 1.28E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.38E-12 | 5.94E-13 | 1.36E-13 | -- | 5.36E-13 | 1.54E-13 | 2.37E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.59E-13 | 6.84E-14 | 1.57E-14 | -- | 6.18E-15 | 1.77E-15 | 2.74E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.45E-13 | 1.05E-13 | 2.42E-14 | -- | 1.90E-14 | 5.47E-15 | 8.43E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.33E-08 | 5.72E-09 | 1.31E-09 | -- | 5.17E-10 | 1.48E-10 | 2.29E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.12E-11 | 1.77E-11 | 4.07E-12 | -- | 1.28E-12 | 3.67E-13 | 5.66E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.06E-12 | 8.86E-13 | 2.03E-13 | -- | 8.00E-14 | 2.30E-14 | 3.54E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.40E-09 | 1.03E-09 | 2.37E-10 | -- | 1.21E-10 | 3.48E-11 | 5.37E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.34E-08 | 1.87E-08 | 4.29E-09 | -- | 1.69E-10 | 4.84E-11 | 7.47E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.40E-09 | 1.46E-09 | 3.36E-10 | -- | 1.45E-10 | 4.18E-11 | 6.44E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.44E-05 | 6.18E-06 | 1.42E-06 | -- | 5.59E-07 | 1.60E-07 | 2.47E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.90E-06 | 8.18E-07 | 1.88E-07 | -- | 2.22E-08 | 6.37E-09 | 9.82E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.03E-08 | 8.71E-09 | 2.00E-09 | -- | 7.87E-10 | 2.26E-10 | 3.48E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.81E-06 | 7.79E-07 | 1.79E-07 | -- | 2.11E-08 | 6.06E-09 | 9.34E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.12E-07 | 4.82E-08 | 1.11E-08 | -- | 4.35E-09 | 1.25E-09 | 1.93E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.78E-05 | 2.05E-05 | 4.72E-06 | -- | 2.60E-06 | 7.46E-07 | 1.15E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.34E-09 | 5.76E-10 | 1.32E-10 | -- | 2.08E-11 | 5.98E-12 | 9.22E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.86E-07 | 1.23E-07 | 2.82E-08 | -- | 1.00E-08 | 2.87E-09 | 4.43E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.69E-06 | 3.74E-06 | 8.58E-07 | -- | 3.38E-07 | 9.69E-08 | 1.49E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.00E-04 | 1.29E-04 | 2.96E-05 | -- | 6.99E-07 | 2.01E-07 | 3.09E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.11E-04 | 4.78E-05 | 1.10E-05 | -- | 2.16E-06 | 6.20E-07 | 9.56E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 7.26E-06 | 3.12E-06 | 7.17E-07 | -- | 5.64E-07 | 1.62E-07 | 2.50E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.30E-05 | 5.60E-06 | 1.29E-06 | -- | 1.77E-06 | 5.09E-07 | 7.84E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.47E-13 | 2.35E-13 | 5.40E-14 | -- | 2.12E-14 | 6.10E-15 | 9.40E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.30E-08 | 9.90E-09 | 2.27E-09 | -- | 1.79E-11 | 5.14E-12 | 7.92E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.64E-07 | 1.14E-07 | 2.61E-08 | -- | 2.56E-08 | 7.37E-09 | 1.14E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.58E-03 | 6.80E-04 | 1.56E-04 | -- | 6.15E-06 | 1.77E-06 | 2.72E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.57E-07 | 1.97E-07 | 4.52E-08 | -- | 1.78E-08 | 5.10E-09 | 7.86E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.45E-06 | 6.25E-07 | 1.44E-07 | -- | 5.65E-08 | 1.62E-08 | 2.50E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.90E-06 | 8.18E-07 | 1.88E-07 | -- | 1.48E-08 | 4.25E-09 | 6.55E-09 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.02E-09 | 1.86E-09 | 1.23E-10 | 9.13E-10 | -- | -- | -- | -- | 3.93E-12 | 2.08E-11 | 5.99E-13 | 1.16E-12 | 1.13E-12 | -- | -- | 4.12E-09 |
| Anthracene | 9.04E-11 | 1.65E-10 | 1.72E-13 | 7.11E-15 | -- | -- | -- | -- | 5.84E-13 | 2.84E-12 | 9.79E-14 | 2.02E-13 | 1.96E-13 | -- | -- | 2.95E-10 |
| Fluorene | 1.02E-09 | 1.86E-09 | 1.64E-12 | 2.01E-13 | -- | -- | -- | -- | 5.26E-12 | 2.66E-11 | 8.22E-13 | 1.63E-12 | 1.59E-12 | -- | -- | 3.18E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.79E-05 | 3.25E-05 | 3.10E-06 | 5.88E-08 | -- | -- | -- | -- | 5.36E-05 | 1.71E-04 | 1.23E-05 | 2.94E-07 | 2.86E-07 | -- | -- | 3.85E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.50E-04 | 1.50E-04 | 2.29E-05 | 1.12E-05 | -- | -- | -- | -- | 6.17E-04 | 2.76E-03 | 7.66E-05 | 1.67E-06 | 1.63E-06 | -- | -- | 4.41E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.14E-13 | 2.05E-13 | 8.82E-13 | 1.06E-15 | -- | -- | -- | -- | 3.19E-11 | 1.08E-10 | 1.43E-12 | 1.65E-14 | 1.60E-14 | -- | -- | 1.43E-10 |
| Bromoform | 5.06E-11 | 9.25E-11 | 4.64E-11 | 9.77E-15 | -- | -- | -- | -- | 1.20E-07 | 4.06E-07 | 5.36E-09 | 6.19E-11 | 6.01E-11 | -- | -- | 5.31E-07 |
| Carbon Tetrachloride | 5.98E-11 | 1.07E-10 | 7.35E-10 | 1.09E-12 | -- | -- | -- | -- | 3.94E-08 | 1.33E-07 | 1.76E-09 | 2.03E-11 | 1.97E-11 | -- | -- | 1.75E-07 |
| Chloroform | 1.97E-11 | 3.57E-11 | 8.96E-11 | 1.03E-13 | -- | -- | -- | -- | 1.23E-09 | 4.15E-09 | 5.49E-11 | 6.34E-13 | 6.16E-13 | -- | -- | 5.58E-09 |
| Trichlorofluoromethane (FREON 11) | 1.57E-11 | 2.83E-11 | 1.11E-10 | 1.50E-13 | -- | -- | -- | -- | 2.43E-08 | 8.22E-08 | 1.09E-09 | 1.25E-11 | 1.22E-11 | -- | -- | 1.08E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.94E-08 | 7.20E-08 | 7.81E-08 | 6.72E-12 | -- | -- | -- | -- | 1.00E-07 | 3.58E-07 | 6.57E-09 | 1.27E-10 | 1.24E-10 | -- | -- | 6.76E-07 |
| 1,2,4-Trichlorobenzene | 3.54E-10 | 6.47E-10 | 1.79E-10 | 2.31E-13 | -- | -- | -- | -- | 8.05E-09 | 2.74E-08 | 3.67E-10 | 4.33E-12 | 4.21E-12 | -- | -- | 3.70E-08 |
| 1,2-Dichlorobenzene | 4.10E-11 | 7.38E-11 | 2.83E-10 | 5.49E-13 | -- | -- | -- | -- | 7.03E-10 | 2.39E-09 | 3.18E-11 | 3.72E-13 | 3.62E-13 | -- | -- | 3.53E-09 |
| Hexachlorobenzene | 3.68E-09 | 6.68E-09 | 3.42E-09 | 1.93E-11 | -- | -- | -- | -- | 4.20E-08 | 1.45E-07 | 2.19E-09 | 2.98E-11 | 2.90E-11 | -- | -- | 2.07E-07 |
| Pentachlorobenzene | 7.87E-08 | 1.44E-07 | 4.47E-09 | 3.36E-11 | -- | -- | -- | -- | 9.57E-08 | 3.76E-07 | 1.68E-08 | 3.70E-10 | 3.60E-10 | -- | -- | 7.83E-07 |
| Pentachlorophenol | 2.45E-07 | 1.24E-08 | 3.12E-07 | 2.13E-07 | -- | -- | -- | -- | 1.77E-08 | 9.05E-08 | 4.20E-10 | 8.11E-14 | 7.89E-14 | -- | -- | 8.96E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 4.34E-05 | 3.82E-05 | 2.42E-06 | -- | -- | -- | -- | -- | 4.09E-06 | 9.61E-06 | 2.26E-07 | 2.86E-09 | 2.78E-09 | -- | -- | 1.21E-04 |
| Arsenic | 5.16E-06 | 1.00E-06 | 8.52E-08 | -- | -- | -- | -- | -- | 1.02E-06 | 7.09E-07 | 4.51E-08 | 6.22E-10 | 6.05E-10 | -- | -- | 1.10E-05 |
| Barium | 6.45E-08 | 5.42E-08 | 1.70E-09 | -- | -- | -- | -- | -- | 8.17E-10 | 4.45E-08 | 4.23E-11 | 5.41E-13 | 5.26E-13 | -- | -- | 1.98E-07 |
| Beryllium | 7.61E-07 | 3.89E-07 | 1.52E-08 | -- | -- | -- | -- | -- | 1.06E-07 | 1.85E-09 | 1.30E-08 | 2.85E-10 | 2.77E-10 | -- | -- | 4.09E-06 |
| Boron | 1.40E-05 | 2.10E-05 | 1.25E-06 | -- | -- | -- | -- | -- | 3.96E-07 | 2.10E-06 | 2.30E-08 | 2.69E-10 | 2.61E-10 | -- | -- | 3.90E-05 |
| Cadmium | 3.18E-04 | 4.97E-04 | 1.71E-05 | -- | -- | -- | -- | -- | 1.85E-06 | 2.40E-06 | 1.53E-07 | 1.68E-06 | 6.71E-08 | -- | -- | 9.15E-04 |
| Chromium (Total) | 5.24E-09 | 5.44E-10 | 3.38E-11 | -- | -- | -- | -- | -- | 2.71E-09 | 1.73E-08 | 9.96E-11 | 1.22E-12 | 1.19E-12 | -- | -- | 2.80E-08 |
| Chromium VI | 1.12E-06 | 1.16E-07 | 7.20E-09 | -- | -- | -- | -- | -- | 5.79E-07 | 3.69E-06 | 2.12E-08 | 2.60E-10 | 2.53E-10 | -- | -- | 5.99E-06 |
| Cobalt | 1.71E-05 | 6.25E-06 | 3.41E-07 | -- | -- | -- | -- | -- | 3.14E-05 | 1.50E-04 | 1.75E-06 | 2.90E-08 | 2.82E-08 | -- | -- | 2.21E-04 |
| Lead | 2.75E-04 | 3.39E-04 | 1.51E-05 | -- | -- | -- | -- | -- | 7.01E-06 | 1.22E-04 | 7.59E-07 | 1.51E-08 | 1.47E-08 | -- | -- | 1.22E-03 |
| Mercury - Inorganic | 9.71E-05 | 1.34E-04 | 2.24E-05 | 1.46E-05 | -- | -- | -- | -- | 1.88E-05 | 1.29E-04 | 2.18E-08 | 6.07E-07 | 1.03E-06 | -- | -- | 5.92E-04 |
| Methyl Mercury | 1.98E-05 | 1.77E-05 | 4.02E-06 | 6.19E-06 | -- | -- | -- | -- | 3.97E-07 | 3.56E-06 | 2.52E-10 | 6.40E-09 | 1.09E-08 | -- | -- | 6.38E-05 |
| Nickel | 1.99E-05 | 1.01E-05 | 5.84E-07 | -- | -- | -- | -- | -- | 1.13E-05 | 4.21E-05 | 7.39E-07 | 1.29E-08 | 1.25E-08 | -- | -- | 1.08E-04 |
| Phosphorus | 9.77E-11 | 1.59E-10 | 1.07E-11 | -- | -- | -- | -- | -- | 1.17E-10 | 6.39E-10 | 9.71E-12 | 1.54E-13 | 1.49E-13 | -- | -- | 1.03E-09 |
| Selenium | 3.37E-07 | 3.73E-08 | 2.84E-09 | -- | -- | -- | -- | -- | 6.76E-08 | 4.18E-06 | 1.14E-07 | 6.12E-09 | 1.04E-08 | -- | -- | 4.79E-06 |
| Silver | 3.87E-06 | 3.03E-06 | 1.48E-07 | -- | -- | -- | -- | -- | 8.11E-07 | 1.30E-04 | 2.92E-08 | 2.42E-10 | 2.35E-10 | -- | -- | 1.39E-04 |
| Thallium | 1.67E-03 | 1.13E-04 | 3.54E-06 | -- | -- | -- | -- | -- | 7.64E-03 | 8.32E-03 | 5.26E-04 | 9.92E-06 | 9.64E-06 | -- | -- | 2.07E-02 |
| Tin | 3.82E-07 | 3.44E-07 | 1.54E-08 | -- | -- | -- | -- | -- | 2.96E-06 | 1.30E-05 | 2.98E-07 | 5.99E-09 | 5.82E-09 | -- | -- | 1.78E-05 |
| Vanadium | 6.45E-07 | 4.01E-07 | 2.44E-08 | -- | -- | -- | -- | -- | 1.99E-07 | 8.04E-07 | 2.60E-08 | 5.80E-10 | 5.63E-10 | -- | -- | 4.42E-06 |
| Zinc | 1.06E-05 | 1.54E-05 | 9.59E-06 | -- | -- | -- | -- | -- | 4.71E-08 | 4.03E-07 | 3.51E-09 | 5.25E-09 | 8.93E-09 | -- | -- | 3.89E-05 |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 140,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | 2.80E-12 | 1.93E-12 | -- | 5.06E-13 | 1.45E-13 | 2.24E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.28E-12 | 5.52E-13 | 3.81E-13 | -- | 1.45E-13 | 4.16E-14 | 6.41E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.71E-12 | 4.17E-12 | 2.88E-12 | -- | 7.54E-13 | 2.17E-13 | 3.34E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.65E-06 | 1.57E-06 | 1.08E-06 | -- | 1.98E-07 | 5.70E-08 | 8.78E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.80E-05 | 1.63E-05 | 1.13E-05 | -- | 4.43E-07 | 1.27E-07 | 1.96E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.12E-16 | 4.80E-17 | 3.31E-17 | -- | 8.68E-18 | 2.49E-18 | 3.84E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.24E-14 | 1.82E-14 | 1.26E-14 | -- | 1.81E-15 | 5.20E-16 | 8.01E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 8.68E-14 | 3.73E-14 | 2.57E-14 | -- | 3.37E-14 | 9.68E-15 | 1.49E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.00E-14 | 4.30E-15 | 2.96E-15 | -- | 3.88E-16 | 1.12E-16 | 1.72E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.54E-14 | 6.62E-15 | 4.56E-15 | -- | 1.20E-15 | 3.44E-16 | 5.30E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.36E-10 | 3.59E-10 | 2.48E-10 | -- | 3.25E-11 | 9.33E-12 | 1.44E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.59E-12 | 1.11E-12 | 7.66E-13 | -- | 8.04E-14 | 2.31E-14 | 3.56E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.29E-13 | 5.56E-14 | 3.84E-14 | -- | 5.03E-15 | 1.44E-15 | 2.23E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.51E-10 | 6.48E-11 | 4.47E-11 | -- | 7.62E-12 | 2.19E-12 | 3.37E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.73E-09 | 1.17E-09 | 8.09E-10 | -- | 1.06E-11 | 3.04E-12 | 4.69E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.14E-10 | 9.19E-11 | 6.34E-11 | -- | 9.14E-12 | 2.62E-12 | 4.05E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.37E-06 | 5.89E-07 | 4.06E-07 | -- | 5.32E-08 | 1.53E-08 | 2.36E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.81E-07 | 7.79E-08 | 5.37E-08 | -- | 2.11E-09 | 6.07E-10 | 9.35E-10 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.93E-09 | 8.29E-10 | 5.72E-10 | -- | 7.50E-11 | 2.15E-11 | 3.32E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.73E-07 | 7.43E-08 | 5.12E-08 | -- | 2.01E-09 | 5.78E-10 | 8.91E-10 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.07E-08 | 4.58E-09 | 3.16E-09 | -- | 4.14E-10 | 1.19E-10 | 1.83E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.55E-06 | 1.96E-06 | 1.35E-06 | -- | 2.48E-07 | 7.11E-08 | 1.10E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.28E-10 | 5.49E-11 | 3.78E-11 | -- | 1.98E-12 | 5.69E-13 | 8.78E-13 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.72E-08 | 1.17E-08 | 8.07E-09 | -- | 9.52E-10 | 2.73E-10 | 4.21E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.28E-07 | 3.56E-07 | 2.45E-07 | -- | 3.22E-08 | 9.24E-09 | 1.42E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.86E-05 | 1.23E-05 | 8.48E-06 | -- | 6.67E-08 | 1.91E-08 | 2.95E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.24E-05 | 5.32E-06 | 3.67E-06 | -- | 2.41E-07 | 6.91E-08 | 1.06E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.93E-07 | 2.98E-07 | 2.05E-07 | -- | 5.38E-08 | 1.55E-08 | 2.38E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.24E-06 | 5.34E-07 | 3.68E-07 | -- | 1.69E-07 | 4.85E-08 | 7.47E-08 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.20E-14 | 2.24E-14 | 1.54E-14 | -- | 2.02E-15 | 5.81E-16 | 8.95E-16 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.19E-09 | 9.42E-10 | 6.50E-10 | -- | 1.70E-12 | 4.89E-13 | 7.54E-13 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.51E-08 | 1.08E-08 | 7.45E-09 | -- | 2.44E-09 | 7.01E-10 | 1.08E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.51E-04 | 6.48E-05 | 4.47E-05 | -- | 5.86E-07 | 1.68E-07 | 2.59E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.36E-08 | 1.87E-08 | 1.29E-08 | -- | 1.69E-09 | 4.86E-10 | 7.50E-10 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.39E-07 | 5.97E-08 | 4.11E-08 | -- | 5.39E-09 | 1.55E-09 | 2.39E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.81E-07 | 7.80E-08 | 5.38E-08 | -- | 1.41E-09 | 4.05E-10 | 6.24E-10 | -- |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.63E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.60E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-10 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.46E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.29E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.86E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.95E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.33E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.79E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.49E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-07 |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | -- | -- | -- | 9.40E-14 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.39E-13 | -- | -- | -- | 2.69E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.80E-12 | -- | -- | -- | 1.40E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.77E-07 | -- | -- | -- | 3.68E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.84E-06 | -- | -- | -- | 4.48E-08 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.07E-17 | -- | -- | -- | 1.61E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.87E-15 | -- | -- | -- | 3.36E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.61E-14 | -- | -- | -- | 6.26E-15 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.86E-15 | -- | -- | -- | 7.22E-17 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.86E-15 | -- | -- | -- | 2.22E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.55E-10 | -- | -- | -- | 6.03E-12 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.81E-13 | -- | -- | -- | 1.49E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.40E-14 | -- | -- | -- | 9.34E-16 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.80E-11 | -- | -- | -- | 1.41E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.07E-10 | -- | -- | -- | 1.97E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.97E-11 | -- | -- | -- | 1.70E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.39E-07 | -- | -- | -- | 5.38E-09 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.83E-08 | -- | -- | -- | 2.14E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.95E-10 | -- | -- | -- | 7.58E-12 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.75E-08 | -- | -- | -- | 2.04E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.08E-09 | -- | -- | -- | 4.19E-11 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.60E-07 | -- | -- | -- | 2.50E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.29E-11 | -- | -- | -- | 2.01E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.75E-09 | -- | -- | -- | 9.63E-11 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.37E-08 | -- | -- | -- | 3.25E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.89E-06 | -- | -- | -- | 6.74E-09 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.73E-06 | -- | -- | -- | 3.37E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 7.00E-08 | -- | -- | -- | 5.44E-09 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.26E-07 | -- | -- | -- | 1.71E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.26E-15 | -- | -- | -- | 2.05E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.22E-10 | -- | -- | -- | 1.72E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.54E-09 | -- | -- | -- | 2.47E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.53E-05 | -- | -- | -- | 5.93E-08 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.41E-09 | -- | -- | -- | 1.71E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.40E-08 | -- | -- | -- | 5.45E-10 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.83E-08 | -- | -- | -- | 1.43E-10 | -- | -- | -- |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.14E-07 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.89E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.21E-15 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.95E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.94E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.09E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.14E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.70E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.55E-08 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.47E-15 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-08 |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | -- | -- | -- | 1.98E-13 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.01E-13 | -- | -- | -- | 5.65E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.79E-12 | -- | -- | -- | 2.95E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.42E-06 | -- | -- | -- | 7.72E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.09E-05 | -- | -- | -- | 1.27E-07 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.36E-17 | -- | -- | -- | 3.39E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.65E-14 | -- | -- | -- | 7.07E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.39E-14 | -- | -- | -- | 1.32E-14 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.90E-15 | -- | -- | -- | 1.52E-16 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.01E-15 | -- | -- | -- | 4.67E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.26E-10 | -- | -- | -- | 1.27E-11 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.01E-12 | -- | -- | -- | 3.14E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 5.06E-14 | -- | -- | -- | 1.96E-15 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.89E-11 | -- | -- | -- | 2.97E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.07E-09 | -- | -- | -- | 4.14E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.35E-11 | -- | -- | -- | 3.57E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.95E-07 | -- | -- | -- | 1.53E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.22E-08 | -- | -- | -- | 6.09E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.56E-10 | -- | -- | -- | 2.16E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.97E-08 | -- | -- | -- | 5.80E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.07E-09 | -- | -- | -- | 1.19E-10 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.31E-06 | -- | -- | -- | 7.13E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.68E-11 | -- | -- | -- | 5.72E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.85E-09 | -- | -- | -- | 2.74E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.39E-07 | -- | -- | -- | 9.27E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 8.24E-06 | -- | -- | -- | 1.92E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.02E-06 | -- | -- | -- | 7.81E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.99E-07 | -- | -- | -- | 1.55E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.58E-07 | -- | -- | -- | 4.86E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.50E-14 | -- | -- | -- | 5.83E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.32E-10 | -- | -- | -- | 4.91E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.25E-09 | -- | -- | -- | 7.04E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.34E-05 | -- | -- | -- | 1.69E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.26E-08 | -- | -- | -- | 4.88E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.00E-08 | -- | -- | -- | 1.55E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.23E-08 | -- | -- | -- | 4.06E-10 | -- | -- | -- |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.74E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.58E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.25E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.19E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.71E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.28E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.03E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.12E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.25E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.32E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.95E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.15E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.27E-08 |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | 1.03E-11 | -- | -- | -- | -- | -- | 7.45E-12 | -- | 1.77E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | 7.73E-13 | -- | -- | -- | -- | -- | 9.15E-13 | -- | 1.69E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | 4.44E-11 | -- | -- | -- | -- | -- | 3.36E-11 | -- | 7.80E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | 9.45E-08 | -- | -- | -- | -- | -- | 1.82E-06 | -- | 1.91E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | 6.07E-07 | -- | -- | -- | -- | -- | 1.88E-07 | -- | 7.95E-07 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | 1.30E-11 | -- | -- | -- | -- | -- | -- | -- | 1.30E-11 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | 5.65E-08 | -- | -- | -- | -- | -- | 1.14E-09 | -- | 5.77E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | 1.12E-08 | -- | -- | -- | -- | -- | -- | -- | 1.12E-08 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | 8.54E-10 | -- | -- | -- | -- | -- | -- | -- | 8.54E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | 9.78E-09 | -- | -- | -- | -- | -- | -- | -- | 9.78E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 4.90E-09 | -- | -- | -- | -- | -- | 4.31E-09 | -- | 9.21E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 6.25E-10 | -- | -- | -- | -- | -- | 2.23E-10 | -- | 8.48E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 9.37E-11 | -- | -- | -- | -- | -- | 3.20E-11 | -- | 1.26E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 2.46E-09 | -- | -- | -- | -- | -- | 1.06E-08 | -- | 1.31E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 3.13E-09 | -- | -- | -- | -- | -- | 2.03E-10 | -- | 3.33E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | 1.69E-07 | -- | -- | -- | -- | -- | 1.34E-07 | -- | 3.03E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | 1.87E-05 | -- | -- | -- | -- | -- | 3.82E-07 | -- | 1.91E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | 3.83E-06 | -- | -- | -- | -- | -- | 7.82E-08 | -- | 3.90E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 2.88E-08 | -- | -- | -- | -- | -- | 5.89E-10 | -- | 2.94E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 2.19E-07 | -- | -- | -- | -- | -- | 4.48E-09 | -- | 2.24E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | 2.10E-06 | -- | -- | -- | -- | -- | 4.28E-08 | -- | 2.14E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | 3.75E-05 | -- | -- | -- | -- | -- | 7.66E-07 | -- | 3.83E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | 4.10E-09 | -- | -- | -- | -- | -- | 8.38E-11 | -- | 4.19E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | 8.75E-07 | -- | -- | -- | -- | -- | 3.58E-08 | -- | 9.11E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | 1.13E-05 | -- | -- | -- | -- | -- | 9.22E-08 | -- | 1.14E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | 3.37E-05 | -- | -- | -- | -- | -- | 2.36E-07 | -- | 3.40E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | 2.05E-06 | -- | -- | -- | -- | -- | 4.18E-08 | -- | 2.09E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | 1.30E-08 | -- | -- | -- | -- | -- | 2.65E-10 | -- | 1.32E-08 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | 1.18E-05 | -- | -- | -- | -- | -- | 4.81E-08 | -- | 1.18E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | 8.82E-12 | -- | -- | -- | -- | -- | -- | -- | 8.82E-12 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | 2.63E-07 | -- | -- | -- | -- | -- | 5.37E-09 | -- | 2.68E-07 |
| Silver | -- | -- | -- | -- | -- | -- | -- | 1.83E-06 | -- | -- | -- | -- | -- | 2.25E-08 | -- | 1.86E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | 1.31E-03 | -- | -- | -- | -- | -- | 2.68E-05 | -- | 1.34E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 1.22E-07 | -- | -- | -- | -- | -- | 2.49E-09 | -- | 1.24E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | 1.55E-07 | -- | -- | -- | -- | -- | 3.16E-09 | -- | 1.58E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | 1.80E-06 | -- | -- | -- | -- | -- | 2.21E-08 | -- | 1.82E-06 |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-12 | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 140,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | 7.29E-13 | 1.00E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-12 |
| Anthracene | -- | -- | -- | -- | 1.03E-13 | 3.00E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.03E-13 |
| Fluorene | -- | -- | -- | -- | 9.50E-13 | 8.63E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.58E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | 6.73E-06 | 5.93E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.94E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | 1.87E-04 | 4.63E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.81E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | 2.75E-13 | 5.03E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.31E-12 |
| Bromoform | -- | -- | -- | -- | 1.05E-09 | 1.62E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | 3.42E-10 | 8.65E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-09 |
| Chloroform | -- | -- | -- | -- | 9.93E-12 | 1.05E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | 2.12E-10 | 3.79E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.00E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | 6.43E-09 | 3.79E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-07 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | 9.46E-11 | 9.64E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.74E-09 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | 7.44E-12 | 2.76E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | 1.21E-09 | 6.02E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.03E-07 |
| Pentachlorobenzene | -- | -- | -- | -- | 1.38E-08 | 5.66E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.80E-07 |
| Pentachlorophenol | -- | -- | -- | -- | 4.20E-09 | 2.33E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-05 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | 1.44E-06 | 9.14E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.15E-04 |
| Arsenic | -- | -- | -- | -- | 4.58E-07 | 4.68E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-05 |
| Barium | -- | -- | -- | -- | 3.07E-10 | 7.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09E-08 |
| Beryllium | -- | -- | -- | -- | 3.25E-08 | 5.36E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-06 |
| Boron | -- | -- | -- | -- | 1.37E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-07 |
| Cadmium | -- | -- | -- | -- | 5.22E-07 | 1.10E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-02 |
| Chromium (Total) | -- | -- | -- | -- | 1.30E-09 | 2.01E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-07 |
| Chromium VI | -- | -- | -- | -- | 2.77E-07 | 7.91E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.19E-06 |
| Cobalt | -- | -- | -- | -- | 1.36E-05 | 2.76E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-04 |
| Lead | -- | -- | -- | -- | 1.96E-06 | 8.64E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.66E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | 3.57E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.57E-06 |
| Methyl Mercury | -- | -- | -- | -- | 1.43E-07 | 2.02E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-03 |
| Nickel | -- | -- | -- | -- | 4.53E-06 | 4.49E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.53E-04 |
| Phosphorus | -- | -- | -- | -- | 3.99E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.99E-11 |
| Selenium | -- | -- | -- | -- | 3.38E-08 | 1.09E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-05 |
| Silver | -- | -- | -- | -- | 3.50E-07 | 3.98E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.01E-05 |
| Thallium | -- | -- | -- | -- | 3.20E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.20E-03 |
| Tin | -- | -- | -- | -- | 9.48E-07 | 8.93E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.03E-05 |
| Vanadium | -- | -- | -- | -- | 6.15E-08 | 6.05E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.11E-06 |
| Zinc | -- | -- | -- | -- | 1.48E-08 | 4.10E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-04 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.94E-13 | 2.98E-13 | 4.16E-14 | -- | 4.01E-13 | 9.72E-14 | 1.55E-13 | -- | 2.26E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.85E-18 | 7.94E-19 | 1.11E-19 | -- | 5.87E-19 | 1.42E-19 | 2.27E-19 | -- | 4.49E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.18E-18 | 9.37E-19 | 1.31E-19 | -- | 1.26E-18 | 3.05E-19 | 4.88E-19 | -- | 3.13E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.71E-17 | 1.60E-17 | 2.23E-18 | -- | 1.07E-17 | 2.60E-18 | 4.15E-18 | -- | 3.76E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.73E-14 | 7.43E-15 | 1.04E-15 | -- | 6.49E-15 | 1.57E-15 | 2.51E-15 | -- | 8.64E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.25E-14 | 1.83E-14 | 2.55E-15 | -- | 1.35E-14 | 3.28E-15 | 5.23E-15 | -- | 2.22E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.10E-11 | 9.05E-12 | 1.26E-12 | -- | 1.82E-12 | 4.42E-13 | 7.06E-13 | -- | 2.38E-10 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.67E-12 | 2.45E-13 | 2.48E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 6.56E-16 | 6.36E-16 | 3.81E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-15 |
| Carbon Tetrachloride | 4.37E-16 | 5.80E-15 | 2.44E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.58E-15 |
| Dichloromethane | 5.48E-14 | 3.74E-13 | 1.98E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.24E-13 | 1.23E-13 | 1.97E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-13 |
| Pentachlorophenol | 3.99E-13 | 1.95E-11 | 3.78E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.00E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.86E-11 | 4.71E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 5.20E-13 | 2.24E-13 | 3.12E-14 | -- | 3.01E-13 | 7.29E-14 | 1.16E-13 | -- | 1.52E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.39E-18 | 5.96E-19 | 8.31E-20 | -- | 4.41E-19 | 1.07E-19 | 1.71E-19 | -- | 3.37E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.63E-18 | 7.03E-19 | 9.81E-20 | -- | 9.45E-19 | 2.29E-19 | 3.66E-19 | -- | 2.33E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.78E-17 | 1.20E-17 | 1.67E-18 | -- | 8.04E-18 | 1.95E-18 | 3.12E-18 | -- | 2.82E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.30E-14 | 5.57E-15 | 7.77E-16 | -- | 4.87E-15 | 1.18E-15 | 1.89E-15 | -- | 6.47E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.19E-14 | 1.37E-14 | 1.91E-15 | -- | 1.01E-14 | 2.46E-15 | 3.92E-15 | -- | 1.44E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.52E-11 | 6.54E-12 | 9.13E-13 | -- | 1.32E-12 | 3.20E-13 | 5.11E-13 | -- | 1.66E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.25E-12 | 1.84E-13 | 1.60E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.40E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.92E-16 | 4.77E-16 | 2.46E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-15 |
| Carbon Tetrachloride | 3.28E-16 | 4.35E-15 | 1.58E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.93E-15 |
| Dichloromethane | 4.11E-14 | 2.80E-13 | 1.28E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.50E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 9.34E-14 | 9.23E-14 | 1.28E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-13 |
| Pentachlorophenol | 3.00E-13 | 1.46E-11 | 2.45E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.07E-11 | 3.41E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.23E-12 | 9.57E-13 | 1.34E-13 | -- | 1.29E-12 | 3.12E-13 | 4.98E-13 | -- | 5.18E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 5.93E-18 | 2.55E-18 | 3.56E-19 | -- | 1.89E-18 | 4.57E-19 | 7.30E-19 | -- | 1.44E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 6.99E-18 | 3.01E-18 | 4.20E-19 | -- | 4.04E-18 | 9.80E-19 | 1.57E-18 | -- | 9.86E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.19E-16 | 5.12E-17 | 7.15E-18 | -- | 3.44E-17 | 8.35E-18 | 1.33E-17 | -- | 1.21E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 5.54E-14 | 2.38E-14 | 3.33E-15 | -- | 2.08E-14 | 5.05E-15 | 8.07E-15 | -- | 2.76E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.36E-13 | 5.86E-14 | 8.18E-15 | -- | 4.34E-14 | 1.05E-14 | 1.68E-14 | -- | 4.22E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.64E-11 | 1.99E-11 | 2.78E-12 | -- | 4.02E-12 | 9.75E-13 | 1.56E-12 | -- | 4.34E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.35E-12 | 7.86E-13 | 4.66E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.10E-15 | 2.04E-15 | 7.15E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.60E-15 |
| Carbon Tetrachloride | 1.40E-15 | 1.86E-14 | 4.58E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-14 |
| Dichloromethane | 1.76E-13 | 1.20E-12 | 3.72E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.99E-13 | 3.95E-13 | 3.71E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-12 |
| Pentachlorophenol | 1.28E-12 | 6.24E-11 | 7.11E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 6.31E-11 | 1.04E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-10 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.21E-13 | 2.67E-13 | 3.73E-14 | -- | 3.59E-13 | 8.70E-14 | 1.39E-13 | -- | 1.96E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.66E-18 | 7.12E-19 | 9.93E-20 | -- | 5.26E-19 | 1.28E-19 | 2.04E-19 | -- | 4.02E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.95E-18 | 8.39E-19 | 1.17E-19 | -- | 1.13E-18 | 2.74E-19 | 4.37E-19 | -- | 2.80E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.32E-17 | 1.43E-17 | 1.99E-18 | -- | 9.61E-18 | 2.33E-18 | 3.72E-18 | -- | 3.37E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.55E-14 | 6.65E-15 | 9.28E-16 | -- | 5.81E-15 | 1.41E-15 | 2.25E-15 | -- | 7.73E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.81E-14 | 1.64E-14 | 2.28E-15 | -- | 1.21E-14 | 2.93E-15 | 4.69E-15 | -- | 1.90E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.13E-11 | 4.86E-12 | 6.78E-13 | -- | 9.80E-13 | 2.38E-13 | 3.80E-13 | -- | 1.07E-10 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.49E-12 | 2.19E-13 | 2.12E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.41E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 5.87E-16 | 5.70E-16 | 3.26E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-15 |
| Carbon Tetrachloride | 3.91E-16 | 5.20E-15 | 2.08E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-15 |
| Dichloromethane | 4.91E-14 | 3.35E-13 | 1.69E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.18E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.11E-13 | 1.10E-13 | 1.69E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-13 |
| Pentachlorophenol | 3.58E-13 | 1.74E-11 | 3.24E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.93E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.54E-11 | 2.53E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 9.43E-13 | 4.06E-13 | 5.66E-14 | -- | 5.45E-13 | 1.32E-13 | 2.11E-13 | -- | 2.97E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.51E-18 | 1.08E-18 | 1.51E-19 | -- | 7.99E-19 | 1.94E-19 | 3.10E-19 | -- | 6.11E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.97E-18 | 1.27E-18 | 1.78E-19 | -- | 1.71E-18 | 4.16E-19 | 6.64E-19 | -- | 4.25E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.05E-17 | 2.17E-17 | 3.03E-18 | -- | 1.46E-17 | 3.54E-18 | 5.65E-18 | -- | 5.12E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.35E-14 | 1.01E-14 | 1.41E-15 | -- | 8.83E-15 | 2.14E-15 | 3.42E-15 | -- | 1.17E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.78E-14 | 2.49E-14 | 3.47E-15 | -- | 1.84E-14 | 4.46E-15 | 7.12E-15 | -- | 2.91E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.13E-11 | 9.14E-12 | 1.27E-12 | -- | 1.84E-12 | 4.47E-13 | 7.14E-13 | -- | 2.15E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.27E-12 | 3.33E-13 | 3.24E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.70E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 8.92E-16 | 8.66E-16 | 4.97E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-15 |
| Carbon Tetrachloride | 5.95E-16 | 7.90E-15 | 3.18E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.96E-15 |
| Dichloromethane | 7.45E-14 | 5.09E-13 | 2.58E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.35E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.69E-13 | 1.67E-13 | 2.58E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.06E-13 |
| Pentachlorophenol | 5.44E-13 | 2.65E-11 | 4.95E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.89E-11 | 4.76E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 4.30E-13 | 1.85E-13 | 2.58E-14 | -- | 2.49E-13 | 6.03E-14 | 9.63E-14 | -- | 1.88E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.15E-18 | 4.93E-19 | 6.88E-20 | -- | 3.64E-19 | 8.83E-20 | 1.41E-19 | -- | 2.79E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.35E-18 | 5.81E-19 | 8.11E-20 | -- | 7.81E-19 | 1.89E-19 | 3.03E-19 | -- | 1.98E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.30E-17 | 9.90E-18 | 1.38E-18 | -- | 6.65E-18 | 1.61E-18 | 2.58E-18 | -- | 2.34E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.07E-14 | 4.61E-15 | 6.43E-16 | -- | 4.03E-15 | 9.76E-16 | 1.56E-15 | -- | 5.39E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.64E-14 | 1.13E-14 | 1.58E-15 | -- | 8.38E-15 | 2.03E-15 | 3.25E-15 | -- | 2.02E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 7.34E-12 | 3.15E-12 | 4.40E-13 | -- | 6.36E-13 | 1.54E-13 | 2.46E-13 | -- | 7.97E-11 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.03E-12 | 1.52E-13 | 2.26E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.07E-16 | 3.95E-16 | 3.47E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-15 |
| Carbon Tetrachloride | 2.71E-16 | 3.60E-15 | 2.22E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-15 |
| Dichloromethane | 3.40E-14 | 2.32E-13 | 1.80E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 7.72E-14 | 7.63E-14 | 1.80E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-13 |
| Pentachlorophenol | 2.48E-13 | 1.21E-11 | 3.45E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.71E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.99E-12 | 1.64E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.40E-12 | 6.02E-13 | 8.40E-14 | -- | 8.09E-13 | 1.96E-13 | 3.13E-13 | -- | 3.87E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 3.73E-18 | 1.60E-18 | 2.24E-19 | -- | 1.19E-18 | 2.87E-19 | 4.59E-19 | -- | 9.06E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.40E-18 | 1.89E-18 | 2.64E-19 | -- | 2.54E-18 | 6.16E-19 | 9.84E-19 | -- | 6.26E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 7.49E-17 | 3.22E-17 | 4.49E-18 | -- | 2.16E-17 | 5.25E-18 | 8.38E-18 | -- | 7.58E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.49E-14 | 1.50E-14 | 2.09E-15 | -- | 1.31E-14 | 3.18E-15 | 5.07E-15 | -- | 1.74E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 8.58E-14 | 3.69E-14 | 5.14E-15 | -- | 2.73E-14 | 6.61E-15 | 1.06E-14 | -- | 3.53E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.57E-11 | 1.11E-11 | 1.54E-12 | -- | 2.23E-12 | 5.40E-13 | 8.63E-13 | -- | 2.34E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 3.36E-12 | 4.94E-13 | 3.92E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.52E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.32E-15 | 1.28E-15 | 6.02E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-15 |
| Carbon Tetrachloride | 8.82E-16 | 1.17E-14 | 3.85E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-14 |
| Dichloromethane | 1.11E-13 | 7.55E-13 | 3.13E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.41E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.51E-13 | 2.48E-13 | 3.12E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.50E-13 |
| Pentachlorophenol | 8.06E-13 | 3.93E-11 | 5.99E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 3.50E-11 | 5.76E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.49E-12 | 1.07E-12 | 1.49E-13 | -- | 1.44E-12 | 3.48E-13 | 5.56E-13 | -- | 5.24E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 6.63E-18 | 2.85E-18 | 3.98E-19 | -- | 2.11E-18 | 5.11E-19 | 8.16E-19 | -- | 1.61E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 7.82E-18 | 3.36E-18 | 4.69E-19 | -- | 4.52E-18 | 1.10E-18 | 1.75E-18 | -- | 1.10E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.33E-16 | 5.72E-17 | 7.99E-18 | -- | 3.85E-17 | 9.33E-18 | 1.49E-17 | -- | 1.35E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 6.20E-14 | 2.66E-14 | 3.72E-15 | -- | 2.33E-14 | 5.65E-15 | 9.02E-15 | -- | 3.08E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.52E-13 | 6.55E-14 | 9.15E-15 | -- | 4.85E-14 | 1.18E-14 | 1.88E-14 | -- | 3.92E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.80E-11 | 2.06E-11 | 2.88E-12 | -- | 4.16E-12 | 1.01E-12 | 1.61E-12 | -- | 4.25E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.98E-12 | 8.78E-13 | 4.32E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.35E-15 | 2.28E-15 | 6.62E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.26E-15 |
| Carbon Tetrachloride | 1.57E-15 | 2.08E-14 | 4.24E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-14 |
| Dichloromethane | 1.96E-13 | 1.34E-12 | 3.44E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.47E-13 | 4.41E-13 | 3.44E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-12 |
| Pentachlorophenol | 1.43E-12 | 6.98E-11 | 6.58E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 6.53E-11 | 1.07E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.79E-10 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.10E-12 | 1.33E-12 | 1.86E-13 | -- | 1.79E-12 | 4.34E-13 | 6.94E-13 | -- | 1.09E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 8.27E-18 | 3.55E-18 | 4.96E-19 | -- | 2.63E-18 | 6.37E-19 | 1.02E-18 | -- | 3.62E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 9.75E-18 | 4.19E-18 | 5.85E-19 | -- | 5.64E-18 | 1.37E-18 | 2.18E-18 | -- | 2.46E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.66E-16 | 7.14E-17 | 9.96E-18 | -- | 4.80E-17 | 1.16E-17 | 1.86E-17 | -- | 3.03E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 7.73E-14 | 3.32E-14 | 4.64E-15 | -- | 2.90E-14 | 7.04E-15 | 1.12E-14 | -- | 6.91E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.90E-13 | 8.17E-14 | 1.14E-14 | -- | 6.04E-14 | 1.47E-14 | 2.34E-14 | -- | 7.98E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.65E-11 | 2.86E-11 | 3.99E-12 | -- | 5.76E-12 | 1.40E-12 | 2.23E-12 | -- | 1.05E-09 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.65E-11 | 1.79E-12 | 1.37E-10 | -- | -- | -- | -- | 6.62E-11 | 1.34E-10 | 1.33E-12 | 3.33E-13 | 3.07E-13 | -- | 4.75E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 6.49E-15 | 4.65E-15 | 2.11E-18 | -- | -- | -- | -- | 3.00E-11 | 4.02E-11 | 1.09E-12 | 1.40E-14 | 1.29E-14 | -- | 7.14E-11 |
| Carbon Tetrachloride | 4.33E-15 | 4.24E-14 | 1.35E-16 | -- | -- | -- | -- | 5.68E-12 | 7.61E-12 | 2.06E-13 | 2.65E-15 | 2.45E-15 | -- | 1.36E-11 |
| Dichloromethane | 5.42E-13 | 2.73E-12 | 1.10E-15 | -- | -- | -- | -- | 1.61E-11 | 2.15E-11 | 5.83E-13 | 7.51E-15 | 6.93E-15 | -- | 4.18E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.23E-12 | 8.98E-13 | 1.09E-14 | -- | -- | -- | -- | 2.76E-11 | 3.77E-11 | 1.17E-12 | 1.78E-14 | 1.64E-14 | -- | 6.95E-11 |
| Pentachlorophenol | 3.96E-12 | 1.42E-10 | 2.10E-10 | -- | -- | -- | -- | 2.02E-11 | 4.09E-11 | 3.90E-13 | 8.39E-17 | 7.74E-17 | -- | 4.97E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.00E-10 | 2.43E-11 | -- | -- | -- | -- | -- | 7.29E-10 | 2.00E-10 | 2.62E-11 | 4.02E-13 | 3.71E-13 | -- | 2.34E-09 |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.94E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.08E-13 | 4.64E-14 | -- | -- | 8.02E-14 | 1.92E-14 | 3.08E-14 | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.88E-19 | 1.24E-19 | -- | -- | 1.18E-19 | 2.81E-20 | 4.51E-20 | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.39E-19 | 1.46E-19 | -- | -- | 2.52E-19 | 6.03E-20 | 9.67E-20 | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.78E-18 | 2.48E-18 | -- | -- | 2.15E-18 | 5.13E-19 | 8.23E-19 | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.69E-15 | 1.16E-15 | -- | -- | 1.30E-15 | 3.11E-16 | 4.98E-16 | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 6.62E-15 | 2.85E-15 | -- | -- | 2.70E-15 | 6.47E-16 | 1.04E-15 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.61E-01 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.51E-12 | 1.51E-12 | -- | -- | 3.91E-13 | 9.34E-14 | 1.50E-13 | -- | -- |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.02E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.94E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-17 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.95E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-14 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-12 |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.62E-14 | -- | -- | -- | 2.09E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 9.65E-20 | -- | -- | -- | 3.07E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.14E-19 | -- | -- | -- | 6.58E-20 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.94E-18 | -- | -- | -- | 5.60E-19 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 9.02E-16 | -- | -- | -- | 3.39E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.22E-15 | -- | -- | -- | 7.06E-16 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.40E-13 | -- | -- | -- | 5.55E-14 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.72E-14 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.96E-13 |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 7.61E-14 | -- | -- | -- | 4.40E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.03E-19 | -- | -- | -- | 6.45E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.39E-19 | -- | -- | -- | 1.38E-19 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 4.08E-18 | -- | -- | -- | 1.18E-18 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.90E-15 | -- | -- | -- | 7.13E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.67E-15 | -- | -- | -- | 1.48E-15 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.82E-12 | -- | -- | -- | 1.58E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.25E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.15E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-12 |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | 2.48E-12 | -- | -- | -- | -- | -- | 1.04E-12 | 3.52E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | 5.20E-12 | -- | -- | -- | -- | -- | -- | 5.20E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | 5.92E-13 | -- | -- | -- | -- | -- | 5.60E-13 | 1.15E-12 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | 1.16E-11 | -- | -- | -- | -- | -- | -- | 1.16E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | 5.94E-13 | -- | -- | -- | -- | -- | -- | 5.94E-13 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | 7.09E-11 | -- | -- | -- | -- | -- | 1.68E-14 | 7.09E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | 1.00E-09 | -- | -- | -- | -- | -- | 2.42E-11 | 1.03E-09 |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 140,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | 1.11E-11 | 7.62E-11 | -- | -- | -- | -- | -- | -- | -- | -- | 8.73E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | 1.66E-13 | 1.37E-12 | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-12 |
| Carbon Tetrachloride | -- | -- | -- | 3.11E-14 | 4.19E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 4.51E-13 |
| Dichloromethane | -- | -- | -- | 7.88E-14 | 2.60E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | 5.03E-13 | 1.33E-10 | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-10 |
| Pentachlorophenol | -- | -- | -- | 3.02E-12 | 8.92E-09 | -- | -- | -- | -- | -- | -- | -- | -- | 8.93E-09 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | 2.06E-10 | 1.12E-08 | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 |

# APPENDIX I-8

Multi-Pathway Results – Normal Operations (Project Alone Case) – 400,000 tpy

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 7.10E-12 | 3.05E-12 | 1.67E-12 | -- | 2.52E-12 | 7.84E-13 | 1.21E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.40E-12 | 6.03E-13 | 3.30E-13 | -- | 7.20E-13 | 2.24E-13 | 3.47E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.06E-11 | 4.56E-12 | 2.49E-12 | -- | 3.75E-12 | 1.17E-12 | 1.81E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.98E-06 | 1.71E-06 | 9.37E-07 | -- | 9.87E-07 | 3.08E-07 | 4.76E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.85E-05 | 1.66E-05 | 9.07E-06 | -- | 2.05E-06 | 6.38E-07 | 9.87E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.22E-16 | 5.24E-17 | 2.87E-17 | -- | 4.31E-17 | 1.35E-17 | 2.08E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.40E-14 | 1.46E-14 | 7.99E-15 | -- | 6.61E-15 | 2.06E-15 | 3.19E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.95E-14 | 2.99E-14 | 1.64E-14 | -- | 1.23E-13 | 3.84E-14 | 5.93E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.09E-14 | 4.69E-15 | 2.57E-15 | -- | 1.93E-15 | 6.02E-16 | 9.31E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.68E-14 | 7.22E-15 | 3.96E-15 | -- | 5.95E-15 | 1.85E-15 | 2.87E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 9.12E-10 | 3.92E-10 | 2.15E-10 | -- | 1.62E-10 | 5.03E-11 | 7.78E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.82E-12 | 1.21E-12 | 6.65E-13 | -- | 4.00E-13 | 1.25E-13 | 1.93E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.41E-13 | 6.07E-14 | 3.33E-14 | -- | 2.50E-14 | 7.80E-15 | 1.21E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.65E-10 | 7.07E-11 | 3.87E-11 | -- | 3.79E-11 | 1.18E-11 | 1.83E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.98E-09 | 1.28E-09 | 7.01E-10 | -- | 5.27E-11 | 1.64E-11 | 2.54E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.33E-10 | 1.00E-10 | 5.49E-11 | -- | 4.54E-11 | 1.42E-11 | 2.19E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.68E-06 | 1.15E-06 | 6.32E-07 | -- | 4.75E-07 | 1.48E-07 | 2.29E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.55E-07 | 1.53E-07 | 8.36E-08 | -- | 1.89E-08 | 5.88E-09 | 9.09E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.78E-09 | 1.62E-09 | 8.90E-10 | -- | 6.69E-10 | 2.09E-10 | 3.22E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.38E-07 | 1.45E-07 | 7.97E-08 | -- | 1.80E-08 | 5.60E-09 | 8.66E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.09E-08 | 8.98E-09 | 4.92E-09 | -- | 3.70E-09 | 1.15E-09 | 1.78E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.92E-06 | 3.83E-06 | 2.10E-06 | -- | 2.21E-06 | 6.89E-07 | 1.07E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.50E-10 | 1.07E-10 | 5.88E-11 | -- | 1.77E-11 | 5.52E-12 | 8.53E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.33E-08 | 2.29E-08 | 1.26E-08 | -- | 8.50E-09 | 2.65E-09 | 4.09E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.62E-06 | 6.97E-07 | 3.82E-07 | -- | 2.87E-07 | 8.95E-08 | 1.38E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.60E-05 | 2.41E-05 | 1.32E-05 | -- | 5.95E-07 | 1.86E-07 | 2.87E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.33E-05 | 1.00E-05 | 5.49E-06 | -- | 2.07E-06 | 6.44E-07 | 9.96E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.36E-06 | 5.83E-07 | 3.19E-07 | -- | 4.80E-07 | 1.50E-07 | 2.31E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.43E-06 | 1.05E-06 | 5.73E-07 | -- | 1.51E-06 | 4.70E-07 | 7.26E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.02E-13 | 4.38E-14 | 2.40E-14 | -- | 1.80E-14 | 5.63E-15 | 8.70E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.29E-09 | 1.85E-09 | 1.01E-09 | -- | 1.52E-11 | 4.74E-12 | 7.33E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.92E-08 | 2.12E-08 | 1.16E-08 | -- | 2.18E-08 | 6.79E-09 | 1.05E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.95E-04 | 1.27E-04 | 6.95E-05 | -- | 5.23E-06 | 1.63E-06 | 2.52E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.54E-08 | 3.67E-08 | 2.01E-08 | -- | 1.51E-08 | 4.71E-09 | 7.29E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.72E-07 | 1.17E-07 | 6.40E-08 | -- | 4.81E-08 | 1.50E-08 | 2.32E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.55E-07 | 1.53E-07 | 8.36E-08 | -- | 1.26E-08 | 3.92E-09 | 6.06E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-12 | 1.87E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.04E-13 | 4.13E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-12 | 2.71E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-04 | 2.15E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-03 | 1.92E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-17 | 3.15E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-15 | 7.06E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.95E-14 | 3.76E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-15 | 2.29E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.42E-15 | 4.31E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.42E-10 | 2.75E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.76E-13 | 6.39E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.59E-14 | 3.66E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-10 | 5.53E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-09 | 7.22E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-08 | 1.36E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.32E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.25E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.49E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.96E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.14E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.44E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.26E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.75E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.18E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.01E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-07 |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.35E-11 | 1.01E-11 | 2.33E-12 | -- | 1.83E-12 | 5.25E-13 | 8.10E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.64E-12 | 2.00E-12 | 4.59E-13 | -- | 5.23E-13 | 1.50E-13 | 2.32E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.51E-11 | 1.51E-11 | 3.47E-12 | -- | 2.73E-12 | 7.83E-13 | 1.21E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.32E-05 | 5.67E-06 | 1.30E-06 | -- | 7.17E-07 | 2.06E-07 | 3.18E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.28E-04 | 5.49E-05 | 1.26E-05 | -- | 1.49E-06 | 4.27E-07 | 6.59E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.04E-16 | 1.74E-16 | 3.99E-17 | -- | 3.14E-17 | 9.01E-18 | 1.39E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.12E-13 | 4.84E-14 | 1.11E-14 | -- | 4.81E-15 | 1.38E-15 | 2.13E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.30E-13 | 9.90E-14 | 2.28E-14 | -- | 8.95E-14 | 2.57E-14 | 3.96E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.61E-14 | 1.55E-14 | 3.57E-15 | -- | 1.40E-15 | 4.03E-16 | 6.22E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.57E-14 | 2.39E-14 | 5.50E-15 | -- | 4.33E-15 | 1.24E-15 | 1.91E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.02E-09 | 1.30E-09 | 2.99E-10 | -- | 1.17E-10 | 3.37E-11 | 5.20E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.35E-12 | 4.02E-12 | 9.24E-13 | -- | 2.91E-13 | 8.35E-14 | 1.29E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.68E-13 | 2.01E-13 | 4.62E-14 | -- | 1.82E-14 | 5.22E-15 | 8.05E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.45E-10 | 2.34E-10 | 5.39E-11 | -- | 2.75E-11 | 7.91E-12 | 1.22E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.86E-09 | 4.24E-09 | 9.74E-10 | -- | 3.83E-11 | 1.10E-11 | 1.70E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.73E-10 | 3.32E-10 | 7.64E-11 | -- | 3.30E-11 | 9.49E-12 | 1.46E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 8.89E-06 | 3.82E-06 | 8.78E-07 | -- | 3.45E-07 | 9.92E-08 | 1.53E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.18E-06 | 5.06E-07 | 1.16E-07 | -- | 1.37E-08 | 3.94E-09 | 6.07E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.25E-08 | 5.38E-09 | 1.24E-09 | -- | 4.86E-10 | 1.40E-10 | 2.15E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.12E-06 | 4.82E-07 | 1.11E-07 | -- | 1.31E-08 | 3.75E-09 | 5.78E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.92E-08 | 2.97E-08 | 6.84E-09 | -- | 2.69E-09 | 7.72E-10 | 1.19E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.95E-05 | 1.27E-05 | 2.92E-06 | -- | 1.61E-06 | 4.61E-07 | 7.11E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.28E-10 | 3.56E-10 | 8.18E-11 | -- | 1.29E-11 | 3.69E-12 | 5.70E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.77E-07 | 7.59E-08 | 1.74E-08 | -- | 6.18E-09 | 1.77E-09 | 2.73E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.37E-06 | 2.31E-06 | 5.31E-07 | -- | 2.09E-07 | 5.99E-08 | 9.24E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.86E-04 | 7.98E-05 | 1.83E-05 | -- | 4.33E-07 | 1.24E-07 | 1.92E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.73E-05 | 3.32E-05 | 7.64E-06 | -- | 1.50E-06 | 4.31E-07 | 6.65E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.49E-06 | 1.93E-06 | 4.44E-07 | -- | 3.49E-07 | 1.00E-07 | 1.55E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.06E-06 | 3.46E-06 | 7.96E-07 | -- | 1.10E-06 | 3.15E-07 | 4.85E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.38E-13 | 1.45E-13 | 3.34E-14 | -- | 1.31E-14 | 3.77E-15 | 5.81E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-08 | 6.12E-09 | 1.41E-09 | -- | 1.11E-11 | 3.17E-12 | 4.89E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.63E-07 | 7.01E-08 | 1.61E-08 | -- | 1.58E-08 | 4.55E-09 | 7.01E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 9.79E-04 | 4.21E-04 | 9.67E-05 | -- | 3.80E-06 | 1.09E-06 | 1.68E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.83E-07 | 1.22E-07 | 2.79E-08 | -- | 1.10E-08 | 3.16E-09 | 4.87E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.01E-07 | 3.87E-07 | 8.90E-08 | -- | 3.50E-08 | 1.00E-08 | 1.55E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.18E-06 | 5.06E-07 | 1.16E-07 | -- | 9.14E-09 | 2.63E-09 | 4.05E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.29E-10 | 1.91E-10 | 1.72E-11 | 7.35E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-10 |
| Anthracene | 1.14E-11 | 1.69E-11 | 2.40E-14 | 1.12E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-11 |
| Fluorene | 1.29E-10 | 1.91E-10 | 2.28E-13 | 3.16E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.27E-06 | 3.36E-06 | 4.33E-07 | 9.27E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.06E-05 | 2.18E-05 | 4.50E-06 | 1.76E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.45E-14 | 2.11E-14 | 1.23E-13 | 1.68E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-13 |
| Bromoform | 4.69E-12 | 6.97E-12 | 4.75E-12 | 1.13E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-11 |
| Carbon Tetrachloride | 5.64E-12 | 8.07E-12 | 7.52E-11 | 1.26E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.95E-11 |
| Chloroform | 2.49E-12 | 3.67E-12 | 1.25E-11 | 1.62E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-11 |
| Trichlorofluoromethane (FREON 11) | 1.99E-12 | 2.91E-12 | 1.55E-11 | 2.37E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.97E-09 | 7.39E-09 | 1.09E-08 | 1.06E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-08 |
| 1,2,4-Trichlorobenzene | 4.47E-11 | 6.64E-11 | 2.49E-11 | 3.64E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-10 |
| 1,2-Dichlorobenzene | 5.24E-12 | 7.58E-12 | 3.94E-11 | 8.66E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.31E-11 |
| Hexachlorobenzene | 4.66E-10 | 6.86E-10 | 4.76E-10 | 3.04E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-09 |
| Pentachlorobenzene | 9.92E-09 | 1.48E-08 | 6.22E-10 | 5.30E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-08 |
| Pentachlorophenol | 5.98E-08 | 1.27E-09 | 4.34E-08 | 3.36E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.72E-05 | 1.07E-05 | 9.15E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.30E-05 |
| Arsenic | 2.24E-06 | 2.80E-07 | 3.23E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-06 |
| Barium | 2.57E-08 | 1.51E-08 | 6.44E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-08 |
| Beryllium | 3.17E-07 | 1.09E-07 | 5.77E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-06 |
| Boron | 5.06E-06 | 5.86E-06 | 4.75E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-05 |
| Cadmium | 1.14E-04 | 1.39E-04 | 6.49E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-04 |
| Chromium (Total) | 2.30E-09 | 1.52E-10 | 1.28E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-09 |
| Chromium VI | 4.91E-07 | 3.24E-08 | 2.73E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.07E-07 |
| Cobalt | 7.24E-06 | 1.75E-06 | 1.29E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-05 |
| Lead | 1.03E-04 | 9.48E-05 | 5.73E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-04 |
| Mercury - Inorganic | 3.94E-05 | 4.21E-05 | 9.55E-06 | 4.45E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-04 |
| Methyl Mercury | 8.03E-06 | 4.96E-06 | 1.53E-06 | 1.88E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-05 |
| Nickel | 8.28E-06 | 2.82E-06 | 2.21E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-05 |
| Phosphorus | 3.46E-11 | 4.44E-11 | 4.05E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.36E-11 |
| Selenium | 1.48E-07 | 1.04E-08 | 1.07E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-07 |
| Silver | 1.55E-06 | 8.46E-07 | 5.60E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-06 |
| Thallium | 7.36E-04 | 3.15E-05 | 1.34E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-03 |
| Tin | 1.51E-07 | 9.62E-08 | 5.82E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.04E-07 |
| Vanadium | 2.65E-07 | 1.12E-07 | 9.27E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-06 |
| Zinc | 3.86E-06 | 4.29E-06 | 3.63E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-05 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.32E-12 | 2.29E-12 | 1.25E-12 | -- | 1.88E-12 | 5.88E-13 | 9.08E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.05E-12 | 4.51E-13 | 2.47E-13 | -- | 5.39E-13 | 1.68E-13 | 2.60E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 7.94E-12 | 3.41E-12 | 1.87E-12 | -- | 2.81E-12 | 8.76E-13 | 1.35E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.97E-06 | 1.28E-06 | 7.00E-07 | -- | 7.37E-07 | 2.30E-07 | 3.55E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.76E-05 | 1.19E-05 | 6.50E-06 | -- | 1.47E-06 | 4.57E-07 | 7.06E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 9.13E-17 | 3.93E-17 | 2.15E-17 | -- | 3.23E-17 | 1.01E-17 | 1.56E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.54E-14 | 1.09E-14 | 5.99E-15 | -- | 4.95E-15 | 1.54E-15 | 2.39E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 5.21E-14 | 2.24E-14 | 1.23E-14 | -- | 9.22E-14 | 2.88E-14 | 4.45E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 8.18E-15 | 3.51E-15 | 1.93E-15 | -- | 1.45E-15 | 4.51E-16 | 6.98E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.26E-14 | 5.41E-15 | 2.96E-15 | -- | 4.46E-15 | 1.39E-15 | 2.15E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.83E-10 | 2.94E-10 | 1.61E-10 | -- | 1.21E-10 | 3.77E-11 | 5.83E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.11E-12 | 9.09E-13 | 4.98E-13 | -- | 3.00E-13 | 9.34E-14 | 1.44E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.06E-13 | 4.55E-14 | 2.49E-14 | -- | 1.87E-14 | 5.84E-15 | 9.03E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.23E-10 | 5.30E-11 | 2.90E-11 | -- | 2.84E-11 | 8.85E-12 | 1.37E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.23E-09 | 9.59E-10 | 5.25E-10 | -- | 3.95E-11 | 1.23E-11 | 1.90E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.75E-10 | 7.52E-11 | 4.12E-11 | -- | 3.40E-11 | 1.06E-11 | 1.64E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.93E-06 | 8.28E-07 | 4.54E-07 | -- | 3.41E-07 | 1.06E-07 | 1.64E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.55E-07 | 1.10E-07 | 6.00E-08 | -- | 1.35E-08 | 4.22E-09 | 6.53E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.71E-09 | 1.17E-09 | 6.39E-10 | -- | 4.80E-10 | 1.50E-10 | 2.32E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.43E-07 | 1.04E-07 | 5.72E-08 | -- | 1.29E-08 | 4.02E-09 | 6.21E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.50E-08 | 6.45E-09 | 3.53E-09 | -- | 2.66E-09 | 8.28E-10 | 1.28E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.40E-06 | 2.75E-06 | 1.51E-06 | -- | 1.59E-06 | 4.95E-07 | 7.65E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.79E-10 | 7.72E-11 | 4.23E-11 | -- | 1.27E-11 | 3.96E-12 | 6.13E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.83E-08 | 1.65E-08 | 9.02E-09 | -- | 6.10E-09 | 1.90E-09 | 2.94E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.16E-06 | 5.00E-07 | 2.74E-07 | -- | 2.06E-07 | 6.42E-08 | 9.93E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.02E-05 | 1.73E-05 | 9.46E-06 | -- | 4.27E-07 | 1.33E-07 | 2.06E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.57E-05 | 6.73E-06 | 3.69E-06 | -- | 1.39E-06 | 4.32E-07 | 6.68E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 9.73E-07 | 4.18E-07 | 2.29E-07 | -- | 3.45E-07 | 1.07E-07 | 1.66E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.75E-06 | 7.50E-07 | 4.11E-07 | -- | 1.08E-06 | 3.37E-07 | 5.21E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 7.32E-14 | 3.15E-14 | 1.72E-14 | -- | 1.30E-14 | 4.04E-15 | 6.25E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.08E-09 | 1.33E-09 | 7.26E-10 | -- | 1.09E-11 | 3.40E-12 | 5.26E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.54E-08 | 1.52E-08 | 8.33E-09 | -- | 1.57E-08 | 4.88E-09 | 7.55E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.12E-04 | 9.11E-05 | 4.99E-05 | -- | 3.75E-06 | 1.17E-06 | 1.81E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.13E-08 | 2.63E-08 | 1.44E-08 | -- | 1.08E-08 | 3.38E-09 | 5.23E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.95E-07 | 8.38E-08 | 4.59E-08 | -- | 3.45E-08 | 1.08E-08 | 1.66E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.55E-07 | 1.10E-07 | 6.00E-08 | -- | 9.03E-09 | 2.81E-09 | 4.35E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-12 | 1.40E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-13 | 3.09E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-12 | 2.03E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-04 | 1.60E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-03 | 1.37E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-17 | 2.36E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-15 | 5.29E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-14 | 2.82E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.28E-16 | 1.71E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-15 | 3.23E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.06E-10 | 2.06E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.31E-13 | 4.79E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.43E-14 | 2.74E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-10 | 4.14E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-09 | 5.41E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.27E-09 | 9.63E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.38E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.97E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.47E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.16E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.70E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.41E-07 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.76E-11 | 7.58E-12 | 1.74E-12 | -- | 1.37E-12 | 3.93E-13 | 6.07E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.48E-12 | 1.50E-12 | 3.44E-13 | -- | 3.92E-13 | 1.13E-13 | 1.74E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.63E-11 | 1.13E-11 | 2.60E-12 | -- | 2.04E-12 | 5.87E-13 | 9.05E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 9.85E-06 | 4.23E-06 | 9.73E-07 | -- | 5.36E-07 | 1.54E-07 | 2.37E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.14E-05 | 3.93E-05 | 9.03E-06 | -- | 1.07E-06 | 3.06E-07 | 4.72E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.03E-16 | 1.30E-16 | 2.99E-17 | -- | 2.35E-17 | 6.75E-18 | 1.04E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.43E-14 | 3.62E-14 | 8.33E-15 | -- | 3.60E-15 | 1.03E-15 | 1.59E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.73E-13 | 7.42E-14 | 1.71E-14 | -- | 6.71E-14 | 1.93E-14 | 2.97E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.71E-14 | 1.16E-14 | 2.68E-15 | -- | 1.05E-15 | 3.02E-16 | 4.66E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.17E-14 | 1.79E-14 | 4.12E-15 | -- | 3.24E-15 | 9.31E-16 | 1.43E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.26E-09 | 9.74E-10 | 2.24E-10 | -- | 8.80E-11 | 2.53E-11 | 3.89E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 7.01E-12 | 3.01E-12 | 6.92E-13 | -- | 2.18E-13 | 6.25E-14 | 9.64E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.51E-13 | 1.51E-13 | 3.46E-14 | -- | 1.36E-14 | 3.91E-15 | 6.03E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.08E-10 | 1.76E-10 | 4.04E-11 | -- | 2.06E-11 | 5.92E-12 | 9.13E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.39E-09 | 3.18E-09 | 7.30E-10 | -- | 2.87E-11 | 8.25E-12 | 1.27E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.79E-10 | 2.49E-10 | 5.72E-11 | -- | 2.48E-11 | 7.11E-12 | 1.10E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 6.38E-06 | 2.74E-06 | 6.31E-07 | -- | 2.48E-07 | 7.12E-08 | 1.10E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.45E-07 | 3.63E-07 | 8.34E-08 | -- | 9.84E-09 | 2.83E-09 | 4.36E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.99E-09 | 3.86E-09 | 8.88E-10 | -- | 3.49E-10 | 1.00E-10 | 1.55E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 8.04E-07 | 3.46E-07 | 7.94E-08 | -- | 9.37E-09 | 2.69E-09 | 4.15E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.97E-08 | 2.14E-08 | 4.91E-09 | -- | 1.93E-09 | 5.54E-10 | 8.55E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.12E-05 | 9.12E-06 | 2.09E-06 | -- | 1.15E-06 | 3.31E-07 | 5.11E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.95E-10 | 2.56E-10 | 5.87E-11 | -- | 9.24E-12 | 2.65E-12 | 4.09E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.27E-07 | 5.45E-08 | 1.25E-08 | -- | 4.44E-09 | 1.27E-09 | 1.96E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.86E-06 | 1.66E-06 | 3.81E-07 | -- | 1.50E-07 | 4.30E-08 | 6.63E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.33E-04 | 5.72E-05 | 1.32E-05 | -- | 3.10E-07 | 8.91E-08 | 1.37E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.19E-05 | 2.23E-05 | 5.13E-06 | -- | 1.01E-06 | 2.89E-07 | 4.46E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.22E-06 | 1.39E-06 | 3.18E-07 | -- | 2.50E-07 | 7.19E-08 | 1.11E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.78E-06 | 2.49E-06 | 5.71E-07 | -- | 7.86E-07 | 2.26E-07 | 3.48E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.43E-13 | 1.04E-13 | 2.40E-14 | -- | 9.42E-15 | 2.71E-15 | 4.17E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.02E-08 | 4.39E-09 | 1.01E-09 | -- | 7.94E-12 | 2.28E-12 | 3.51E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.17E-07 | 5.04E-08 | 1.16E-08 | -- | 1.14E-08 | 3.27E-09 | 5.04E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 7.02E-04 | 3.02E-04 | 6.94E-05 | -- | 2.73E-06 | 7.84E-07 | 1.21E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.03E-07 | 8.73E-08 | 2.01E-08 | -- | 7.89E-09 | 2.26E-09 | 3.49E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.46E-07 | 2.78E-07 | 6.38E-08 | -- | 2.51E-08 | 7.21E-09 | 1.11E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.45E-07 | 3.63E-07 | 8.35E-08 | -- | 6.56E-09 | 1.89E-09 | 2.91E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 9.65E-11 | 1.43E-10 | 1.29E-11 | 5.50E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-10 |
| Anthracene | 8.55E-12 | 1.27E-11 | 1.80E-14 | 7.71E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-11 |
| Fluorene | 9.63E-11 | 1.43E-10 | 1.71E-13 | 2.17E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.84E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.70E-06 | 2.51E-06 | 3.24E-07 | 6.37E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.15E-05 | 1.56E-05 | 3.22E-06 | 1.21E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.08E-14 | 1.58E-14 | 9.20E-14 | 1.15E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-13 |
| Bromoform | 3.51E-12 | 5.22E-12 | 3.56E-12 | 7.77E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-11 |
| Carbon Tetrachloride | 4.21E-12 | 6.04E-12 | 5.63E-11 | 8.64E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.71E-11 |
| Chloroform | 1.87E-12 | 2.75E-12 | 9.35E-12 | 1.11E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-11 |
| Trichlorofluoromethane (FREON 11) | 1.49E-12 | 2.18E-12 | 1.16E-11 | 1.63E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.72E-09 | 5.54E-09 | 8.14E-09 | 7.29E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-08 |
| 1,2,4-Trichlorobenzene | 3.35E-11 | 4.98E-11 | 1.86E-11 | 2.50E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-10 |
| 1,2-Dichlorobenzene | 3.92E-12 | 5.68E-12 | 2.95E-11 | 5.95E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-11 |
| Hexachlorobenzene | 3.49E-10 | 5.14E-10 | 3.57E-10 | 2.09E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-09 |
| Pentachlorobenzene | 7.43E-09 | 1.11E-08 | 4.66E-10 | 3.64E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-08 |
| Pentachlorophenol | 4.11E-08 | 9.51E-10 | 3.25E-08 | 2.31E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.86E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.21E-05 | 7.65E-06 | 6.57E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.06E-05 |
| Arsenic | 1.56E-06 | 2.01E-07 | 2.32E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-06 |
| Barium | 1.81E-08 | 1.09E-08 | 4.63E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-08 |
| Beryllium | 2.22E-07 | 7.79E-08 | 4.14E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-06 |
| Boron | 3.61E-06 | 4.21E-06 | 3.41E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.24E-06 |
| Cadmium | 8.12E-05 | 9.96E-05 | 4.66E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-04 |
| Chromium (Total) | 1.60E-09 | 1.09E-10 | 9.18E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-09 |
| Chromium VI | 3.41E-07 | 2.33E-08 | 1.96E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-07 |
| Cobalt | 5.05E-06 | 1.25E-06 | 9.26E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-05 |
| Lead | 7.32E-05 | 6.80E-05 | 4.11E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-04 |
| Mercury - Inorganic | 2.66E-05 | 2.83E-05 | 6.41E-06 | 3.06E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-04 |
| Methyl Mercury | 5.63E-06 | 3.56E-06 | 1.09E-06 | 1.30E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-05 |
| Nickel | 5.79E-06 | 2.02E-06 | 1.59E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-05 |
| Phosphorus | 2.47E-11 | 3.19E-11 | 2.91E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.99E-11 |
| Selenium | 1.03E-07 | 7.49E-09 | 7.71E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-07 |
| Silver | 1.09E-06 | 6.08E-07 | 4.02E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-06 |
| Thallium | 5.11E-04 | 2.26E-05 | 9.64E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-03 |
| Tin | 1.06E-07 | 6.90E-08 | 4.18E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.03E-07 |
| Vanadium | 1.86E-07 | 8.05E-08 | 6.65E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-06 |
| Zinc | 2.75E-06 | 3.08E-06 | 2.61E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.74E-06 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.22E-11 | 9.56E-12 | 5.23E-12 | -- | 7.87E-12 | 2.45E-12 | 3.79E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.39E-12 | 1.89E-12 | 1.03E-12 | -- | 2.25E-12 | 7.02E-13 | 1.09E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.32E-11 | 1.43E-11 | 7.81E-12 | -- | 1.17E-11 | 3.66E-12 | 5.66E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.24E-05 | 5.35E-06 | 2.93E-06 | -- | 3.08E-06 | 9.61E-07 | 1.49E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 8.58E-05 | 3.69E-05 | 2.02E-05 | -- | 4.56E-06 | 1.42E-06 | 2.20E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.81E-16 | 1.64E-16 | 8.98E-17 | -- | 1.35E-16 | 4.21E-17 | 6.51E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.06E-13 | 4.57E-14 | 2.50E-14 | -- | 2.07E-14 | 6.45E-15 | 9.97E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.18E-13 | 9.35E-14 | 5.12E-14 | -- | 3.85E-13 | 1.20E-13 | 1.86E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.41E-14 | 1.47E-14 | 8.04E-15 | -- | 6.04E-15 | 1.88E-15 | 2.91E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.26E-14 | 2.26E-14 | 1.24E-14 | -- | 1.86E-14 | 5.80E-15 | 8.97E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.85E-09 | 1.23E-09 | 6.72E-10 | -- | 5.05E-10 | 1.58E-10 | 2.44E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.83E-12 | 3.80E-12 | 2.08E-12 | -- | 1.25E-12 | 3.90E-13 | 6.03E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.42E-13 | 1.90E-13 | 1.04E-13 | -- | 7.83E-14 | 2.44E-14 | 3.77E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.15E-10 | 2.21E-10 | 1.21E-10 | -- | 1.18E-10 | 3.69E-11 | 5.71E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.32E-09 | 4.00E-09 | 2.19E-09 | -- | 1.65E-10 | 5.14E-11 | 7.95E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.30E-10 | 3.14E-10 | 1.72E-10 | -- | 1.42E-10 | 4.43E-11 | 6.85E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 5.98E-06 | 2.57E-06 | 1.41E-06 | -- | 1.06E-06 | 3.30E-07 | 5.10E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.91E-07 | 3.40E-07 | 1.86E-07 | -- | 4.20E-08 | 1.31E-08 | 2.03E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.42E-09 | 3.62E-09 | 1.98E-09 | -- | 1.49E-09 | 4.65E-10 | 7.19E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 7.54E-07 | 3.24E-07 | 1.77E-07 | -- | 4.00E-08 | 1.25E-08 | 1.93E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.65E-08 | 2.00E-08 | 1.10E-08 | -- | 8.24E-09 | 2.57E-09 | 3.97E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.99E-05 | 8.54E-06 | 4.68E-06 | -- | 4.92E-06 | 1.53E-06 | 2.37E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.57E-10 | 2.39E-10 | 1.31E-10 | -- | 3.94E-11 | 1.23E-11 | 1.90E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.19E-07 | 5.11E-08 | 2.80E-08 | -- | 1.89E-08 | 5.90E-09 | 9.12E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.61E-06 | 1.55E-06 | 8.51E-07 | -- | 6.40E-07 | 1.99E-07 | 3.08E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.25E-04 | 5.36E-05 | 2.94E-05 | -- | 1.33E-06 | 4.13E-07 | 6.39E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.37E-05 | 2.31E-05 | 1.26E-05 | -- | 4.75E-06 | 1.48E-06 | 2.29E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.02E-06 | 1.30E-06 | 7.11E-07 | -- | 1.07E-06 | 3.33E-07 | 5.16E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.42E-06 | 2.33E-06 | 1.28E-06 | -- | 3.36E-06 | 1.05E-06 | 1.62E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.27E-13 | 9.76E-14 | 5.35E-14 | -- | 4.02E-14 | 1.25E-14 | 1.94E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 9.57E-09 | 4.11E-09 | 2.25E-09 | -- | 3.39E-11 | 1.06E-11 | 1.63E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.10E-07 | 4.72E-08 | 2.58E-08 | -- | 4.86E-08 | 1.51E-08 | 2.34E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 6.58E-04 | 2.83E-04 | 1.55E-04 | -- | 1.17E-05 | 3.63E-06 | 5.62E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.90E-07 | 8.18E-08 | 4.48E-08 | -- | 3.37E-08 | 1.05E-08 | 1.62E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.05E-07 | 2.60E-07 | 1.43E-07 | -- | 1.07E-07 | 3.34E-08 | 5.17E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.91E-07 | 3.40E-07 | 1.86E-07 | -- | 2.80E-08 | 8.74E-09 | 1.35E-08 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.45E-12 | 5.86E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-12 | 1.29E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.62E-12 | 8.49E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-04 | 6.70E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-03 | 4.09E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-16 | 9.85E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.01E-15 | 2.21E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-13 | 1.18E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-15 | 7.16E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-14 | 1.35E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-09 | 8.61E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-12 | 2.00E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-13 | 1.14E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.57E-10 | 1.73E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-09 | 2.26E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.74E-08 | 2.88E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.23E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.98E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.16E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.80E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-06 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 7.36E-11 | 3.17E-11 | 7.27E-12 | -- | 5.72E-12 | 1.64E-12 | 2.53E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.45E-11 | 6.25E-12 | 1.44E-12 | -- | 1.64E-12 | 4.70E-13 | 7.25E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.10E-10 | 4.72E-11 | 1.08E-11 | -- | 8.53E-12 | 2.45E-12 | 3.78E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.12E-05 | 1.77E-05 | 4.07E-06 | -- | 2.24E-06 | 6.44E-07 | 9.92E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.84E-04 | 1.22E-04 | 2.81E-05 | -- | 3.31E-06 | 9.51E-07 | 1.47E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.26E-15 | 5.43E-16 | 1.25E-16 | -- | 9.81E-17 | 2.82E-17 | 4.35E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.52E-13 | 1.51E-13 | 3.48E-14 | -- | 1.50E-14 | 4.32E-15 | 6.66E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 7.21E-13 | 3.10E-13 | 7.12E-14 | -- | 2.80E-13 | 8.04E-14 | 1.24E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.13E-13 | 4.86E-14 | 1.12E-14 | -- | 4.39E-15 | 1.26E-15 | 1.95E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.74E-13 | 7.49E-14 | 1.72E-14 | -- | 1.35E-14 | 3.89E-15 | 5.99E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 9.46E-09 | 4.07E-09 | 9.34E-10 | -- | 3.67E-10 | 1.05E-10 | 1.63E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.93E-11 | 1.26E-11 | 2.89E-12 | -- | 9.09E-13 | 2.61E-13 | 4.03E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.46E-12 | 6.30E-13 | 1.45E-13 | -- | 5.69E-14 | 1.63E-14 | 2.52E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.71E-09 | 7.33E-10 | 1.68E-10 | -- | 8.61E-11 | 2.47E-11 | 3.81E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.09E-08 | 1.33E-08 | 3.05E-09 | -- | 1.20E-10 | 3.44E-11 | 5.31E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.42E-09 | 1.04E-09 | 2.39E-10 | -- | 1.03E-10 | 2.97E-11 | 4.58E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.98E-05 | 8.52E-06 | 1.96E-06 | -- | 7.70E-07 | 2.21E-07 | 3.41E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.62E-06 | 1.13E-06 | 2.59E-07 | -- | 3.05E-08 | 8.77E-09 | 1.35E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.79E-08 | 1.20E-08 | 2.76E-09 | -- | 1.08E-09 | 3.11E-10 | 4.80E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.50E-06 | 1.07E-06 | 2.47E-07 | -- | 2.91E-08 | 8.36E-09 | 1.29E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.54E-07 | 6.63E-08 | 1.52E-08 | -- | 5.99E-09 | 1.72E-09 | 2.65E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.58E-05 | 2.83E-05 | 6.50E-06 | -- | 3.58E-06 | 1.03E-06 | 1.58E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.85E-09 | 7.93E-10 | 1.82E-10 | -- | 2.87E-11 | 8.23E-12 | 1.27E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.94E-07 | 1.69E-07 | 3.89E-08 | -- | 1.38E-08 | 3.95E-09 | 6.09E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.20E-05 | 5.15E-06 | 1.18E-06 | -- | 4.65E-07 | 1.34E-07 | 2.06E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.13E-04 | 1.78E-04 | 4.08E-05 | -- | 9.64E-07 | 2.77E-07 | 4.27E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.78E-04 | 7.65E-05 | 1.76E-05 | -- | 3.46E-06 | 9.92E-07 | 1.53E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-05 | 4.30E-06 | 9.89E-07 | -- | 7.78E-07 | 2.23E-07 | 3.44E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.80E-05 | 7.72E-06 | 1.77E-06 | -- | 2.44E-06 | 7.01E-07 | 1.08E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 7.53E-13 | 3.24E-13 | 7.43E-14 | -- | 2.92E-14 | 8.40E-15 | 1.29E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.17E-08 | 1.36E-08 | 3.13E-09 | -- | 2.46E-11 | 7.07E-12 | 1.09E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.64E-07 | 1.56E-07 | 3.59E-08 | -- | 3.53E-08 | 1.01E-08 | 1.56E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.18E-03 | 9.37E-04 | 2.15E-04 | -- | 8.47E-06 | 2.43E-06 | 3.75E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.30E-07 | 2.71E-07 | 6.23E-08 | -- | 2.45E-08 | 7.03E-09 | 1.08E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.01E-06 | 8.62E-07 | 1.98E-07 | -- | 7.79E-08 | 2.24E-08 | 3.45E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.62E-06 | 1.13E-06 | 2.59E-07 | -- | 2.04E-08 | 5.85E-09 | 9.02E-09 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.02E-10 | 5.98E-10 | 5.37E-11 | 2.30E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-09 |
| Anthracene | 3.57E-11 | 5.30E-11 | 7.51E-14 | 1.87E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-10 |
| Fluorene | 4.02E-10 | 5.98E-10 | 7.14E-13 | 5.28E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.08E-06 | 1.05E-05 | 1.35E-06 | 1.55E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.58E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 6.11E-05 | 4.86E-05 | 1.00E-05 | 2.94E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.63E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.48E-14 | 6.60E-14 | 3.84E-13 | 2.79E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.97E-13 |
| Bromoform | 1.47E-11 | 2.18E-11 | 1.49E-11 | 1.89E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.19E-11 |
| Carbon Tetrachloride | 1.73E-11 | 2.52E-11 | 2.35E-10 | 2.09E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.80E-10 |
| Chloroform | 7.76E-12 | 1.15E-11 | 3.90E-11 | 2.70E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.85E-11 |
| Trichlorofluoromethane (FREON 11) | 6.18E-12 | 9.10E-12 | 4.85E-11 | 3.94E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.42E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.55E-08 | 2.31E-08 | 3.40E-08 | 1.77E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.78E-08 |
| 1,2,4-Trichlorobenzene | 1.40E-10 | 2.08E-10 | 7.78E-11 | 6.07E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.72E-10 |
| 1,2-Dichlorobenzene | 1.62E-11 | 2.37E-11 | 1.23E-10 | 1.44E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-10 |
| Hexachlorobenzene | 1.45E-09 | 2.15E-09 | 1.49E-09 | 5.07E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.85E-09 |
| Pentachlorobenzene | 3.10E-08 | 4.62E-08 | 1.95E-09 | 8.84E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-07 |
| Pentachlorophenol | 1.01E-07 | 3.97E-09 | 1.36E-07 | 5.61E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 3.42E-05 | 2.37E-05 | 2.04E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.16E-05 |
| Arsenic | 4.14E-06 | 6.23E-07 | 7.19E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.89E-06 |
| Barium | 5.08E-08 | 3.37E-08 | 1.44E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-07 |
| Beryllium | 6.05E-07 | 2.42E-07 | 1.28E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-06 |
| Boron | 1.08E-05 | 1.31E-05 | 1.06E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-05 |
| Cadmium | 2.45E-04 | 3.09E-04 | 1.44E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.75E-04 |
| Chromium (Total) | 4.21E-09 | 3.38E-10 | 2.85E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.45E-09 |
| Chromium VI | 8.99E-07 | 7.22E-08 | 6.08E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-06 |
| Cobalt | 1.36E-05 | 3.89E-06 | 2.87E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-05 |
| Lead | 2.14E-04 | 2.11E-04 | 1.28E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-03 |
| Mercury - Inorganic | 8.41E-05 | 9.69E-05 | 2.20E-05 | 7.43E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-04 |
| Methyl Mercury | 1.55E-05 | 1.11E-05 | 3.40E-06 | 3.14E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.97E-05 |
| Nickel | 1.58E-05 | 6.28E-06 | 4.93E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.42E-05 |
| Phosphorus | 7.50E-11 | 9.90E-11 | 9.04E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-10 |
| Selenium | 2.71E-07 | 2.32E-08 | 2.39E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.45E-07 |
| Silver | 3.05E-06 | 1.88E-06 | 1.25E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.67E-06 |
| Thallium | 1.34E-03 | 7.03E-05 | 2.99E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-03 |
| Tin | 3.00E-07 | 2.14E-07 | 1.30E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-06 |
| Vanadium | 5.11E-07 | 2.50E-07 | 2.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-06 |
| Zinc | 8.19E-06 | 9.56E-06 | 8.10E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.99E-05 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.13E-12 | 2.64E-12 | 1.44E-12 | -- | 2.17E-12 | 6.77E-13 | 1.05E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.21E-12 | 5.20E-13 | 2.85E-13 | -- | 6.21E-13 | 1.94E-13 | 2.99E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.15E-12 | 3.93E-12 | 2.15E-12 | -- | 3.24E-12 | 1.01E-12 | 1.56E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.43E-06 | 1.48E-06 | 8.08E-07 | -- | 8.51E-07 | 2.65E-07 | 4.10E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.08E-05 | 8.92E-06 | 4.89E-06 | -- | 1.10E-06 | 3.44E-07 | 5.31E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.05E-16 | 4.52E-17 | 2.48E-17 | -- | 3.73E-17 | 1.16E-17 | 1.80E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.93E-14 | 1.26E-14 | 6.90E-15 | -- | 5.71E-15 | 1.78E-15 | 2.75E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.00E-14 | 2.58E-14 | 1.41E-14 | -- | 1.06E-13 | 3.31E-14 | 5.12E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 9.42E-15 | 4.05E-15 | 2.22E-15 | -- | 1.67E-15 | 5.20E-16 | 8.04E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.45E-14 | 6.24E-15 | 3.42E-15 | -- | 5.14E-15 | 1.60E-15 | 2.48E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 7.88E-10 | 3.39E-10 | 1.85E-10 | -- | 1.39E-10 | 4.35E-11 | 6.72E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.44E-12 | 1.05E-12 | 5.74E-13 | -- | 3.45E-13 | 1.08E-13 | 1.66E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.22E-13 | 5.24E-14 | 2.87E-14 | -- | 2.16E-14 | 6.73E-15 | 1.04E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.42E-10 | 6.11E-11 | 3.35E-11 | -- | 3.27E-11 | 1.02E-11 | 1.58E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.57E-09 | 1.11E-09 | 6.05E-10 | -- | 4.55E-11 | 1.42E-11 | 2.19E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.01E-10 | 8.66E-11 | 4.74E-11 | -- | 3.92E-11 | 1.22E-11 | 1.89E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.45E-06 | 6.22E-07 | 3.41E-07 | -- | 2.56E-07 | 7.99E-08 | 1.23E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.91E-07 | 8.23E-08 | 4.51E-08 | -- | 1.02E-08 | 3.17E-09 | 4.90E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.04E-09 | 8.76E-10 | 4.80E-10 | -- | 3.61E-10 | 1.12E-10 | 1.74E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.82E-07 | 7.84E-08 | 4.29E-08 | -- | 9.69E-09 | 3.02E-09 | 4.67E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.13E-08 | 4.84E-09 | 2.65E-09 | -- | 1.99E-09 | 6.22E-10 | 9.61E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.81E-06 | 2.07E-06 | 1.13E-06 | -- | 1.19E-06 | 3.71E-07 | 5.74E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.35E-10 | 5.79E-11 | 3.17E-11 | -- | 9.54E-12 | 2.98E-12 | 4.60E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.88E-08 | 1.24E-08 | 6.77E-09 | -- | 4.58E-09 | 1.43E-09 | 2.21E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.74E-07 | 3.76E-07 | 2.06E-07 | -- | 1.55E-07 | 4.83E-08 | 7.46E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.02E-05 | 1.30E-05 | 7.11E-06 | -- | 3.21E-07 | 1.00E-07 | 1.55E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.72E-05 | 7.41E-06 | 4.06E-06 | -- | 1.53E-06 | 4.76E-07 | 7.36E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 7.31E-07 | 3.14E-07 | 1.72E-07 | -- | 2.59E-07 | 8.07E-08 | 1.25E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.64E-07 | 3.09E-07 | -- | 8.13E-07 | 2.53E-07 | 3.92E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.50E-14 | 2.36E-14 | 1.29E-14 | -- | 9.73E-15 | 3.03E-15 | 4.69E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.32E-09 | 9.95E-10 | 5.45E-10 | -- | 8.20E-12 | 2.56E-12 | 3.95E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.66E-08 | 1.14E-08 | 6.25E-09 | -- | 1.18E-08 | 3.66E-09 | 5.67E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.59E-04 | 6.85E-05 | 3.75E-05 | -- | 2.82E-06 | 8.79E-07 | 1.36E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.60E-08 | 1.98E-08 | 1.08E-08 | -- | 8.15E-09 | 2.54E-09 | 3.93E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.47E-07 | 6.30E-08 | 3.45E-08 | -- | 2.59E-08 | 8.09E-09 | 1.25E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.92E-07 | 8.23E-08 | 4.51E-08 | -- | 6.78E-09 | 2.11E-09 | 3.27E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-12 | 1.62E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-13 | 3.56E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-12 | 2.34E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-04 | 1.85E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-03 | 1.06E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.97E-17 | 2.72E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-15 | 6.10E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.41E-14 | 3.25E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-15 | 1.97E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-15 | 3.72E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.13E-10 | 2.38E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.43E-13 | 5.52E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.41E-14 | 3.16E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-10 | 4.77E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-09 | 6.23E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-08 | 1.15E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.61E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.09E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.53E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.91E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-07 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.03E-11 | 8.74E-12 | 2.01E-12 | -- | 1.58E-12 | 4.53E-13 | 6.99E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.01E-12 | 1.72E-12 | 3.96E-13 | -- | 4.52E-13 | 1.30E-13 | 2.00E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.03E-11 | 1.30E-11 | 2.99E-12 | -- | 2.35E-12 | 6.76E-13 | 1.04E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.14E-05 | 4.89E-06 | 1.12E-06 | -- | 6.18E-07 | 1.78E-07 | 2.74E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 6.88E-05 | 2.96E-05 | 6.79E-06 | -- | 8.01E-07 | 2.30E-07 | 3.55E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.49E-16 | 1.50E-16 | 3.44E-17 | -- | 2.71E-17 | 7.78E-18 | 1.20E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.71E-14 | 4.17E-14 | 9.59E-15 | -- | 4.15E-15 | 1.19E-15 | 1.84E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.99E-13 | 8.55E-14 | 1.96E-14 | -- | 7.73E-14 | 2.22E-14 | 3.42E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.12E-14 | 1.34E-14 | 3.08E-15 | -- | 1.21E-15 | 3.48E-16 | 5.37E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.81E-14 | 2.07E-14 | 4.75E-15 | -- | 3.73E-15 | 1.07E-15 | 1.65E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.61E-09 | 1.12E-09 | 2.58E-10 | -- | 1.01E-10 | 2.91E-11 | 4.49E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.07E-12 | 3.47E-12 | 7.98E-13 | -- | 2.51E-13 | 7.21E-14 | 1.11E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.04E-13 | 1.74E-13 | 3.99E-14 | -- | 1.57E-14 | 4.51E-15 | 6.95E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.71E-10 | 2.02E-10 | 4.65E-11 | -- | 2.38E-11 | 6.83E-12 | 1.05E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.52E-09 | 3.66E-09 | 8.41E-10 | -- | 3.31E-11 | 9.50E-12 | 1.46E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 6.67E-10 | 2.87E-10 | 6.59E-11 | -- | 2.85E-11 | 8.19E-12 | 1.26E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.79E-06 | 2.06E-06 | 4.74E-07 | -- | 1.86E-07 | 5.35E-08 | 8.25E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.34E-07 | 2.73E-07 | 6.27E-08 | -- | 7.39E-09 | 2.12E-09 | 3.27E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.75E-09 | 2.90E-09 | 6.67E-10 | -- | 2.62E-10 | 7.53E-11 | 1.16E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 6.04E-07 | 2.60E-07 | 5.97E-08 | -- | 7.04E-09 | 2.02E-09 | 3.12E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.73E-08 | 1.60E-08 | 3.69E-09 | -- | 1.45E-09 | 4.16E-10 | 6.42E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.59E-05 | 6.85E-06 | 1.57E-06 | -- | 8.66E-07 | 2.49E-07 | 3.84E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.47E-10 | 1.92E-10 | 4.41E-11 | -- | 6.94E-12 | 1.99E-12 | 3.07E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.53E-08 | 4.10E-08 | 9.41E-09 | -- | 3.33E-09 | 9.56E-10 | 1.47E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.90E-06 | 1.25E-06 | 2.86E-07 | -- | 1.13E-07 | 3.23E-08 | 4.98E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.00E-04 | 4.30E-05 | 9.88E-06 | -- | 2.33E-07 | 6.70E-08 | 1.03E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.71E-05 | 2.46E-05 | 5.64E-06 | -- | 1.11E-06 | 3.19E-07 | 4.91E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.42E-06 | 1.04E-06 | 2.39E-07 | -- | 1.88E-07 | 5.40E-08 | 8.33E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.34E-06 | 1.87E-06 | 4.29E-07 | -- | 5.91E-07 | 1.70E-07 | 2.62E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.82E-13 | 7.83E-14 | 1.80E-14 | -- | 7.08E-15 | 2.03E-15 | 3.13E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.67E-09 | 3.30E-09 | 7.58E-10 | -- | 5.96E-12 | 1.71E-12 | 2.64E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.80E-08 | 3.78E-08 | 8.69E-09 | -- | 8.55E-09 | 2.45E-09 | 3.78E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.28E-04 | 2.27E-04 | 5.21E-05 | -- | 2.05E-06 | 5.89E-07 | 9.08E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.52E-07 | 6.56E-08 | 1.51E-08 | -- | 5.92E-09 | 1.70E-09 | 2.62E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.85E-07 | 2.09E-07 | 4.80E-08 | -- | 1.89E-08 | 5.42E-09 | 8.35E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.35E-07 | 2.73E-07 | 6.27E-08 | -- | 4.93E-09 | 1.42E-09 | 2.18E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.11E-10 | 1.65E-10 | 1.48E-11 | 6.34E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.88E-10 |
| Anthracene | 9.85E-12 | 1.46E-11 | 2.07E-14 | 9.43E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-11 |
| Fluorene | 1.11E-10 | 1.65E-10 | 1.97E-13 | 2.66E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.27E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.96E-06 | 2.90E-06 | 3.74E-07 | 7.79E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.62E-05 | 1.18E-05 | 2.42E-06 | 1.48E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.25E-14 | 1.82E-14 | 1.06E-13 | 1.41E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-13 |
| Bromoform | 4.05E-12 | 6.02E-12 | 4.10E-12 | 9.50E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-11 |
| Carbon Tetrachloride | 4.86E-12 | 6.96E-12 | 6.49E-11 | 1.06E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.73E-11 |
| Chloroform | 2.15E-12 | 3.17E-12 | 1.08E-11 | 1.36E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-11 |
| Trichlorofluoromethane (FREON 11) | 1.72E-12 | 2.51E-12 | 1.34E-11 | 1.99E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.29E-09 | 6.38E-09 | 9.38E-09 | 8.91E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-08 |
| 1,2,4-Trichlorobenzene | 3.86E-11 | 5.73E-11 | 2.15E-11 | 3.06E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-10 |
| 1,2-Dichlorobenzene | 4.52E-12 | 6.54E-12 | 3.40E-11 | 7.27E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-11 |
| Hexachlorobenzene | 4.03E-10 | 5.92E-10 | 4.11E-10 | 2.56E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-09 |
| Pentachlorobenzene | 8.57E-09 | 1.27E-08 | 5.37E-10 | 4.46E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-08 |
| Pentachlorophenol | 5.02E-08 | 1.10E-09 | 3.75E-08 | 2.83E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 8.34E-06 | 5.75E-06 | 4.93E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-05 |
| Arsenic | 1.02E-06 | 1.51E-07 | 1.74E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-06 |
| Barium | 1.24E-08 | 8.17E-09 | 3.47E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.17E-08 |
| Beryllium | 1.48E-07 | 5.86E-08 | 3.11E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-06 |
| Boron | 2.62E-06 | 3.16E-06 | 2.56E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.10E-06 |
| Cadmium | 5.94E-05 | 7.48E-05 | 3.50E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-04 |
| Chromium (Total) | 1.04E-09 | 8.19E-11 | 6.89E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-09 |
| Chromium VI | 2.21E-07 | 1.75E-08 | 1.47E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-07 |
| Cobalt | 3.34E-06 | 9.42E-07 | 6.96E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.97E-06 |
| Lead | 5.20E-05 | 5.11E-05 | 3.09E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-04 |
| Mercury - Inorganic | 2.89E-05 | 3.11E-05 | 7.05E-06 | 3.74E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-04 |
| Methyl Mercury | 5.19E-06 | 2.68E-06 | 8.23E-07 | 1.58E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-05 |
| Nickel | 3.87E-06 | 1.52E-06 | 1.19E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-05 |
| Phosphorus | 1.82E-11 | 2.39E-11 | 2.19E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-11 |
| Selenium | 6.66E-08 | 5.62E-09 | 5.79E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.45E-08 |
| Silver | 7.45E-07 | 4.56E-07 | 3.02E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-06 |
| Thallium | 3.30E-04 | 1.70E-05 | 7.24E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-03 |
| Tin | 7.32E-08 | 5.19E-08 | 3.14E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-07 |
| Vanadium | 1.25E-07 | 6.05E-08 | 5.00E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.65E-07 |
| Zinc | 1.99E-06 | 2.31E-06 | 1.96E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.24E-06 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.90E-12 | 3.83E-12 | 2.10E-12 | -- | 3.15E-12 | 9.83E-13 | 1.52E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.76E-12 | 7.55E-13 | 4.14E-13 | -- | 9.02E-13 | 2.81E-13 | 4.35E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.33E-11 | 5.71E-12 | 3.13E-12 | -- | 4.70E-12 | 1.47E-12 | 2.27E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.97E-06 | 2.14E-06 | 1.17E-06 | -- | 1.23E-06 | 3.84E-07 | 5.94E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.65E-05 | 1.57E-05 | 8.59E-06 | -- | 1.94E-06 | 6.04E-07 | 9.34E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.53E-16 | 6.57E-17 | 3.60E-17 | -- | 5.41E-17 | 1.69E-17 | 2.61E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.25E-14 | 1.83E-14 | 1.00E-14 | -- | 8.29E-15 | 2.58E-15 | 3.99E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 8.71E-14 | 3.75E-14 | 2.05E-14 | -- | 1.54E-13 | 4.81E-14 | 7.43E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.37E-14 | 5.88E-15 | 3.22E-15 | -- | 2.42E-15 | 7.55E-16 | 1.17E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.11E-14 | 9.05E-15 | 4.96E-15 | -- | 7.46E-15 | 2.32E-15 | 3.59E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.14E-09 | 4.92E-10 | 2.69E-10 | -- | 2.02E-10 | 6.31E-11 | 9.76E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.54E-12 | 1.52E-12 | 8.33E-13 | -- | 5.01E-13 | 1.56E-13 | 2.42E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.77E-13 | 7.61E-14 | 4.17E-14 | -- | 3.13E-14 | 9.77E-15 | 1.51E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.06E-10 | 8.87E-11 | 4.86E-11 | -- | 4.75E-11 | 1.48E-11 | 2.29E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.73E-09 | 1.60E-09 | 8.79E-10 | -- | 6.61E-11 | 2.06E-11 | 3.18E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.92E-10 | 1.26E-10 | 6.89E-11 | -- | 5.70E-11 | 1.78E-11 | 2.75E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.55E-06 | 1.10E-06 | 6.00E-07 | -- | 4.51E-07 | 1.41E-07 | 2.18E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.37E-07 | 1.45E-07 | 7.94E-08 | -- | 1.79E-08 | 5.58E-09 | 8.63E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.59E-09 | 1.54E-09 | 8.45E-10 | -- | 6.36E-10 | 1.98E-10 | 3.06E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.21E-07 | 1.38E-07 | 7.56E-08 | -- | 1.71E-08 | 5.32E-09 | 8.22E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.98E-08 | 8.53E-09 | 4.67E-09 | -- | 3.51E-09 | 1.10E-09 | 1.69E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.47E-06 | 3.64E-06 | 1.99E-06 | -- | 2.10E-06 | 6.54E-07 | 1.01E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.37E-10 | 1.02E-10 | 5.59E-11 | -- | 1.68E-11 | 5.24E-12 | 8.11E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.07E-08 | 2.18E-08 | 1.19E-08 | -- | 8.07E-09 | 2.52E-09 | 3.89E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.54E-06 | 6.62E-07 | 3.63E-07 | -- | 2.73E-07 | 8.50E-08 | 1.31E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.32E-05 | 2.29E-05 | 1.25E-05 | -- | 5.65E-07 | 1.76E-07 | 2.72E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.56E-05 | 1.10E-05 | 6.03E-06 | -- | 2.27E-06 | 7.07E-07 | 1.09E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.29E-06 | 5.53E-07 | 3.03E-07 | -- | 4.56E-07 | 1.42E-07 | 2.20E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.31E-06 | 9.93E-07 | 5.44E-07 | -- | 1.43E-06 | 4.46E-07 | 6.90E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 9.69E-14 | 4.16E-14 | 2.28E-14 | -- | 1.71E-14 | 5.35E-15 | 8.27E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.08E-09 | 1.75E-09 | 9.61E-10 | -- | 1.44E-11 | 4.50E-12 | 6.96E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.68E-08 | 2.01E-08 | 1.10E-08 | -- | 2.07E-08 | 6.46E-09 | 9.98E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.81E-04 | 1.21E-04 | 6.61E-05 | -- | 4.97E-06 | 1.55E-06 | 2.39E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.11E-08 | 3.48E-08 | 1.91E-08 | -- | 1.44E-08 | 4.47E-09 | 6.92E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.58E-07 | 1.11E-07 | 6.07E-08 | -- | 4.57E-08 | 1.42E-08 | 2.20E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.37E-07 | 1.45E-07 | 7.94E-08 | -- | 1.19E-08 | 3.72E-09 | 5.76E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.99E-12 | 2.35E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.31E-13 | 5.17E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.45E-12 | 3.40E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-04 | 2.69E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-03 | 1.85E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-17 | 3.95E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-15 | 8.85E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.95E-14 | 4.71E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-15 | 2.87E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.54E-15 | 5.40E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-09 | 3.45E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-12 | 8.01E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-13 | 4.59E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-10 | 6.93E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-09 | 9.05E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-08 | 1.71E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.06E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.94E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.12E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.26E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.88E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.96E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.41E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.82E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-07 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.95E-11 | 1.27E-11 | 2.91E-12 | -- | 2.29E-12 | 6.58E-13 | 1.01E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.82E-12 | 2.50E-12 | 5.75E-13 | -- | 6.56E-13 | 1.88E-13 | 2.90E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.40E-11 | 1.89E-11 | 4.35E-12 | -- | 3.42E-12 | 9.82E-13 | 1.51E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.65E-05 | 7.08E-06 | 1.63E-06 | -- | 8.96E-07 | 2.57E-07 | 3.97E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.21E-04 | 5.20E-05 | 1.19E-05 | -- | 1.41E-06 | 4.05E-07 | 6.24E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.06E-16 | 2.18E-16 | 5.00E-17 | -- | 3.93E-17 | 1.13E-17 | 1.74E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.41E-13 | 6.06E-14 | 1.39E-14 | -- | 6.02E-15 | 1.73E-15 | 2.67E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.89E-13 | 1.24E-13 | 2.85E-14 | -- | 1.12E-13 | 3.22E-14 | 4.96E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.53E-14 | 1.95E-14 | 4.48E-15 | -- | 1.76E-15 | 5.05E-16 | 7.79E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.98E-14 | 3.00E-14 | 6.89E-15 | -- | 5.42E-15 | 1.56E-15 | 2.40E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.79E-09 | 1.63E-09 | 3.74E-10 | -- | 1.47E-10 | 4.23E-11 | 6.52E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.17E-11 | 5.04E-12 | 1.16E-12 | -- | 3.64E-13 | 1.05E-13 | 1.61E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 5.87E-13 | 2.52E-13 | 5.79E-14 | -- | 2.28E-14 | 6.54E-15 | 1.01E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.83E-10 | 2.94E-10 | 6.75E-11 | -- | 3.45E-11 | 9.91E-12 | 1.53E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.24E-08 | 5.32E-09 | 1.22E-09 | -- | 4.80E-11 | 1.38E-11 | 2.13E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 9.69E-10 | 4.17E-10 | 9.57E-11 | -- | 4.14E-11 | 1.19E-11 | 1.83E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 8.45E-06 | 3.63E-06 | 8.34E-07 | -- | 3.28E-07 | 9.42E-08 | 1.45E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.12E-06 | 4.80E-07 | 1.10E-07 | -- | 1.30E-08 | 3.74E-09 | 5.77E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.19E-08 | 5.11E-09 | 1.17E-09 | -- | 4.62E-10 | 1.33E-10 | 2.05E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.06E-06 | 4.57E-07 | 1.05E-07 | -- | 1.24E-08 | 3.56E-09 | 5.49E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.58E-08 | 2.83E-08 | 6.50E-09 | -- | 2.55E-09 | 7.34E-10 | 1.13E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.81E-05 | 1.21E-05 | 2.77E-06 | -- | 1.53E-06 | 4.38E-07 | 6.76E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 7.87E-10 | 3.38E-10 | 7.77E-11 | -- | 1.22E-11 | 3.51E-12 | 5.41E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.68E-07 | 7.22E-08 | 1.66E-08 | -- | 5.87E-09 | 1.69E-09 | 2.60E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.10E-06 | 2.19E-06 | 5.04E-07 | -- | 1.98E-07 | 5.69E-08 | 8.78E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.76E-04 | 7.57E-05 | 1.74E-05 | -- | 4.11E-07 | 1.18E-07 | 1.82E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.49E-05 | 3.65E-05 | 8.38E-06 | -- | 1.65E-06 | 4.73E-07 | 7.30E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.26E-06 | 1.83E-06 | 4.21E-07 | -- | 3.31E-07 | 9.52E-08 | 1.47E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.65E-06 | 3.29E-06 | 7.56E-07 | -- | 1.04E-06 | 2.99E-07 | 4.61E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.21E-13 | 1.38E-13 | 3.17E-14 | -- | 1.25E-14 | 3.58E-15 | 5.52E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.35E-08 | 5.81E-09 | 1.34E-09 | -- | 1.05E-11 | 3.02E-12 | 4.65E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.55E-07 | 6.67E-08 | 1.53E-08 | -- | 1.51E-08 | 4.32E-09 | 6.67E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 9.29E-04 | 4.00E-04 | 9.18E-05 | -- | 3.61E-06 | 1.04E-06 | 1.60E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.69E-07 | 1.15E-07 | 2.65E-08 | -- | 1.04E-08 | 3.00E-09 | 4.62E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 8.55E-07 | 3.67E-07 | 8.44E-08 | -- | 3.32E-08 | 9.54E-09 | 1.47E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.12E-06 | 4.81E-07 | 1.10E-07 | -- | 8.69E-09 | 2.49E-09 | 3.85E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.61E-10 | 2.39E-10 | 2.15E-11 | 9.21E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.64E-10 |
| Anthracene | 1.43E-11 | 2.12E-11 | 3.01E-14 | 1.41E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-11 |
| Fluorene | 1.61E-10 | 2.40E-10 | 2.86E-13 | 3.99E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.84E-06 | 4.20E-06 | 5.41E-07 | 1.17E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.87E-05 | 2.07E-05 | 4.27E-06 | 2.22E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.81E-14 | 2.64E-14 | 1.54E-13 | 2.11E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-13 |
| Bromoform | 5.87E-12 | 8.74E-12 | 5.95E-12 | 1.43E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-11 |
| Carbon Tetrachloride | 7.07E-12 | 1.01E-11 | 9.42E-11 | 1.58E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-10 |
| Chloroform | 3.12E-12 | 4.60E-12 | 1.56E-11 | 2.04E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-11 |
| Trichlorofluoromethane (FREON 11) | 2.50E-12 | 3.64E-12 | 1.94E-11 | 2.98E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.23E-09 | 9.26E-09 | 1.36E-08 | 1.34E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-08 |
| 1,2,4-Trichlorobenzene | 5.60E-11 | 8.32E-11 | 3.12E-11 | 4.59E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-10 |
| 1,2-Dichlorobenzene | 6.57E-12 | 9.50E-12 | 4.94E-11 | 1.09E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-11 |
| Hexachlorobenzene | 5.85E-10 | 8.60E-10 | 5.96E-10 | 3.83E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-09 |
| Pentachlorobenzene | 1.24E-08 | 1.85E-08 | 7.80E-10 | 6.68E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.07E-08 |
| Pentachlorophenol | 7.53E-08 | 1.59E-09 | 5.44E-08 | 4.24E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.53E-05 | 1.01E-05 | 8.69E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-05 |
| Arsenic | 1.93E-06 | 2.66E-07 | 3.07E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.95E-06 |
| Barium | 2.29E-08 | 1.44E-08 | 6.12E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-08 |
| Beryllium | 2.77E-07 | 1.03E-07 | 5.47E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-06 |
| Boron | 4.70E-06 | 5.57E-06 | 4.51E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-05 |
| Cadmium | 1.06E-04 | 1.32E-04 | 6.16E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.89E-04 |
| Chromium (Total) | 1.97E-09 | 1.44E-10 | 1.21E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-09 |
| Chromium VI | 4.20E-07 | 3.08E-08 | 2.59E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.20E-07 |
| Cobalt | 6.28E-06 | 1.66E-06 | 1.23E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-05 |
| Lead | 9.42E-05 | 9.00E-05 | 5.44E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.60E-04 |
| Mercury - Inorganic | 4.37E-05 | 4.62E-05 | 1.05E-05 | 5.61E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-04 |
| Methyl Mercury | 8.51E-06 | 4.71E-06 | 1.45E-06 | 2.37E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-05 |
| Nickel | 7.23E-06 | 2.68E-06 | 2.10E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-05 |
| Phosphorus | 3.24E-11 | 4.22E-11 | 3.85E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.89E-11 |
| Selenium | 1.26E-07 | 9.90E-09 | 1.02E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-07 |
| Silver | 1.38E-06 | 8.04E-07 | 5.32E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-06 |
| Thallium | 6.28E-04 | 3.00E-05 | 1.28E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-03 |
| Tin | 1.35E-07 | 9.13E-08 | 5.53E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.60E-07 |
| Vanadium | 2.33E-07 | 1.07E-07 | 8.80E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-06 |
| Zinc | 3.57E-06 | 4.07E-06 | 3.45E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-05 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.02E-12 | 1.73E-12 | 9.47E-13 | -- | 1.42E-12 | 4.44E-13 | 6.87E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.94E-13 | 3.41E-13 | 1.87E-13 | -- | 4.08E-13 | 1.27E-13 | 1.96E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 6.00E-12 | 2.58E-12 | 1.41E-12 | -- | 2.12E-12 | 6.62E-13 | 1.02E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.25E-06 | 9.69E-07 | 5.31E-07 | -- | 5.59E-07 | 1.74E-07 | 2.69E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.31E-05 | 5.63E-06 | 3.09E-06 | -- | 6.96E-07 | 2.17E-07 | 3.35E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 6.90E-17 | 2.97E-17 | 1.62E-17 | -- | 2.44E-17 | 7.62E-18 | 1.18E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.92E-14 | 8.26E-15 | 4.53E-15 | -- | 3.74E-15 | 1.17E-15 | 1.80E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.94E-14 | 1.69E-14 | 9.27E-15 | -- | 6.97E-14 | 2.17E-14 | 3.36E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 6.18E-15 | 2.66E-15 | 1.45E-15 | -- | 1.09E-15 | 3.41E-16 | 5.27E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.51E-15 | 4.09E-15 | 2.24E-15 | -- | 3.37E-15 | 1.05E-15 | 1.62E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 5.17E-10 | 2.22E-10 | 1.22E-10 | -- | 9.15E-11 | 2.85E-11 | 4.41E-11 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.60E-12 | 6.87E-13 | 3.76E-13 | -- | 2.26E-13 | 7.06E-14 | 1.09E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 8.00E-14 | 3.44E-14 | 1.88E-14 | -- | 1.42E-14 | 4.41E-15 | 6.83E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.32E-11 | 4.01E-11 | 2.19E-11 | -- | 2.14E-11 | 6.69E-12 | 1.03E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.69E-09 | 7.25E-10 | 3.97E-10 | -- | 2.99E-11 | 9.31E-12 | 1.44E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.32E-10 | 5.68E-11 | 3.11E-11 | -- | 2.57E-11 | 8.02E-12 | 1.24E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.13E-07 | 3.92E-07 | 2.15E-07 | -- | 1.62E-07 | 5.04E-08 | 7.79E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.21E-07 | 5.19E-08 | 2.84E-08 | -- | 6.41E-09 | 2.00E-09 | 3.09E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.28E-09 | 5.52E-10 | 3.03E-10 | -- | 2.27E-10 | 7.09E-11 | 1.10E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.15E-07 | 4.95E-08 | 2.71E-08 | -- | 6.11E-09 | 1.90E-09 | 2.95E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.10E-09 | 3.05E-09 | 1.67E-09 | -- | 1.26E-09 | 3.92E-10 | 6.06E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.03E-06 | 1.30E-06 | 7.14E-07 | -- | 7.51E-07 | 2.34E-07 | 3.62E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.50E-11 | 3.65E-11 | 2.00E-11 | -- | 6.02E-12 | 1.88E-12 | 2.90E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.81E-08 | 7.79E-09 | 4.27E-09 | -- | 2.89E-09 | 9.00E-10 | 1.39E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.51E-07 | 2.37E-07 | 1.30E-07 | -- | 9.76E-08 | 3.04E-08 | 4.70E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.91E-05 | 8.19E-06 | 4.49E-06 | -- | 2.02E-07 | 6.31E-08 | 9.75E-08 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.55E-05 | 6.65E-06 | 3.65E-06 | -- | 1.37E-06 | 4.27E-07 | 6.60E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.61E-07 | 1.98E-07 | 1.09E-07 | -- | 1.63E-07 | 5.09E-08 | 7.87E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.27E-07 | 3.55E-07 | 1.95E-07 | -- | 5.12E-07 | 1.60E-07 | 2.47E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.47E-14 | 1.49E-14 | 8.16E-15 | -- | 6.14E-15 | 1.91E-15 | 2.96E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.46E-09 | 6.28E-10 | 3.44E-10 | -- | 5.17E-12 | 1.61E-12 | 2.49E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.67E-08 | 7.20E-09 | 3.94E-09 | -- | 7.41E-09 | 2.31E-09 | 3.57E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.00E-04 | 4.32E-05 | 2.36E-05 | -- | 1.78E-06 | 5.54E-07 | 8.57E-07 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.90E-08 | 1.25E-08 | 6.84E-09 | -- | 5.14E-09 | 1.60E-09 | 2.48E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.24E-08 | 3.97E-08 | 2.18E-08 | -- | 1.64E-08 | 5.10E-09 | 7.89E-09 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.21E-07 | 5.19E-08 | 2.84E-08 | -- | 4.28E-09 | 1.33E-09 | 2.06E-09 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Project Alone Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-12 | 1.06E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-13 | 2.34E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-12 | 1.54E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-04 | 1.22E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-04 | 7.40E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-17 | 1.78E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-15 | 4.00E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-14 | 2.13E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.03E-16 | 1.30E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-15 | 2.44E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.34E-10 | 1.56E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.53E-13 | 3.62E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-14 | 2.07E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-10 | 3.13E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-09 | 4.09E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-08 | 1.09E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.40E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.54E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.87E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.12E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-07 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.33E-11 | 5.73E-12 | 1.32E-12 | -- | 1.04E-12 | 2.97E-13 | 4.59E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.63E-12 | 1.13E-12 | 2.60E-13 | -- | 2.96E-13 | 8.51E-14 | 1.31E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.99E-11 | 8.55E-12 | 1.96E-12 | -- | 1.54E-12 | 4.44E-13 | 6.84E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 7.47E-06 | 3.21E-06 | 7.38E-07 | -- | 4.06E-07 | 1.17E-07 | 1.80E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.34E-05 | 1.87E-05 | 4.29E-06 | -- | 5.06E-07 | 1.45E-07 | 2.24E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.29E-16 | 9.83E-17 | 2.26E-17 | -- | 1.78E-17 | 5.10E-18 | 7.86E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.37E-14 | 2.74E-14 | 6.29E-15 | -- | 2.72E-15 | 7.81E-16 | 1.20E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.30E-13 | 5.61E-14 | 1.29E-14 | -- | 5.07E-14 | 1.45E-14 | 2.24E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.05E-14 | 8.80E-15 | 2.02E-15 | -- | 7.95E-16 | 2.28E-16 | 3.52E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.15E-14 | 1.36E-14 | 3.11E-15 | -- | 2.45E-15 | 7.03E-16 | 1.08E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.71E-09 | 7.36E-10 | 1.69E-10 | -- | 6.65E-11 | 1.91E-11 | 2.94E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.30E-12 | 2.28E-12 | 5.23E-13 | -- | 1.65E-13 | 4.73E-14 | 7.29E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.65E-13 | 1.14E-13 | 2.62E-14 | -- | 1.03E-14 | 2.96E-15 | 4.56E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.09E-10 | 1.33E-10 | 3.05E-11 | -- | 1.56E-11 | 4.48E-12 | 6.90E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.59E-09 | 2.40E-09 | 5.52E-10 | -- | 2.17E-11 | 6.23E-12 | 9.61E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.38E-10 | 1.88E-10 | 4.32E-11 | -- | 1.87E-11 | 5.37E-12 | 8.28E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.02E-06 | 1.30E-06 | 2.99E-07 | -- | 1.17E-07 | 3.37E-08 | 5.20E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.00E-07 | 1.72E-07 | 3.95E-08 | -- | 4.66E-09 | 1.34E-09 | 2.06E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.26E-09 | 1.83E-09 | 4.21E-10 | -- | 1.65E-10 | 4.75E-11 | 7.32E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.81E-07 | 1.64E-07 | 3.77E-08 | -- | 4.44E-09 | 1.28E-09 | 1.97E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.35E-08 | 1.01E-08 | 2.32E-09 | -- | 9.14E-10 | 2.62E-10 | 4.05E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.00E-05 | 4.32E-06 | 9.92E-07 | -- | 5.46E-07 | 1.57E-07 | 2.42E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.82E-10 | 1.21E-10 | 2.78E-11 | -- | 4.37E-12 | 1.26E-12 | 1.94E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.01E-08 | 2.58E-08 | 5.93E-09 | -- | 2.10E-09 | 6.03E-10 | 9.30E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.83E-06 | 7.85E-07 | 1.80E-07 | -- | 7.10E-08 | 2.04E-08 | 3.14E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.31E-05 | 2.71E-05 | 6.23E-06 | -- | 1.47E-07 | 4.22E-08 | 6.51E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.13E-05 | 2.20E-05 | 5.07E-06 | -- | 9.96E-07 | 2.86E-07 | 4.41E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-06 | 6.57E-07 | 1.51E-07 | -- | 1.19E-07 | 3.41E-08 | 5.26E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.74E-06 | 1.18E-06 | 2.71E-07 | -- | 3.73E-07 | 1.07E-07 | 1.65E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.15E-13 | 4.94E-14 | 1.13E-14 | -- | 4.46E-15 | 1.28E-15 | 1.97E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.84E-09 | 2.08E-09 | 4.78E-10 | -- | 3.76E-12 | 1.08E-12 | 1.66E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.55E-08 | 2.38E-08 | 5.48E-09 | -- | 5.39E-09 | 1.55E-09 | 2.39E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.33E-04 | 1.43E-04 | 3.29E-05 | -- | 1.29E-06 | 3.71E-07 | 5.72E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.62E-08 | 4.14E-08 | 9.50E-09 | -- | 3.74E-09 | 1.07E-09 | 1.65E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.06E-07 | 1.32E-07 | 3.02E-08 | -- | 1.19E-08 | 3.42E-09 | 5.27E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.00E-07 | 1.72E-07 | 3.95E-08 | -- | 3.11E-09 | 8.93E-10 | 1.38E-09 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 7.31E-11 | 1.08E-10 | 9.73E-12 | 4.17E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-10 |
| Anthracene | 6.47E-12 | 9.59E-12 | 1.36E-14 | 1.02E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-11 |
| Fluorene | 7.28E-11 | 1.08E-10 | 1.29E-13 | 2.86E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.14E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.29E-06 | 1.90E-06 | 2.45E-07 | 8.40E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.20E-05 | 7.42E-06 | 1.53E-06 | 1.60E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.98E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 8.29E-15 | 1.19E-14 | 6.95E-14 | 1.52E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.03E-14 |
| Bromoform | 2.65E-12 | 3.95E-12 | 2.69E-12 | 1.02E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.39E-12 |
| Carbon Tetrachloride | 3.27E-12 | 4.57E-12 | 4.26E-11 | 1.14E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.08E-11 |
| Chloroform | 1.42E-12 | 2.08E-12 | 7.07E-12 | 1.47E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-11 |
| Trichlorofluoromethane (FREON 11) | 1.14E-12 | 1.65E-12 | 8.79E-12 | 2.14E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.81E-09 | 4.19E-09 | 6.15E-09 | 9.60E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-08 |
| 1,2,4-Trichlorobenzene | 2.53E-11 | 3.76E-11 | 1.41E-11 | 3.30E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.54E-11 |
| 1,2-Dichlorobenzene | 3.02E-12 | 4.29E-12 | 2.23E-11 | 7.84E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-11 |
| Hexachlorobenzene | 2.66E-10 | 3.89E-10 | 2.69E-10 | 2.76E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-09 |
| Pentachlorobenzene | 5.62E-09 | 8.35E-09 | 3.52E-10 | 4.80E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-08 |
| Pentachlorophenol | 5.38E-08 | 7.19E-10 | 2.46E-08 | 3.04E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 5.73E-06 | 3.62E-06 | 3.11E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-05 |
| Arsenic | 7.38E-07 | 9.51E-08 | 1.10E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-06 |
| Barium | 8.55E-09 | 5.15E-09 | 2.19E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-08 |
| Beryllium | 1.05E-07 | 3.69E-08 | 1.96E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.34E-07 |
| Boron | 1.71E-06 | 1.99E-06 | 1.61E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-06 |
| Cadmium | 3.84E-05 | 4.72E-05 | 2.21E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-04 |
| Chromium (Total) | 7.57E-10 | 5.16E-11 | 4.35E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-09 |
| Chromium VI | 1.62E-07 | 1.10E-08 | 9.27E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-07 |
| Cobalt | 2.39E-06 | 5.94E-07 | 4.39E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.94E-06 |
| Lead | 3.47E-05 | 3.23E-05 | 1.95E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-04 |
| Mercury - Inorganic | 2.69E-05 | 2.79E-05 | 6.33E-06 | 4.03E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-04 |
| Methyl Mercury | 4.58E-06 | 1.69E-06 | 5.19E-07 | 1.71E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-05 |
| Nickel | 2.74E-06 | 9.58E-07 | 7.52E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.61E-06 |
| Phosphorus | 1.17E-11 | 1.51E-11 | 1.38E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.84E-11 |
| Selenium | 4.86E-08 | 3.54E-09 | 3.65E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.99E-08 |
| Silver | 5.16E-07 | 2.88E-07 | 1.90E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.17E-07 |
| Thallium | 2.42E-04 | 1.07E-05 | 4.57E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-04 |
| Tin | 5.02E-08 | 3.27E-08 | 1.98E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-07 |
| Vanadium | 8.79E-08 | 3.82E-08 | 3.15E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.18E-07 |
| Zinc | 1.30E-06 | 1.46E-06 | 1.24E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.61E-06 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.37E-11 | 5.91E-12 | 3.23E-12 | -- | 4.86E-12 | 1.52E-12 | 2.34E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.71E-12 | 1.17E-12 | 6.38E-13 | -- | 1.39E-12 | 4.34E-13 | 6.71E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.05E-11 | 8.81E-12 | 4.82E-12 | -- | 7.26E-12 | 2.26E-12 | 3.50E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 7.69E-06 | 3.30E-06 | 1.81E-06 | -- | 1.90E-06 | 5.94E-07 | 9.18E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.90E-05 | 2.11E-05 | 1.15E-05 | -- | 2.60E-06 | 8.11E-07 | 1.25E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.36E-16 | 1.01E-16 | 5.55E-17 | -- | 8.34E-17 | 2.60E-17 | 4.02E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.56E-14 | 2.82E-14 | 1.55E-14 | -- | 1.28E-14 | 3.98E-15 | 6.16E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.34E-13 | 5.78E-14 | 3.17E-14 | -- | 2.38E-13 | 7.42E-14 | 1.15E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.11E-14 | 9.07E-15 | 4.97E-15 | -- | 3.74E-15 | 1.16E-15 | 1.80E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.25E-14 | 1.40E-14 | 7.65E-15 | -- | 1.15E-14 | 3.59E-15 | 5.54E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.76E-09 | 7.58E-10 | 4.15E-10 | -- | 3.12E-10 | 9.74E-11 | 1.51E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.46E-12 | 2.35E-12 | 1.29E-12 | -- | 7.73E-13 | 2.41E-13 | 3.73E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.73E-13 | 1.17E-13 | 6.43E-14 | -- | 4.84E-14 | 1.51E-14 | 2.33E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.18E-10 | 1.37E-10 | 7.49E-11 | -- | 7.32E-11 | 2.28E-11 | 3.53E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.76E-09 | 2.48E-09 | 1.36E-09 | -- | 1.02E-10 | 3.18E-11 | 4.91E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.51E-10 | 1.94E-10 | 1.06E-10 | -- | 8.79E-11 | 2.74E-11 | 4.23E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.42E-06 | 1.47E-06 | 8.04E-07 | -- | 6.05E-07 | 1.89E-07 | 2.91E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.52E-07 | 1.94E-07 | 1.06E-07 | -- | 2.40E-08 | 7.48E-09 | 1.16E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.81E-09 | 2.07E-09 | 1.13E-09 | -- | 8.52E-10 | 2.65E-10 | 4.10E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.30E-07 | 1.85E-07 | 1.01E-07 | -- | 2.29E-08 | 7.13E-09 | 1.10E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.66E-08 | 1.14E-08 | 6.26E-09 | -- | 4.71E-09 | 1.47E-09 | 2.27E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.13E-05 | 4.88E-06 | 2.67E-06 | -- | 2.81E-06 | 8.77E-07 | 1.36E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.18E-10 | 1.37E-10 | 7.49E-11 | -- | 2.25E-11 | 7.02E-12 | 1.09E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.79E-08 | 2.92E-08 | 1.60E-08 | -- | 1.08E-08 | 3.37E-09 | 5.21E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.06E-06 | 8.87E-07 | 4.86E-07 | -- | 3.65E-07 | 1.14E-07 | 1.76E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 7.13E-05 | 3.06E-05 | 1.68E-05 | -- | 7.57E-07 | 2.36E-07 | 3.65E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.43E-05 | 1.48E-05 | 8.09E-06 | -- | 3.04E-06 | 9.48E-07 | 1.47E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.73E-06 | 7.42E-07 | 4.06E-07 | -- | 6.11E-07 | 1.90E-07 | 2.95E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.10E-06 | 1.33E-06 | 7.29E-07 | -- | 1.92E-06 | 5.98E-07 | 9.24E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.30E-13 | 5.58E-14 | 3.06E-14 | -- | 2.30E-14 | 7.16E-15 | 1.11E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.47E-09 | 2.35E-09 | 1.29E-09 | -- | 1.94E-11 | 6.03E-12 | 9.33E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.27E-08 | 2.69E-08 | 1.48E-08 | -- | 2.77E-08 | 8.65E-09 | 1.34E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.76E-04 | 1.62E-04 | 8.85E-05 | -- | 6.66E-06 | 2.07E-06 | 3.21E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.09E-07 | 4.67E-08 | 2.56E-08 | -- | 1.92E-08 | 6.00E-09 | 9.27E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.46E-07 | 1.49E-07 | 8.14E-08 | -- | 6.12E-08 | 1.91E-08 | 2.95E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.52E-07 | 1.94E-07 | 1.06E-07 | -- | 1.60E-08 | 4.99E-09 | 7.72E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.61E-12 | 3.62E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.74E-13 | 7.98E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.33E-12 | 5.25E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-04 | 4.15E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-03 | 2.39E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-17 | 6.09E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-15 | 1.37E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.63E-14 | 7.27E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-15 | 4.42E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.54E-15 | 8.33E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-09 | 5.32E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-12 | 1.24E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-13 | 7.07E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-10 | 1.07E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-09 | 1.40E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-08 | 2.03E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.96E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.58E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.27E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.70E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.26E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.59E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.14E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.38E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.86E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-07 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.55E-11 | 1.96E-11 | 4.50E-12 | -- | 3.54E-12 | 1.02E-12 | 1.57E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.98E-12 | 3.86E-12 | 8.87E-13 | -- | 1.01E-12 | 2.91E-13 | 4.48E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 6.79E-11 | 2.92E-11 | 6.71E-12 | -- | 5.27E-12 | 1.51E-12 | 2.34E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.55E-05 | 1.09E-05 | 2.52E-06 | -- | 1.38E-06 | 3.98E-07 | 6.13E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.62E-04 | 6.98E-05 | 1.60E-05 | -- | 1.89E-06 | 5.43E-07 | 8.37E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 7.81E-16 | 3.36E-16 | 7.71E-17 | -- | 6.07E-17 | 1.74E-17 | 2.69E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.17E-13 | 9.35E-14 | 2.15E-14 | -- | 9.29E-15 | 2.67E-15 | 4.11E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.45E-13 | 1.91E-13 | 4.40E-14 | -- | 1.73E-13 | 4.97E-14 | 7.66E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 6.99E-14 | 3.01E-14 | 6.90E-15 | -- | 2.72E-15 | 7.80E-16 | 1.20E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.08E-13 | 4.63E-14 | 1.06E-14 | -- | 8.36E-15 | 2.40E-15 | 3.70E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 5.84E-09 | 2.51E-09 | 5.77E-10 | -- | 2.27E-10 | 6.52E-11 | 1.01E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.81E-11 | 7.77E-12 | 1.79E-12 | -- | 5.62E-13 | 1.61E-13 | 2.49E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 9.05E-13 | 3.89E-13 | 8.94E-14 | -- | 3.52E-14 | 1.01E-14 | 1.56E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.05E-09 | 4.53E-10 | 1.04E-10 | -- | 5.32E-11 | 1.53E-11 | 2.36E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.91E-08 | 8.20E-09 | 1.88E-09 | -- | 7.41E-11 | 2.13E-11 | 3.28E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.49E-09 | 6.43E-10 | 1.48E-10 | -- | 6.39E-11 | 1.83E-11 | 2.83E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.13E-05 | 4.87E-06 | 1.12E-06 | -- | 4.40E-07 | 1.26E-07 | 1.95E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.50E-06 | 6.44E-07 | 1.48E-07 | -- | 1.74E-08 | 5.01E-09 | 7.73E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.59E-08 | 6.85E-09 | 1.57E-09 | -- | 6.19E-10 | 1.78E-10 | 2.74E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.43E-06 | 6.13E-07 | 1.41E-07 | -- | 1.66E-08 | 4.77E-09 | 7.36E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.81E-08 | 3.79E-08 | 8.70E-09 | -- | 3.42E-09 | 9.83E-10 | 1.52E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.76E-05 | 1.62E-05 | 3.71E-06 | -- | 2.04E-06 | 5.87E-07 | 9.05E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.05E-09 | 4.53E-10 | 1.04E-10 | -- | 1.64E-11 | 4.70E-12 | 7.25E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.25E-07 | 9.67E-08 | 2.22E-08 | -- | 7.86E-09 | 2.26E-09 | 3.48E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.84E-06 | 2.94E-06 | 6.75E-07 | -- | 2.66E-07 | 7.63E-08 | 1.18E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.36E-04 | 1.02E-04 | 2.33E-05 | -- | 5.51E-07 | 1.58E-07 | 2.44E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.14E-04 | 4.89E-05 | 1.12E-05 | -- | 2.21E-06 | 6.35E-07 | 9.78E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.72E-06 | 2.46E-06 | 5.65E-07 | -- | 4.44E-07 | 1.28E-07 | 1.97E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.03E-05 | 4.41E-06 | 1.01E-06 | -- | 1.39E-06 | 4.00E-07 | 6.17E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.30E-13 | 1.85E-13 | 4.25E-14 | -- | 1.67E-14 | 4.80E-15 | 7.39E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.81E-08 | 7.79E-09 | 1.79E-09 | -- | 1.41E-11 | 4.04E-12 | 6.23E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.08E-07 | 8.93E-08 | 2.05E-08 | -- | 2.02E-08 | 5.79E-09 | 8.93E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.25E-03 | 5.35E-04 | 1.23E-04 | -- | 4.84E-06 | 1.39E-06 | 2.14E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.60E-07 | 1.55E-07 | 3.56E-08 | -- | 1.40E-08 | 4.02E-09 | 6.19E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.15E-06 | 4.93E-07 | 1.13E-07 | -- | 4.45E-08 | 1.28E-08 | 1.97E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.50E-06 | 6.44E-07 | 1.48E-07 | -- | 1.16E-08 | 3.34E-09 | 5.15E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 2.49E-10 | 3.69E-10 | 3.32E-11 | 1.42E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-10 |
| Anthracene | 2.21E-11 | 3.28E-11 | 4.64E-14 | 1.45E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.03E-11 |
| Fluorene | 2.49E-10 | 3.70E-10 | 4.41E-13 | 4.08E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.32E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.38E-06 | 6.49E-06 | 8.37E-07 | 1.20E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.30E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.56E-05 | 2.77E-05 | 5.72E-06 | 2.28E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.23E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.78E-14 | 4.08E-14 | 2.37E-13 | 2.16E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-13 |
| Bromoform | 9.06E-12 | 1.35E-11 | 9.18E-12 | 1.46E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-11 |
| Carbon Tetrachloride | 1.08E-11 | 1.56E-11 | 1.45E-10 | 1.62E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-10 |
| Chloroform | 4.80E-12 | 7.09E-12 | 2.41E-11 | 2.09E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.62E-11 |
| Trichlorofluoromethane (FREON 11) | 3.83E-12 | 5.62E-12 | 3.00E-11 | 3.05E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 9.61E-09 | 1.43E-08 | 2.10E-08 | 1.37E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.42E-08 |
| 1,2,4-Trichlorobenzene | 8.64E-11 | 1.28E-10 | 4.81E-11 | 4.70E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.92E-10 |
| 1,2-Dichlorobenzene | 1.00E-11 | 1.47E-11 | 7.62E-11 | 1.12E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-10 |
| Hexachlorobenzene | 8.98E-10 | 1.33E-09 | 9.20E-10 | 3.93E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-09 |
| Pentachlorobenzene | 1.92E-08 | 2.85E-08 | 1.20E-09 | 6.84E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-08 |
| Pentachlorophenol | 7.77E-08 | 2.45E-09 | 8.39E-08 | 4.34E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.93E-05 | 1.36E-05 | 1.16E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.21E-05 |
| Arsenic | 2.32E-06 | 3.56E-07 | 4.11E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.03E-06 |
| Barium | 2.86E-08 | 1.93E-08 | 8.20E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.42E-08 |
| Beryllium | 3.40E-07 | 1.38E-07 | 7.34E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-06 |
| Boron | 6.15E-06 | 7.46E-06 | 6.04E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-05 |
| Cadmium | 1.39E-04 | 1.77E-04 | 8.25E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-04 |
| Chromium (Total) | 2.35E-09 | 1.93E-10 | 1.63E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.20E-09 |
| Chromium VI | 5.02E-07 | 4.12E-08 | 3.47E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.04E-07 |
| Cobalt | 7.63E-06 | 2.22E-06 | 1.64E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-05 |
| Lead | 1.21E-04 | 1.21E-04 | 7.29E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.11E-04 |
| Mercury - Inorganic | 5.51E-05 | 6.20E-05 | 1.41E-05 | 5.75E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-04 |
| Methyl Mercury | 9.91E-06 | 6.32E-06 | 1.94E-06 | 2.43E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-05 |
| Nickel | 8.87E-06 | 3.59E-06 | 2.81E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-05 |
| Phosphorus | 4.28E-11 | 5.65E-11 | 5.16E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-10 |
| Selenium | 1.51E-07 | 1.33E-08 | 1.37E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-07 |
| Silver | 1.72E-06 | 1.08E-06 | 7.12E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-06 |
| Thallium | 7.50E-04 | 4.01E-05 | 1.71E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-03 |
| Tin | 1.69E-07 | 1.22E-07 | 7.41E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.74E-07 |
| Vanadium | 2.88E-07 | 1.43E-07 | 1.18E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-06 |
| Zinc | 4.65E-06 | 5.46E-06 | 4.62E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-05 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.45E-11 | 1.05E-11 | 5.78E-12 | -- | 8.69E-12 | 2.71E-12 | 4.19E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.84E-12 | 2.08E-12 | 1.14E-12 | -- | 2.48E-12 | 7.75E-13 | 1.20E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.66E-11 | 1.57E-11 | 8.62E-12 | -- | 1.30E-11 | 4.04E-12 | 6.25E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.37E-05 | 5.88E-06 | 3.22E-06 | -- | 3.39E-06 | 1.06E-06 | 1.63E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.03E-05 | 3.88E-05 | 2.13E-05 | -- | 4.79E-06 | 1.49E-06 | 2.31E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.21E-16 | 1.81E-16 | 9.91E-17 | -- | 1.49E-16 | 4.65E-17 | 7.18E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.17E-13 | 5.04E-14 | 2.76E-14 | -- | 2.28E-14 | 7.12E-15 | 1.10E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.40E-13 | 1.03E-13 | 5.65E-14 | -- | 4.25E-13 | 1.32E-13 | 2.05E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.77E-14 | 1.62E-14 | 8.88E-15 | -- | 6.67E-15 | 2.08E-15 | 3.22E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.80E-14 | 2.50E-14 | 1.37E-14 | -- | 2.06E-14 | 6.41E-15 | 9.91E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.15E-09 | 1.35E-09 | 7.42E-10 | -- | 5.58E-10 | 1.74E-10 | 2.69E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.75E-12 | 4.19E-12 | 2.30E-12 | -- | 1.38E-12 | 4.31E-13 | 6.66E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.88E-13 | 2.10E-13 | 1.15E-13 | -- | 8.64E-14 | 2.69E-14 | 4.16E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.68E-10 | 2.44E-10 | 1.34E-10 | -- | 1.31E-10 | 4.08E-11 | 6.31E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.03E-08 | 4.42E-09 | 2.42E-09 | -- | 1.82E-10 | 5.68E-11 | 8.78E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.06E-10 | 3.46E-10 | 1.90E-10 | -- | 1.57E-10 | 4.89E-11 | 7.57E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 6.32E-06 | 2.72E-06 | 1.49E-06 | -- | 1.12E-06 | 3.49E-07 | 5.39E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.36E-07 | 3.59E-07 | 1.97E-07 | -- | 4.44E-08 | 1.38E-08 | 2.14E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.89E-09 | 3.82E-09 | 2.09E-09 | -- | 1.57E-09 | 4.91E-10 | 7.59E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 7.95E-07 | 3.42E-07 | 1.87E-07 | -- | 4.22E-08 | 1.32E-08 | 2.04E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.92E-08 | 2.11E-08 | 1.16E-08 | -- | 8.71E-09 | 2.71E-09 | 4.20E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.10E-05 | 9.02E-06 | 4.94E-06 | -- | 5.20E-06 | 1.62E-06 | 2.51E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.88E-10 | 2.53E-10 | 1.39E-10 | -- | 4.17E-11 | 1.30E-11 | 2.01E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.26E-07 | 5.40E-08 | 2.96E-08 | -- | 2.00E-08 | 6.23E-09 | 9.64E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 3.82E-06 | 1.64E-06 | 8.98E-07 | -- | 6.75E-07 | 2.11E-07 | 3.26E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.32E-04 | 5.66E-05 | 3.10E-05 | -- | 1.40E-06 | 4.36E-07 | 6.74E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.49E-05 | 2.36E-05 | 1.29E-05 | -- | 4.86E-06 | 1.51E-06 | 2.34E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.19E-06 | 1.37E-06 | 7.50E-07 | -- | 1.13E-06 | 3.52E-07 | 5.44E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.72E-06 | 2.46E-06 | 1.35E-06 | -- | 3.55E-06 | 1.11E-06 | 1.71E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.40E-13 | 1.03E-13 | 5.65E-14 | -- | 4.25E-14 | 1.32E-14 | 2.05E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.01E-08 | 4.35E-09 | 2.38E-09 | -- | 3.58E-11 | 1.12E-11 | 1.73E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.16E-07 | 4.98E-08 | 2.73E-08 | -- | 5.13E-08 | 1.60E-08 | 2.47E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 6.95E-04 | 2.99E-04 | 1.64E-04 | -- | 1.23E-05 | 3.84E-06 | 5.93E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.01E-07 | 8.63E-08 | 4.73E-08 | -- | 3.55E-08 | 1.11E-08 | 1.71E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 6.39E-07 | 2.75E-07 | 1.50E-07 | -- | 1.13E-07 | 3.53E-08 | 5.45E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.36E-07 | 3.59E-07 | 1.97E-07 | -- | 2.96E-08 | 9.23E-09 | 1.43E-08 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.23E-12 | 6.47E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-12 | 1.43E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.52E-12 | 9.37E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08E-04 | 7.37E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-03 | 4.22E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-16 | 1.09E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.74E-15 | 2.44E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-13 | 1.30E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-15 | 7.90E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-14 | 1.49E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-09 | 9.50E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-12 | 2.21E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-13 | 1.26E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.24E-10 | 1.91E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.47E-09 | 2.49E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-08 | 2.72E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.75E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.43E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.33E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-06 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.13E-11 | 3.50E-11 | 8.03E-12 | -- | 6.32E-12 | 1.81E-12 | 2.80E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.60E-11 | 6.89E-12 | 1.58E-12 | -- | 1.81E-12 | 5.19E-13 | 8.00E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.21E-10 | 5.21E-11 | 1.20E-11 | -- | 9.42E-12 | 2.71E-12 | 4.17E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.53E-05 | 1.95E-05 | 4.48E-06 | -- | 2.46E-06 | 7.08E-07 | 1.09E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.99E-04 | 1.29E-04 | 2.95E-05 | -- | 3.49E-06 | 1.00E-06 | 1.54E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.39E-15 | 6.00E-16 | 1.38E-16 | -- | 1.08E-16 | 3.11E-17 | 4.80E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.88E-13 | 1.67E-13 | 3.84E-14 | -- | 1.66E-14 | 4.77E-15 | 7.35E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 7.95E-13 | 3.42E-13 | 7.86E-14 | -- | 3.09E-13 | 8.87E-14 | 1.37E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.25E-13 | 5.37E-14 | 1.23E-14 | -- | 4.85E-15 | 1.39E-15 | 2.15E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.92E-13 | 8.27E-14 | 1.90E-14 | -- | 1.49E-14 | 4.29E-15 | 6.62E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.04E-08 | 4.49E-09 | 1.03E-09 | -- | 4.06E-10 | 1.16E-10 | 1.80E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.23E-11 | 1.39E-11 | 3.19E-12 | -- | 1.00E-12 | 2.88E-13 | 4.45E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.62E-12 | 6.95E-13 | 1.60E-13 | -- | 6.28E-14 | 1.80E-14 | 2.78E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.88E-09 | 8.10E-10 | 1.86E-10 | -- | 9.51E-11 | 2.73E-11 | 4.21E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.41E-08 | 1.46E-08 | 3.37E-09 | -- | 1.32E-10 | 3.80E-11 | 5.86E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.67E-09 | 1.15E-09 | 2.64E-10 | -- | 1.14E-10 | 3.28E-11 | 5.05E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.09E-05 | 9.00E-06 | 2.07E-06 | -- | 8.13E-07 | 2.33E-07 | 3.60E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.77E-06 | 1.19E-06 | 2.73E-07 | -- | 3.23E-08 | 9.27E-09 | 1.43E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.95E-08 | 1.27E-08 | 2.91E-09 | -- | 1.14E-09 | 3.29E-10 | 5.07E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-06 | 1.13E-06 | 2.60E-07 | -- | 3.07E-08 | 8.82E-09 | 1.36E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-07 | 7.00E-08 | 1.61E-08 | -- | 6.33E-09 | 1.82E-09 | 2.80E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.95E-05 | 2.99E-05 | 6.86E-06 | -- | 3.78E-06 | 1.09E-06 | 1.67E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.95E-09 | 8.38E-10 | 1.93E-10 | -- | 3.03E-11 | 8.70E-12 | 1.34E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.16E-07 | 1.79E-07 | 4.11E-08 | -- | 1.45E-08 | 4.18E-09 | 6.44E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.26E-05 | 5.43E-06 | 1.25E-06 | -- | 4.91E-07 | 1.41E-07 | 2.17E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.36E-04 | 1.88E-04 | 4.31E-05 | -- | 1.02E-06 | 2.92E-07 | 4.50E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.82E-04 | 7.81E-05 | 1.80E-05 | -- | 3.53E-06 | 1.01E-06 | 1.56E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.06E-05 | 4.54E-06 | 1.04E-06 | -- | 8.20E-07 | 2.36E-07 | 3.63E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.90E-05 | 8.15E-06 | 1.87E-06 | -- | 2.58E-06 | 7.40E-07 | 1.14E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 7.95E-13 | 3.42E-13 | 7.85E-14 | -- | 3.09E-14 | 8.87E-15 | 1.37E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.35E-08 | 1.44E-08 | 3.31E-09 | -- | 2.60E-11 | 7.47E-12 | 1.15E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.84E-07 | 1.65E-07 | 3.79E-08 | -- | 3.73E-08 | 1.07E-08 | 1.65E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.30E-03 | 9.90E-04 | 2.27E-04 | -- | 8.94E-06 | 2.57E-06 | 3.96E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.65E-07 | 2.86E-07 | 6.57E-08 | -- | 2.58E-08 | 7.42E-09 | 1.14E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.12E-06 | 9.10E-07 | 2.09E-07 | -- | 8.22E-08 | 2.36E-08 | 3.64E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.77E-06 | 1.19E-06 | 2.74E-07 | -- | 2.15E-08 | 6.18E-09 | 9.52E-09 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce Hazard Quotient | Ingestion - Aboveground Prot. Garden Produce Hazard Quotient | Ingestion - Belowground Garden Produce Hazard Quotient | Ingestion - Home Grown Fruit Hazard Quotient | Ingestion - Wild Game Hazard Quotient | Ingestion - Fish - Lake Hazard Quotient | Ingestion - Fish - River Hazard Quotient | Ingestion - Surface Water Hazard Quotient | Ingestion - Beef Hazard Quotient | Ingestion - Milk Hazard Quotient | Ingestion - Pork Hazard Quotient | Ingestion - Poultry Hazard Quotient | Ingestion - Egg Hazard Quotient | Dermal - Surface Water Hazard Quotient | Ingestion - Breast Milk Hazard Quotient | Total (All Pathways) Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.44E-10 | 6.60E-10 | 5.93E-11 | 2.53E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-09 |
| Anthracene | 3.94E-11 | 5.85E-11 | 8.29E-14 | 1.51E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-10 |
| Fluorene | 4.44E-10 | 6.61E-10 | 7.88E-13 | 4.26E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.78E-06 | 1.15E-05 | 1.49E-06 | 1.25E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.43E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 6.19E-05 | 5.11E-05 | 1.05E-05 | 2.38E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.93E-14 | 7.28E-14 | 4.24E-13 | 2.26E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.49E-13 |
| Bromoform | 1.62E-11 | 2.41E-11 | 1.64E-11 | 1.52E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.73E-11 |
| Carbon Tetrachloride | 1.90E-11 | 2.78E-11 | 2.60E-10 | 1.69E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-10 |
| Chloroform | 8.55E-12 | 1.27E-11 | 4.31E-11 | 2.18E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.45E-11 |
| Trichlorofluoromethane (FREON 11) | 6.80E-12 | 1.00E-11 | 5.36E-11 | 3.19E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.72E-08 | 2.55E-08 | 3.75E-08 | 1.43E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.69E-08 |
| 1,2,4-Trichlorobenzene | 1.54E-10 | 2.29E-10 | 8.59E-11 | 4.90E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.21E-10 |
| 1,2-Dichlorobenzene | 1.78E-11 | 2.62E-11 | 1.36E-10 | 1.17E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-10 |
| Hexachlorobenzene | 1.60E-09 | 2.37E-09 | 1.64E-09 | 4.10E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.66E-09 |
| Pentachlorobenzene | 3.42E-08 | 5.09E-08 | 2.15E-09 | 7.14E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-07 |
| Pentachlorophenol | 8.23E-08 | 4.38E-09 | 1.50E-07 | 4.53E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 3.51E-05 | 2.51E-05 | 2.15E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.58E-05 |
| Arsenic | 4.18E-06 | 6.58E-07 | 7.60E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.20E-06 |
| Barium | 5.22E-08 | 3.56E-08 | 1.52E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-07 |
| Beryllium | 6.16E-07 | 2.55E-07 | 1.36E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.97E-06 |
| Boron | 1.13E-05 | 1.38E-05 | 1.12E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-05 |
| Cadmium | 2.57E-04 | 3.26E-04 | 1.53E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.11E-04 |
| Chromium (Total) | 4.24E-09 | 3.57E-10 | 3.01E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.66E-09 |
| Chromium VI | 9.05E-07 | 7.62E-08 | 6.42E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-06 |
| Cobalt | 1.38E-05 | 4.11E-06 | 3.04E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-05 |
| Lead | 2.22E-04 | 2.23E-04 | 1.35E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-03 |
| Mercury - Inorganic | 8.30E-05 | 9.90E-05 | 2.24E-05 | 6.00E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.94E-04 |
| Methyl Mercury | 1.48E-05 | 1.17E-05 | 3.59E-06 | 2.54E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.02E-05 |
| Nickel | 1.61E-05 | 6.63E-06 | 5.20E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.67E-05 |
| Phosphorus | 7.89E-11 | 1.05E-10 | 9.55E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-10 |
| Selenium | 2.73E-07 | 2.45E-08 | 2.53E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.51E-07 |
| Silver | 3.13E-06 | 1.99E-06 | 1.32E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-06 |
| Thallium | 1.35E-03 | 7.42E-05 | 3.16E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.96E-03 |
| Tin | 3.09E-07 | 2.26E-07 | 1.37E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-06 |
| Vanadium | 5.22E-07 | 2.64E-07 | 2.18E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-06 |
| Zinc | 8.56E-06 | 1.01E-05 | 8.55E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-05 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.31E-11 | 1.42E-11 | 7.79E-12 | -- | 1.17E-11 | 3.65E-12 | 5.65E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.53E-12 | 2.81E-12 | 1.54E-12 | -- | 3.35E-12 | 1.04E-12 | 1.62E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.94E-11 | 2.12E-11 | 1.16E-11 | -- | 1.75E-11 | 5.45E-12 | 8.43E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.84E-05 | 7.93E-06 | 4.34E-06 | -- | 4.57E-06 | 1.43E-06 | 2.20E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.33E-04 | 5.71E-05 | 3.13E-05 | -- | 7.05E-06 | 2.20E-06 | 3.40E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.68E-16 | 2.44E-16 | 1.34E-16 | -- | 2.01E-16 | 6.27E-17 | 9.69E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.58E-13 | 6.80E-14 | 3.72E-14 | -- | 3.08E-14 | 9.60E-15 | 1.48E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.24E-13 | 1.39E-13 | 7.62E-14 | -- | 5.73E-13 | 1.79E-13 | 2.76E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 5.08E-14 | 2.19E-14 | 1.20E-14 | -- | 9.00E-15 | 2.81E-15 | 4.34E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.83E-14 | 3.37E-14 | 1.84E-14 | -- | 2.77E-14 | 8.64E-15 | 1.34E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.25E-09 | 1.83E-09 | 1.00E-09 | -- | 7.53E-10 | 2.35E-10 | 3.63E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.32E-11 | 5.65E-12 | 3.10E-12 | -- | 1.86E-12 | 5.81E-13 | 8.98E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.58E-13 | 2.83E-13 | 1.55E-13 | -- | 1.17E-13 | 3.63E-14 | 5.62E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.67E-10 | 3.30E-10 | 1.81E-10 | -- | 1.76E-10 | 5.50E-11 | 8.51E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.39E-08 | 5.96E-09 | 3.27E-09 | -- | 2.46E-10 | 7.66E-11 | 1.18E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.09E-09 | 4.67E-10 | 2.56E-10 | -- | 2.12E-10 | 6.60E-11 | 1.02E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.29E-06 | 3.99E-06 | 2.19E-06 | -- | 1.64E-06 | 5.13E-07 | 7.92E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.23E-06 | 5.28E-07 | 2.89E-07 | -- | 6.53E-08 | 2.03E-08 | 3.15E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.31E-08 | 5.62E-09 | 3.08E-09 | -- | 2.32E-09 | 7.22E-10 | 1.12E-09 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.17E-06 | 5.03E-07 | 2.75E-07 | -- | 6.21E-08 | 1.94E-08 | 2.99E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.23E-08 | 3.11E-08 | 1.70E-08 | -- | 1.28E-08 | 3.99E-09 | 6.17E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.08E-05 | 1.33E-05 | 7.26E-06 | -- | 7.64E-06 | 2.38E-06 | 3.68E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.65E-10 | 3.72E-10 | 2.04E-10 | -- | 6.13E-11 | 1.91E-11 | 2.95E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.85E-07 | 7.93E-08 | 4.35E-08 | -- | 2.94E-08 | 9.17E-09 | 1.42E-08 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.61E-06 | 2.41E-06 | 1.32E-06 | -- | 9.93E-07 | 3.10E-07 | 4.79E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.94E-04 | 8.32E-05 | 4.56E-05 | -- | 2.06E-06 | 6.41E-07 | 9.91E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.23E-05 | 2.68E-05 | 1.47E-05 | -- | 5.52E-06 | 1.72E-06 | 2.66E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.69E-06 | 2.01E-06 | 1.10E-06 | -- | 1.66E-06 | 5.17E-07 | 8.00E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.41E-06 | 3.62E-06 | 1.98E-06 | -- | 5.21E-06 | 1.63E-06 | 2.51E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.53E-13 | 1.52E-13 | 8.31E-14 | -- | 6.25E-14 | 1.95E-14 | 3.01E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.49E-08 | 6.39E-09 | 3.50E-09 | -- | 5.26E-11 | 1.64E-11 | 2.54E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.70E-07 | 7.33E-08 | 4.01E-08 | -- | 7.55E-08 | 2.35E-08 | 3.64E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.02E-03 | 4.39E-04 | 2.41E-04 | -- | 1.81E-05 | 5.64E-06 | 8.72E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.95E-07 | 1.27E-07 | 6.95E-08 | -- | 5.23E-08 | 1.63E-08 | 2.52E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.39E-07 | 4.04E-07 | 2.21E-07 | -- | 1.66E-07 | 5.18E-08 | 8.01E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.23E-06 | 5.28E-07 | 2.89E-07 | -- | 4.35E-08 | 1.36E-08 | 2.10E-08 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-11 | 1.02E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.75E-12 | 2.16E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-11 | 1.40E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-02 | 1.05E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-01 | 1.10E-01 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-14 | 4.59E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.06E-11 | 9.09E-11 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.04E-11 | 8.19E-11 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.49E-13 | 6.49E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-11 | 3.39E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-08 | 4.51E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-10 | 4.80E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.10E-12 | 9.40E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.88E-08 | 4.04E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.22E-08 | 1.16E-07 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.37E-08 | 7.59E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.51E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-05 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.00E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.49E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.85E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-06 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.10E-10 | 4.71E-11 | 1.08E-11 | -- | 8.52E-12 | 2.45E-12 | 3.77E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.16E-11 | 9.30E-12 | 2.14E-12 | -- | 2.44E-12 | 7.00E-13 | 1.08E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.64E-10 | 7.03E-11 | 1.62E-11 | -- | 1.27E-11 | 3.65E-12 | 5.63E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.11E-05 | 2.63E-05 | 6.04E-06 | -- | 3.32E-06 | 9.55E-07 | 1.47E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.40E-04 | 1.89E-04 | 4.34E-05 | -- | 5.12E-06 | 1.47E-06 | 2.27E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.88E-15 | 8.09E-16 | 1.86E-16 | -- | 1.46E-16 | 4.20E-17 | 6.47E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.24E-13 | 2.25E-13 | 5.17E-14 | -- | 2.24E-14 | 6.43E-15 | 9.91E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.07E-12 | 4.61E-13 | 1.06E-13 | -- | 4.17E-13 | 1.20E-13 | 1.85E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.68E-13 | 7.24E-14 | 1.66E-14 | -- | 6.54E-15 | 1.88E-15 | 2.90E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.59E-13 | 1.12E-13 | 2.56E-14 | -- | 2.02E-14 | 5.79E-15 | 8.92E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.41E-08 | 6.05E-09 | 1.39E-09 | -- | 5.47E-10 | 1.57E-10 | 2.42E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.36E-11 | 1.87E-11 | 4.30E-12 | -- | 1.35E-12 | 3.89E-13 | 6.00E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.18E-12 | 9.38E-13 | 2.15E-13 | -- | 8.47E-14 | 2.43E-14 | 3.75E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.54E-09 | 1.09E-09 | 2.51E-10 | -- | 1.28E-10 | 3.68E-11 | 5.68E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.60E-08 | 1.98E-08 | 4.54E-09 | -- | 1.79E-10 | 5.13E-11 | 7.91E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.60E-09 | 1.55E-09 | 3.56E-10 | -- | 1.54E-10 | 4.42E-11 | 6.82E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.08E-05 | 1.32E-05 | 3.04E-06 | -- | 1.20E-06 | 3.43E-07 | 5.29E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.07E-06 | 1.75E-06 | 4.02E-07 | -- | 4.74E-08 | 1.36E-08 | 2.10E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.33E-08 | 1.86E-08 | 4.28E-09 | -- | 1.68E-09 | 4.83E-10 | 7.45E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.87E-06 | 1.67E-06 | 3.83E-07 | -- | 4.51E-08 | 1.30E-08 | 2.00E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.40E-07 | 1.03E-07 | 2.37E-08 | -- | 9.31E-09 | 2.67E-09 | 4.12E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.02E-04 | 4.39E-05 | 1.01E-05 | -- | 5.56E-06 | 1.60E-06 | 2.46E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.87E-09 | 1.23E-09 | 2.83E-10 | -- | 4.45E-11 | 1.28E-11 | 1.97E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.11E-07 | 2.63E-07 | 6.04E-08 | -- | 2.14E-08 | 6.14E-09 | 9.47E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.86E-05 | 7.99E-06 | 1.84E-06 | -- | 7.22E-07 | 2.07E-07 | 3.20E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.41E-04 | 2.76E-04 | 6.34E-05 | -- | 1.50E-06 | 4.29E-07 | 6.62E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.06E-04 | 8.87E-05 | 2.04E-05 | -- | 4.01E-06 | 1.15E-06 | 1.78E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.55E-05 | 6.67E-06 | 1.53E-06 | -- | 1.21E-06 | 3.46E-07 | 5.34E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.79E-05 | 1.20E-05 | 2.75E-06 | -- | 3.79E-06 | 1.09E-06 | 1.68E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.17E-12 | 5.03E-13 | 1.16E-13 | -- | 4.54E-14 | 1.30E-14 | 2.01E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.93E-08 | 2.12E-08 | 4.87E-09 | -- | 3.83E-11 | 1.10E-11 | 1.69E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.65E-07 | 2.43E-07 | 5.58E-08 | -- | 5.49E-08 | 1.58E-08 | 2.43E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.38E-03 | 1.46E-03 | 3.34E-04 | -- | 1.32E-05 | 3.78E-06 | 5.82E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.78E-07 | 4.20E-07 | 9.66E-08 | -- | 3.80E-08 | 1.09E-08 | 1.68E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.11E-06 | 1.34E-06 | 3.07E-07 | -- | 1.21E-07 | 3.47E-08 | 5.35E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.07E-06 | 1.75E-06 | 4.02E-07 | -- | 3.16E-08 | 9.08E-09 | 1.40E-08 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.08E-09 | 1.97E-09 | 1.31E-10 | 9.66E-10 | -- | -- | -- | -- | 4.16E-12 | 2.20E-11 | 6.35E-13 | 1.23E-12 | 1.19E-12 | -- | -- | 4.36E-09 |
| Anthracene | 9.58E-11 | 1.75E-10 | 1.82E-13 | 5.11E-15 | -- | -- | -- | -- | 6.17E-13 | 3.01E-12 | 1.04E-13 | 2.14E-13 | 2.08E-13 | -- | -- | 3.12E-10 |
| Fluorene | 1.08E-09 | 1.97E-09 | 1.74E-12 | 1.44E-13 | -- | -- | -- | -- | 5.55E-12 | 2.81E-11 | 8.70E-13 | 1.73E-12 | 1.68E-12 | -- | -- | 3.36E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.89E-05 | 3.45E-05 | 3.28E-06 | 4.22E-08 | -- | -- | -- | -- | 5.61E-05 | 1.77E-04 | 1.30E-05 | 3.12E-07 | 3.03E-07 | -- | -- | 4.03E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.61E-04 | 1.66E-04 | 2.53E-05 | 8.03E-06 | -- | -- | -- | -- | 5.69E-04 | 2.25E-03 | 8.21E-05 | 1.85E-06 | 1.80E-06 | -- | -- | 3.94E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.20E-13 | 2.17E-13 | 9.34E-13 | 7.63E-16 | -- | -- | -- | -- | 3.21E-11 | 1.09E-10 | 1.43E-12 | 1.65E-14 | 1.61E-14 | -- | -- | 1.43E-10 |
| Bromoform | 3.93E-11 | 7.19E-11 | 3.61E-11 | 5.15E-15 | -- | -- | -- | -- | 8.85E-08 | 2.99E-07 | 3.95E-09 | 4.56E-11 | 4.43E-11 | -- | -- | 3.92E-07 |
| Carbon Tetrachloride | 4.61E-11 | 8.31E-11 | 5.71E-10 | 5.72E-13 | -- | -- | -- | -- | 2.90E-08 | 9.83E-08 | 1.30E-09 | 1.50E-11 | 1.46E-11 | -- | -- | 1.29E-07 |
| Chloroform | 2.08E-11 | 3.78E-11 | 9.49E-11 | 7.37E-14 | -- | -- | -- | -- | 1.23E-09 | 4.17E-09 | 5.51E-11 | 6.36E-13 | 6.19E-13 | -- | -- | 5.61E-09 |
| Trichlorofluoromethane (FREON 11) | 1.65E-11 | 3.00E-11 | 1.18E-10 | 1.08E-13 | -- | -- | -- | -- | 2.44E-08 | 8.25E-08 | 1.09E-09 | 1.26E-11 | 1.22E-11 | -- | -- | 1.08E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.17E-08 | 7.62E-08 | 8.27E-08 | 4.83E-12 | -- | -- | -- | -- | 1.01E-07 | 3.59E-07 | 6.60E-09 | 1.35E-10 | 1.31E-10 | -- | -- | 6.90E-07 |
| 1,2,4-Trichlorobenzene | 3.75E-10 | 6.85E-10 | 1.89E-10 | 1.66E-13 | -- | -- | -- | -- | 8.08E-09 | 2.75E-08 | 3.69E-10 | 4.35E-12 | 4.22E-12 | -- | -- | 3.72E-08 |
| 1,2-Dichlorobenzene | 4.32E-11 | 7.82E-11 | 3.00E-10 | 3.94E-13 | -- | -- | -- | -- | 7.06E-10 | 2.40E-09 | 3.20E-11 | 3.74E-13 | 3.63E-13 | -- | -- | 3.56E-09 |
| Hexachlorobenzene | 3.89E-09 | 7.08E-09 | 3.62E-09 | 1.39E-11 | -- | -- | -- | -- | 4.20E-08 | 1.44E-07 | 2.20E-09 | 2.99E-11 | 2.91E-11 | -- | -- | 2.07E-07 |
| Pentachlorobenzene | 8.33E-08 | 1.52E-07 | 4.73E-09 | 2.41E-11 | -- | -- | -- | -- | 9.57E-08 | 3.96E-07 | 1.78E-08 | 3.92E-10 | 3.81E-10 | -- | -- | 8.21E-07 |
| Pentachlorophenol | 1.78E-07 | 1.31E-08 | 3.30E-07 | 1.53E-07 | -- | -- | -- | -- | 1.27E-08 | 6.51E-08 | 3.03E-10 | 7.73E-14 | 7.51E-14 | -- | -- | 7.58E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 9.27E-05 | 8.16E-05 | 5.17E-06 | -- | -- | -- | -- | -- | 8.71E-06 | 2.05E-05 | 4.82E-07 | 6.13E-09 | 5.95E-09 | -- | -- | 2.58E-04 |
| Arsenic | 1.10E-05 | 2.14E-06 | 1.82E-07 | -- | -- | -- | -- | -- | 2.18E-06 | 1.51E-06 | 9.63E-08 | 1.33E-09 | 1.29E-09 | -- | -- | 2.34E-05 |
| Barium | 1.38E-07 | 1.16E-07 | 3.64E-09 | -- | -- | -- | -- | -- | 1.74E-09 | 9.48E-08 | 9.03E-11 | 1.16E-12 | 1.13E-12 | -- | -- | 4.23E-07 |
| Beryllium | 1.62E-06 | 8.31E-07 | 3.25E-08 | -- | -- | -- | -- | -- | 2.25E-07 | 3.94E-09 | 2.78E-08 | 6.09E-10 | 5.92E-10 | -- | -- | 8.74E-06 |
| Boron | 2.99E-05 | 4.49E-05 | 2.68E-06 | -- | -- | -- | -- | -- | 8.45E-07 | 4.47E-06 | 4.91E-08 | 5.75E-10 | 5.59E-10 | -- | -- | 8.33E-05 |
| Cadmium | 6.79E-04 | 1.06E-03 | 3.66E-05 | -- | -- | -- | -- | -- | 3.95E-06 | 5.12E-06 | 3.28E-07 | 3.59E-06 | 1.44E-07 | -- | -- | 1.96E-03 |
| Chromium (Total) | 1.11E-08 | 1.16E-09 | 7.22E-11 | -- | -- | -- | -- | -- | 5.78E-09 | 3.68E-08 | 2.12E-10 | 2.61E-12 | 2.54E-12 | -- | -- | 5.97E-08 |
| Chromium VI | 2.38E-06 | 2.48E-07 | 1.54E-08 | -- | -- | -- | -- | -- | 1.23E-06 | 7.86E-06 | 4.53E-08 | 5.57E-10 | 5.41E-10 | -- | -- | 1.28E-05 |
| Cobalt | 3.63E-05 | 1.34E-05 | 7.28E-07 | -- | -- | -- | -- | -- | 6.69E-05 | 3.19E-04 | 3.74E-06 | 6.20E-08 | 6.02E-08 | -- | -- | 4.70E-04 |
| Lead | 5.86E-04 | 7.25E-04 | 3.23E-05 | -- | -- | -- | -- | -- | 1.50E-05 | 2.60E-04 | 1.62E-06 | 3.23E-08 | 3.14E-08 | -- | -- | 2.60E-03 |
| Mercury - Inorganic | 1.75E-04 | 2.49E-04 | 4.16E-05 | 2.03E-05 | -- | -- | -- | -- | 3.53E-05 | 2.45E-04 | 4.05E-08 | 1.13E-06 | 1.92E-06 | -- | -- | 1.09E-03 |
| Methyl Mercury | 3.70E-05 | 3.80E-05 | 8.61E-06 | 8.58E-06 | -- | -- | -- | -- | 8.10E-07 | 7.20E-06 | 5.34E-10 | 1.37E-08 | 2.33E-08 | -- | -- | 1.26E-04 |
| Nickel | 4.23E-05 | 2.16E-05 | 1.25E-06 | -- | -- | -- | -- | -- | 2.41E-05 | 8.96E-05 | 1.58E-06 | 2.75E-08 | 2.68E-08 | -- | -- | 2.30E-04 |
| Phosphorus | 2.09E-10 | 3.40E-10 | 2.29E-11 | -- | -- | -- | -- | -- | 2.49E-10 | 1.36E-09 | 2.08E-11 | 3.29E-13 | 3.19E-13 | -- | -- | 2.21E-09 |
| Selenium | 7.16E-07 | 7.99E-08 | 6.07E-09 | -- | -- | -- | -- | -- | 1.44E-07 | 8.89E-06 | 2.43E-07 | 1.31E-08 | 2.23E-08 | -- | -- | 1.02E-05 |
| Silver | 8.24E-06 | 6.48E-06 | 3.16E-07 | -- | -- | -- | -- | -- | 1.73E-06 | 2.78E-04 | 6.23E-08 | 5.18E-10 | 5.03E-10 | -- | -- | 2.96E-04 |
| Thallium | 3.55E-03 | 2.42E-04 | 7.58E-06 | -- | -- | -- | -- | -- | 1.63E-02 | 1.77E-02 | 1.12E-03 | 2.12E-05 | 2.06E-05 | -- | -- | 4.42E-02 |
| Tin | 8.14E-07 | 7.36E-07 | 3.28E-08 | -- | -- | -- | -- | -- | 6.32E-06 | 2.78E-05 | 6.37E-07 | 1.28E-08 | 1.25E-08 | -- | -- | 3.79E-05 |
| Vanadium | 1.38E-06 | 8.59E-07 | 5.23E-08 | -- | -- | -- | -- | -- | 4.26E-07 | 1.71E-06 | 5.55E-08 | 1.24E-09 | 1.20E-09 | -- | -- | 9.45E-06 |
| Zinc | 2.26E-05 | 3.28E-05 | 2.05E-05 | -- | -- | -- | -- | -- | 1.00E-07 | 8.60E-07 | 7.49E-09 | 1.12E-08 | 1.91E-08 | -- | -- | 8.33E-05 |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.29E-12 | 2.70E-12 | 1.86E-12 | -- | 4.89E-13 | 1.40E-13 | 2.16E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.24E-12 | 5.33E-13 | 3.68E-13 | -- | 1.40E-13 | 4.01E-14 | 6.19E-14 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.38E-12 | 4.03E-12 | 2.78E-12 | -- | 7.29E-13 | 2.09E-13 | 3.23E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.51E-06 | 1.51E-06 | 1.04E-06 | -- | 1.91E-07 | 5.49E-08 | 8.46E-08 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.59E-05 | 1.54E-05 | 1.06E-05 | -- | 4.18E-07 | 1.20E-07 | 1.85E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.08E-16 | 4.64E-17 | 3.20E-17 | -- | 8.38E-18 | 2.41E-18 | 3.71E-18 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.00E-14 | 1.29E-14 | 8.91E-15 | -- | 1.28E-15 | 3.69E-16 | 5.69E-16 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.15E-14 | 2.65E-14 | 1.82E-14 | -- | 2.39E-14 | 6.87E-15 | 1.06E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 9.66E-15 | 4.15E-15 | 2.86E-15 | -- | 3.75E-16 | 1.08E-16 | 1.66E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.49E-14 | 6.39E-15 | 4.41E-15 | -- | 1.16E-15 | 3.32E-16 | 5.12E-16 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.07E-10 | 3.47E-10 | 2.39E-10 | -- | 3.14E-11 | 9.01E-12 | 1.39E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.50E-12 | 1.07E-12 | 7.40E-13 | -- | 7.76E-14 | 2.23E-14 | 3.44E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.25E-13 | 5.37E-14 | 3.70E-14 | -- | 4.86E-15 | 1.39E-15 | 2.15E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.46E-10 | 6.26E-11 | 4.32E-11 | -- | 7.35E-12 | 2.11E-12 | 3.26E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-09 | 1.13E-09 | 7.81E-10 | -- | 1.02E-11 | 2.94E-12 | 4.53E-12 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.06E-10 | 8.88E-11 | 6.12E-11 | -- | 8.82E-12 | 2.53E-12 | 3.91E-12 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.50E-06 | 1.07E-06 | 7.41E-07 | -- | 9.71E-08 | 2.79E-08 | 4.30E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.31E-07 | 1.42E-07 | 9.80E-08 | -- | 3.85E-09 | 1.11E-09 | 1.71E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.52E-09 | 1.51E-09 | 1.04E-09 | -- | 1.37E-10 | 3.93E-11 | 6.05E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.15E-07 | 1.35E-07 | 9.34E-08 | -- | 3.67E-09 | 1.05E-09 | 1.63E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.95E-08 | 8.36E-09 | 5.76E-09 | -- | 7.56E-10 | 2.17E-10 | 3.35E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.30E-06 | 3.57E-06 | 2.46E-06 | -- | 4.52E-07 | 1.30E-07 | 2.00E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.33E-10 | 1.00E-10 | 6.90E-11 | -- | 3.62E-12 | 1.04E-12 | 1.60E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.97E-08 | 2.13E-08 | 1.47E-08 | -- | 1.74E-09 | 4.99E-10 | 7.69E-10 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.51E-06 | 6.49E-07 | 4.47E-07 | -- | 5.87E-08 | 1.68E-08 | 2.60E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.22E-05 | 2.24E-05 | 1.55E-05 | -- | 1.22E-07 | 3.49E-08 | 5.39E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.23E-05 | 9.59E-06 | 6.61E-06 | -- | 4.34E-07 | 1.24E-07 | 1.92E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.26E-06 | 5.43E-07 | 3.74E-07 | -- | 9.82E-08 | 2.82E-08 | 4.35E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.26E-06 | 9.74E-07 | 6.71E-07 | -- | 3.08E-07 | 8.84E-08 | 1.36E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 9.49E-14 | 4.08E-14 | 2.81E-14 | -- | 3.69E-15 | 1.06E-15 | 1.63E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.00E-09 | 1.72E-09 | 1.19E-09 | -- | 3.11E-12 | 8.92E-13 | 1.38E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.59E-08 | 1.97E-08 | 1.36E-08 | -- | 4.45E-09 | 1.28E-09 | 1.97E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.75E-04 | 1.18E-04 | 8.15E-05 | -- | 1.07E-06 | 3.07E-07 | 4.73E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.95E-08 | 3.42E-08 | 2.36E-08 | -- | 3.09E-09 | 8.87E-10 | 1.37E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.53E-07 | 1.09E-07 | 7.50E-08 | -- | 9.84E-09 | 2.82E-09 | 4.35E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.31E-07 | 1.42E-07 | 9.80E-08 | -- | 2.57E-09 | 7.38E-10 | 1.14E-09 | -- |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.40E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.41E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.77E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.45E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.57E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-10 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.31E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.50E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.87E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.03E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.44E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.91E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.77E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-07 |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.14E-12 | -- | -- | -- | 8.83E-14 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.24E-13 | -- | -- | -- | 2.53E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.70E-12 | -- | -- | -- | 1.32E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.37E-07 | -- | -- | -- | 3.46E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.91E-06 | -- | -- | -- | 4.56E-08 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.95E-17 | -- | -- | -- | 1.51E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.43E-15 | -- | -- | -- | 2.32E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.11E-14 | -- | -- | -- | 4.32E-15 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.75E-15 | -- | -- | -- | 6.78E-17 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.69E-15 | -- | -- | -- | 2.09E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.46E-10 | -- | -- | -- | 5.67E-12 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.52E-13 | -- | -- | -- | 1.40E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.26E-14 | -- | -- | -- | 8.78E-16 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.63E-11 | -- | -- | -- | 1.33E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.76E-10 | -- | -- | -- | 1.85E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.73E-11 | -- | -- | -- | 1.60E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.73E-07 | -- | -- | -- | 1.06E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.60E-08 | -- | -- | -- | 4.20E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.84E-10 | -- | -- | -- | 1.49E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.44E-08 | -- | -- | -- | 4.00E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.12E-09 | -- | -- | -- | 8.24E-11 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.05E-07 | -- | -- | -- | 4.92E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.54E-11 | -- | -- | -- | 3.94E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.41E-09 | -- | -- | -- | 1.89E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.65E-07 | -- | -- | -- | 6.40E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.69E-06 | -- | -- | -- | 1.33E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.84E-06 | -- | -- | -- | 5.52E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.38E-07 | -- | -- | -- | 1.07E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.47E-07 | -- | -- | -- | 3.36E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.03E-14 | -- | -- | -- | 4.02E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.36E-10 | -- | -- | -- | 3.39E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.00E-09 | -- | -- | -- | 4.86E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.00E-05 | -- | -- | -- | 1.17E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.67E-09 | -- | -- | -- | 3.37E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.76E-08 | -- | -- | -- | 1.07E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.61E-08 | -- | -- | -- | 2.80E-10 | -- | -- | -- |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.71E-07 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.96E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.66E-15 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.77E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.78E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.89E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.99E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.60E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.70E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.80E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.49E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.01E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.63E-08 |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Project Alone Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.47E-12 | -- | -- | -- | 1.92E-13 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.86E-13 | -- | -- | -- | 5.48E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.68E-12 | -- | -- | -- | 2.86E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.38E-06 | -- | -- | -- | 7.49E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.11E-05 | -- | -- | -- | 1.30E-07 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.23E-17 | -- | -- | -- | 3.29E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.18E-14 | -- | -- | -- | 5.03E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.41E-14 | -- | -- | -- | 9.37E-15 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.79E-15 | -- | -- | -- | 1.47E-16 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.83E-15 | -- | -- | -- | 4.53E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.17E-10 | -- | -- | -- | 1.23E-11 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.80E-13 | -- | -- | -- | 3.04E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.90E-14 | -- | -- | -- | 1.90E-15 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.71E-11 | -- | -- | -- | 2.88E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.03E-09 | -- | -- | -- | 4.01E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.10E-11 | -- | -- | -- | 3.46E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 7.79E-07 | -- | -- | -- | 3.02E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.03E-07 | -- | -- | -- | 1.20E-09 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.10E-09 | -- | -- | -- | 4.26E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 9.81E-08 | -- | -- | -- | 1.14E-09 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.06E-09 | -- | -- | -- | 2.35E-10 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.59E-06 | -- | -- | -- | 1.41E-07 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 7.25E-11 | -- | -- | -- | 1.13E-12 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.55E-08 | -- | -- | -- | 5.41E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.70E-07 | -- | -- | -- | 1.83E-08 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.62E-05 | -- | -- | -- | 3.79E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.05E-06 | -- | -- | -- | 1.37E-07 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.93E-07 | -- | -- | -- | 3.05E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.05E-07 | -- | -- | -- | 9.59E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.96E-14 | -- | -- | -- | 1.15E-15 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.25E-09 | -- | -- | -- | 9.68E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.43E-08 | -- | -- | -- | 1.39E-09 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 8.57E-05 | -- | -- | -- | 3.33E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.48E-08 | -- | -- | -- | 9.62E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.88E-08 | -- | -- | -- | 3.06E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.03E-07 | -- | -- | -- | 8.01E-10 | -- | -- | -- |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Project Alone Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.41E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.96E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.29E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.29E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.09E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.44E-11 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.09E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.92E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.30E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.36E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.18E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.24E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.60E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.18E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-07 |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | 9.54E-12 | -- | -- | -- | -- | -- | 6.91E-12 | -- | 1.65E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | 7.17E-13 | -- | -- | -- | -- | -- | 8.49E-13 | -- | 1.57E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | 4.12E-11 | -- | -- | -- | -- | -- | 3.11E-11 | -- | 7.23E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | 8.76E-08 | -- | -- | -- | -- | -- | 1.69E-06 | -- | 1.77E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | 5.77E-07 | -- | -- | -- | -- | -- | 1.78E-07 | -- | 7.55E-07 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | 1.20E-11 | -- | -- | -- | -- | -- | -- | -- | 1.20E-11 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | 3.85E-08 | -- | -- | -- | -- | -- | 7.75E-10 | -- | 3.93E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | 7.62E-09 | -- | -- | -- | -- | -- | -- | -- | 7.62E-09 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | 7.93E-10 | -- | -- | -- | -- | -- | -- | -- | 7.93E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | 9.08E-09 | -- | -- | -- | -- | -- | -- | -- | 9.08E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 4.55E-09 | -- | -- | -- | -- | -- | 4.00E-09 | -- | 8.54E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 5.80E-10 | -- | -- | -- | -- | -- | 2.07E-10 | -- | 7.87E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 8.70E-11 | -- | -- | -- | -- | -- | 2.97E-11 | -- | 1.17E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 2.28E-09 | -- | -- | -- | -- | -- | 9.83E-09 | -- | 1.21E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 2.90E-09 | -- | -- | -- | -- | -- | 1.88E-10 | -- | 3.09E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | 1.56E-07 | -- | -- | -- | -- | -- | 1.24E-07 | -- | 2.80E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | 3.44E-05 | -- | -- | -- | -- | -- | 7.02E-07 | -- | 3.51E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | 7.04E-06 | -- | -- | -- | -- | -- | 1.44E-07 | -- | 7.18E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 5.31E-08 | -- | -- | -- | -- | -- | 1.08E-09 | -- | 5.42E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 4.03E-07 | -- | -- | -- | -- | -- | 8.23E-09 | -- | 4.11E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | 3.85E-06 | -- | -- | -- | -- | -- | 7.88E-08 | -- | 3.93E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | 6.90E-05 | -- | -- | -- | -- | -- | 1.41E-06 | -- | 7.04E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | 7.55E-09 | -- | -- | -- | -- | -- | 1.54E-10 | -- | 7.70E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | 1.61E-06 | -- | -- | -- | -- | -- | 6.58E-08 | -- | 1.68E-06 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | 2.08E-05 | -- | -- | -- | -- | -- | 1.70E-07 | -- | 2.09E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | 6.21E-05 | -- | -- | -- | -- | -- | 4.34E-07 | -- | 6.25E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | 3.57E-06 | -- | -- | -- | -- | -- | 7.29E-08 | -- | 3.64E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | 2.38E-08 | -- | -- | -- | -- | -- | 4.87E-10 | -- | 2.43E-08 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | 2.16E-05 | -- | -- | -- | -- | -- | 8.84E-08 | -- | 2.17E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | 1.62E-11 | -- | -- | -- | -- | -- | -- | -- | 1.62E-11 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | 4.84E-07 | -- | -- | -- | -- | -- | 9.88E-09 | -- | 4.94E-07 |
| Silver | -- | -- | -- | -- | -- | -- | -- | 3.38E-06 | -- | -- | -- | -- | -- | 4.14E-08 | -- | 3.42E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | 2.41E-03 | -- | -- | -- | -- | -- | 4.93E-05 | -- | 2.46E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 | -- | -- | -- | -- | -- | 4.58E-09 | -- | 2.29E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | 2.85E-07 | -- | -- | -- | -- | -- | 5.81E-09 | -- | 2.90E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | 3.31E-06 | -- | -- | -- | -- | -- | 4.06E-08 | -- | 3.35E-06 |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**

**Project Alone Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | 7.36E-13 | 9.29E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-12 |
| Anthracene | -- | -- | -- | -- | 1.04E-13 | 2.78E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-13 |
| Fluorene | -- | -- | -- | -- | 9.55E-13 | 8.00E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.95E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | 6.64E-06 | 5.50E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.51E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | 1.66E-04 | 4.39E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | 2.78E-13 | 4.67E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.95E-12 |
| Bromoform | -- | -- | -- | -- | 7.79E-10 | 1.11E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | 2.54E-10 | 5.89E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.15E-09 |
| Chloroform | -- | -- | -- | -- | 1.00E-11 | 9.72E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | 2.14E-10 | 3.52E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | 6.47E-09 | 3.52E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.58E-07 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | 9.50E-11 | 8.95E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.04E-09 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | 7.51E-12 | 2.56E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | 1.16E-09 | 5.58E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.60E-07 |
| Pentachlorobenzene | -- | -- | -- | -- | 1.38E-08 | 5.26E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-07 |
| Pentachlorophenol | -- | -- | -- | -- | 2.98E-09 | 2.15E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-05 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | 2.89E-06 | 1.68E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-03 |
| Arsenic | -- | -- | -- | -- | 9.21E-07 | 8.61E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.70E-05 |
| Barium | -- | -- | -- | -- | 6.17E-10 | 1.30E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-07 |
| Beryllium | -- | -- | -- | -- | 6.53E-08 | 9.86E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.92E-06 |
| Boron | -- | -- | -- | -- | 2.76E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-07 |
| Cadmium | -- | -- | -- | -- | 1.05E-06 | 2.03E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-02 |
| Chromium (Total) | -- | -- | -- | -- | 2.61E-09 | 3.69E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-07 |
| Chromium VI | -- | -- | -- | -- | 5.57E-07 | 1.46E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-05 |
| Cobalt | -- | -- | -- | -- | 2.74E-05 | 5.08E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.35E-04 |
| Lead | -- | -- | -- | -- | 3.94E-06 | 1.59E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-03 |
| Mercury - Inorganic | -- | -- | -- | -- | 6.75E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.75E-06 |
| Methyl Mercury | -- | -- | -- | -- | 2.78E-07 | 3.52E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-03 |
| Nickel | -- | -- | -- | -- | 9.11E-06 | 8.26E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.35E-04 |
| Phosphorus | -- | -- | -- | -- | 8.02E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.02E-11 |
| Selenium | -- | -- | -- | -- | 6.79E-08 | 2.01E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-05 |
| Silver | -- | -- | -- | -- | 7.03E-07 | 7.31E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.38E-05 |
| Thallium | -- | -- | -- | -- | 6.44E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-03 |
| Tin | -- | -- | -- | -- | 1.91E-06 | 1.64E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-04 |
| Vanadium | -- | -- | -- | -- | 1.24E-07 | 1.11E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-05 |
| Zinc | -- | -- | -- | -- | 2.97E-08 | 7.54E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.54E-04 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 7.05E-13 | 3.03E-13 | 4.23E-14 | -- | 4.08E-13 | 9.88E-14 | 1.58E-13 | -- | 2.08E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.38E-18 | 5.93E-19 | 8.28E-20 | -- | 4.39E-19 | 1.06E-19 | 1.70E-19 | -- | 3.35E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.63E-18 | 7.00E-19 | 9.76E-20 | -- | 9.41E-19 | 2.28E-19 | 3.64E-19 | -- | 2.32E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.77E-17 | 1.62E-17 | 2.26E-18 | -- | 1.09E-17 | 2.64E-18 | 4.22E-18 | -- | 3.82E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.76E-14 | 7.55E-15 | 1.05E-15 | -- | 6.60E-15 | 1.60E-15 | 2.56E-15 | -- | 8.76E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.32E-14 | 1.86E-14 | 2.59E-15 | -- | 1.37E-14 | 3.33E-15 | 5.32E-15 | -- | 1.95E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.11E-11 | 1.77E-11 | 2.46E-12 | -- | 3.56E-12 | 8.63E-13 | 1.38E-12 | -- | 4.57E-10 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.70E-12 | 2.49E-13 | 2.17E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.61E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.90E-16 | 4.75E-16 | 2.44E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-15 |
| Carbon Tetrachloride | 3.26E-16 | 4.33E-15 | 1.56E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.91E-15 |
| Dichloromethane | 5.57E-14 | 3.80E-13 | 1.73E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.27E-13 | 1.25E-13 | 1.73E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-13 |
| Pentachlorophenol | 4.06E-13 | 1.98E-11 | 3.31E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.28E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 5.59E-11 | 9.20E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 5.28E-13 | 2.27E-13 | 3.17E-14 | -- | 3.05E-13 | 7.40E-14 | 1.18E-13 | -- | 1.46E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.03E-18 | 4.44E-19 | 6.20E-20 | -- | 3.29E-19 | 7.97E-20 | 1.27E-19 | -- | 2.51E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.22E-18 | 5.24E-19 | 7.32E-20 | -- | 7.05E-19 | 1.71E-19 | 2.73E-19 | -- | 1.74E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.83E-17 | 1.22E-17 | 1.70E-18 | -- | 8.17E-18 | 1.98E-18 | 3.16E-18 | -- | 2.86E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.32E-14 | 5.66E-15 | 7.89E-16 | -- | 4.94E-15 | 1.20E-15 | 1.91E-15 | -- | 6.56E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.24E-14 | 1.39E-14 | 1.94E-15 | -- | 1.03E-14 | 2.49E-15 | 3.99E-15 | -- | 1.34E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.95E-11 | 1.27E-11 | 1.77E-12 | -- | 2.56E-12 | 6.20E-13 | 9.91E-13 | -- | 3.18E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.27E-12 | 1.87E-13 | 1.49E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 3.67E-16 | 3.56E-16 | 1.68E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.76E-16 |
| Carbon Tetrachloride | 2.44E-16 | 3.25E-15 | 1.07E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-15 |
| Dichloromethane | 4.17E-14 | 2.85E-13 | 1.19E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.55E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 9.48E-14 | 9.37E-14 | 1.19E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-13 |
| Pentachlorophenol | 3.04E-13 | 1.48E-11 | 2.27E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.13E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 4.02E-11 | 6.61E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.13E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.21E-12 | 9.48E-13 | 1.32E-13 | -- | 1.27E-12 | 3.09E-13 | 4.94E-13 | -- | 4.49E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 4.32E-18 | 1.86E-18 | 2.59E-19 | -- | 1.37E-18 | 3.33E-19 | 5.31E-19 | -- | 1.05E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 5.09E-18 | 2.19E-18 | 3.05E-19 | -- | 2.94E-18 | 7.13E-19 | 1.14E-18 | -- | 7.14E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.18E-16 | 5.08E-17 | 7.08E-18 | -- | 3.41E-17 | 8.27E-18 | 1.32E-17 | -- | 1.19E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 5.49E-14 | 2.36E-14 | 3.30E-15 | -- | 2.06E-14 | 5.00E-15 | 7.99E-15 | -- | 2.73E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.35E-13 | 5.81E-14 | 8.11E-15 | -- | 4.30E-14 | 1.04E-14 | 1.66E-14 | -- | 3.29E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.15E-11 | 3.94E-11 | 5.49E-12 | -- | 7.94E-12 | 1.92E-12 | 3.07E-12 | -- | 8.43E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.30E-12 | 7.79E-13 | 3.61E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.25E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.53E-15 | 1.49E-15 | 4.07E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-15 |
| Carbon Tetrachloride | 1.02E-15 | 1.36E-14 | 2.60E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-14 |
| Dichloromethane | 1.74E-13 | 1.19E-12 | 2.88E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.96E-13 | 3.91E-13 | 2.88E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-12 |
| Pentachlorophenol | 1.27E-12 | 6.19E-11 | 5.51E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.25E-10 | 2.05E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-09 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.09E-13 | 2.62E-13 | 3.65E-14 | -- | 3.52E-13 | 8.53E-14 | 1.36E-13 | -- | 1.76E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.19E-18 | 5.12E-19 | 7.14E-20 | -- | 3.79E-19 | 9.18E-20 | 1.47E-19 | -- | 2.89E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.40E-18 | 6.04E-19 | 8.43E-20 | -- | 8.12E-19 | 1.97E-19 | 3.14E-19 | -- | 2.00E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.26E-17 | 1.40E-17 | 1.95E-18 | -- | 9.41E-18 | 2.28E-18 | 3.65E-18 | -- | 3.30E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.52E-14 | 6.52E-15 | 9.10E-16 | -- | 5.70E-15 | 1.38E-15 | 2.21E-15 | -- | 7.56E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.73E-14 | 1.60E-14 | 2.24E-15 | -- | 1.19E-14 | 2.87E-15 | 4.59E-15 | -- | 1.64E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.22E-11 | 9.52E-12 | 1.33E-12 | -- | 1.92E-12 | 4.66E-13 | 7.44E-13 | -- | 2.07E-10 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.46E-12 | 2.15E-13 | 1.82E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.23E-16 | 4.10E-16 | 2.05E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-15 |
| Carbon Tetrachloride | 2.82E-16 | 3.74E-15 | 1.31E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.24E-15 |
| Dichloromethane | 4.81E-14 | 3.28E-13 | 1.45E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.09E-13 | 1.08E-13 | 1.45E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-13 |
| Pentachlorophenol | 3.51E-13 | 1.71E-11 | 2.78E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.17E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 3.02E-11 | 4.96E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 8.83E-13 | 3.80E-13 | 5.30E-14 | -- | 5.11E-13 | 1.24E-13 | 1.98E-13 | -- | 2.59E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.73E-18 | 7.43E-19 | 1.04E-19 | -- | 5.49E-19 | 1.33E-19 | 2.13E-19 | -- | 4.20E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.04E-18 | 8.77E-19 | 1.22E-19 | -- | 1.18E-18 | 2.86E-19 | 4.56E-19 | -- | 2.91E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 4.73E-17 | 2.03E-17 | 2.84E-18 | -- | 1.37E-17 | 3.31E-18 | 5.29E-18 | -- | 4.79E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.20E-14 | 9.46E-15 | 1.32E-15 | -- | 8.27E-15 | 2.00E-15 | 3.20E-15 | -- | 1.10E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.42E-14 | 2.33E-14 | 3.25E-15 | -- | 1.72E-14 | 4.17E-15 | 6.67E-15 | -- | 2.45E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.90E-11 | 1.68E-11 | 2.34E-12 | -- | 3.38E-12 | 8.20E-13 | 1.31E-12 | -- | 3.92E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E-12 | 3.12E-13 | 2.73E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 6.13E-16 | 5.95E-16 | 3.08E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-15 |
| Carbon Tetrachloride | 4.09E-16 | 5.43E-15 | 1.97E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.15E-15 |
| Dichloromethane | 6.98E-14 | 4.77E-13 | 2.18E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.95E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.59E-13 | 1.57E-13 | 2.17E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-13 |
| Pentachlorophenol | 5.09E-13 | 2.48E-11 | 4.17E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.16E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 5.31E-11 | 8.74E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.18E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.99E-13 | 1.72E-13 | 2.40E-14 | -- | 2.31E-13 | 5.60E-14 | 8.94E-14 | -- | 1.65E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 7.81E-19 | 3.36E-19 | 4.69E-20 | -- | 2.48E-19 | 6.02E-20 | 9.61E-20 | -- | 1.90E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 9.21E-19 | 3.96E-19 | 5.53E-20 | -- | 5.32E-19 | 1.29E-19 | 2.06E-19 | -- | 1.35E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.14E-17 | 9.19E-18 | 1.28E-18 | -- | 6.17E-18 | 1.50E-18 | 2.39E-18 | -- | 2.17E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 9.94E-15 | 4.28E-15 | 5.97E-16 | -- | 3.74E-15 | 9.06E-16 | 1.45E-15 | -- | 5.00E-14 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.45E-14 | 1.05E-14 | 1.47E-15 | -- | 7.78E-15 | 1.89E-15 | 3.01E-15 | -- | 1.75E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.40E-11 | 6.01E-12 | 8.38E-13 | -- | 1.21E-12 | 2.94E-13 | 4.69E-13 | -- | 1.50E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 9.60E-13 | 1.41E-13 | 1.96E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.77E-16 | 2.69E-16 | 2.21E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.38E-16 |
| Carbon Tetrachloride | 1.85E-16 | 2.45E-15 | 1.42E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-15 |
| Dichloromethane | 3.15E-14 | 2.15E-13 | 1.56E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 7.17E-14 | 7.08E-14 | 1.56E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-13 |
| Pentachlorophenol | 2.30E-13 | 1.12E-11 | 2.99E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.90E-11 | 3.13E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.36E-12 | 5.86E-13 | 8.18E-14 | -- | 7.88E-13 | 1.91E-13 | 3.05E-13 | -- | 3.13E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.67E-18 | 1.15E-18 | 1.60E-19 | -- | 8.48E-19 | 2.06E-19 | 3.28E-19 | -- | 6.48E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.15E-18 | 1.35E-18 | 1.89E-19 | -- | 1.82E-18 | 4.41E-19 | 7.04E-19 | -- | 4.43E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 7.30E-17 | 3.14E-17 | 4.38E-18 | -- | 2.11E-17 | 5.11E-18 | 8.17E-18 | -- | 7.38E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.40E-14 | 1.46E-14 | 2.04E-15 | -- | 1.28E-14 | 3.09E-15 | 4.94E-15 | -- | 1.69E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 8.35E-14 | 3.59E-14 | 5.01E-15 | -- | 2.66E-14 | 6.44E-15 | 1.03E-14 | -- | 2.53E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.23E-11 | 2.25E-11 | 3.14E-12 | -- | 4.53E-12 | 1.10E-12 | 1.76E-12 | -- | 4.72E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 3.28E-12 | 4.81E-13 | 2.80E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 9.47E-16 | 9.18E-16 | 3.15E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-15 |
| Carbon Tetrachloride | 6.31E-16 | 8.38E-15 | 2.02E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.48E-15 |
| Dichloromethane | 1.08E-13 | 7.35E-13 | 2.23E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.17E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.45E-13 | 2.42E-13 | 2.23E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.29E-13 |
| Pentachlorophenol | 7.85E-13 | 3.82E-11 | 4.27E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 7.12E-11 | 1.17E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.40E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.43E-12 | 1.05E-12 | 1.46E-13 | -- | 1.41E-12 | 3.41E-13 | 5.45E-13 | -- | 4.29E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 4.76E-18 | 2.05E-18 | 2.86E-19 | -- | 1.51E-18 | 3.67E-19 | 5.86E-19 | -- | 1.16E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 5.62E-18 | 2.42E-18 | 3.37E-19 | -- | 3.25E-18 | 7.87E-19 | 1.26E-18 | -- | 7.83E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.30E-16 | 5.60E-17 | 7.82E-18 | -- | 3.77E-17 | 9.13E-18 | 1.46E-17 | -- | 1.32E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 6.07E-14 | 2.61E-14 | 3.64E-15 | -- | 2.28E-14 | 5.53E-15 | 8.83E-15 | -- | 3.01E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.49E-13 | 6.42E-14 | 8.95E-15 | -- | 4.74E-14 | 1.15E-14 | 1.84E-14 | -- | 2.68E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.67E-11 | 4.16E-11 | 5.80E-12 | -- | 8.38E-12 | 2.03E-12 | 3.25E-12 | -- | 8.52E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.85E-12 | 8.60E-13 | 2.92E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.47E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.69E-15 | 1.64E-15 | 3.29E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-15 |
| Carbon Tetrachloride | 1.13E-15 | 1.50E-14 | 2.10E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-14 |
| Dichloromethane | 1.92E-13 | 1.31E-12 | 2.33E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.37E-13 | 4.32E-13 | 2.32E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-12 |
| Pentachlorophenol | 1.40E-12 | 6.83E-11 | 4.46E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.32E-10 | 2.17E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-09 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.28E-12 | 1.41E-12 | 1.97E-13 | -- | 1.90E-12 | 4.60E-13 | 7.35E-13 | -- | 9.66E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 6.42E-18 | 2.76E-18 | 3.85E-19 | -- | 2.04E-18 | 4.95E-19 | 7.91E-19 | -- | 2.81E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 7.58E-18 | 3.26E-18 | 4.55E-19 | -- | 4.38E-18 | 1.06E-18 | 1.70E-18 | -- | 1.90E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.76E-16 | 7.56E-17 | 1.05E-17 | -- | 5.08E-17 | 1.23E-17 | 1.97E-17 | -- | 3.20E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 8.18E-14 | 3.52E-14 | 4.91E-15 | -- | 3.07E-14 | 7.45E-15 | 1.19E-14 | -- | 7.31E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.01E-13 | 8.66E-14 | 1.21E-14 | -- | 6.40E-14 | 1.55E-14 | 2.48E-14 | -- | 5.81E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.42E-10 | 6.11E-11 | 8.53E-12 | -- | 1.23E-11 | 2.99E-12 | 4.77E-12 | -- | 2.24E-09 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.75E-11 | 1.89E-12 | 9.87E-11 | -- | -- | -- | -- | 4.84E-11 | 9.80E-11 | 9.86E-13 | 3.52E-13 | 3.25E-13 | -- | 3.71E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 5.05E-15 | 3.61E-15 | 1.11E-18 | -- | -- | -- | -- | 2.22E-11 | 2.97E-11 | 8.04E-13 | 1.03E-14 | 9.55E-15 | -- | 5.27E-11 |
| Carbon Tetrachloride | 3.36E-15 | 3.29E-14 | 7.11E-17 | -- | -- | -- | -- | 4.19E-12 | 5.61E-12 | 1.52E-13 | 1.96E-15 | 1.81E-15 | -- | 1.00E-11 |
| Dichloromethane | 5.74E-13 | 2.89E-12 | 7.87E-16 | -- | -- | -- | -- | 1.61E-11 | 2.16E-11 | 5.86E-13 | 7.54E-15 | 6.96E-15 | -- | 4.21E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.31E-12 | 9.51E-13 | 7.86E-15 | -- | -- | -- | -- | 2.76E-11 | 3.76E-11 | 1.18E-12 | 1.78E-14 | 1.64E-14 | -- | 6.95E-11 |
| Pentachlorophenol | 4.19E-12 | 1.50E-10 | 1.51E-10 | -- | -- | -- | -- | 1.45E-11 | 2.94E-11 | 2.81E-13 | 7.99E-17 | 7.37E-17 | -- | 4.08E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 4.29E-10 | 5.20E-11 | -- | -- | -- | -- | -- | 1.55E-09 | 4.26E-10 | 5.58E-11 | 8.60E-13 | 7.93E-13 | -- | 4.99E-09 |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.94E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.04E-13 | 4.48E-14 | -- | -- | 7.74E-14 | 1.85E-14 | 2.97E-14 | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.04E-19 | 8.77E-20 | -- | -- | 8.33E-20 | 1.99E-20 | 3.20E-20 | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.41E-19 | 1.04E-19 | -- | -- | 1.79E-19 | 4.28E-20 | 6.86E-20 | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.58E-18 | 2.40E-18 | -- | -- | 2.07E-18 | 4.96E-19 | 7.95E-19 | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.60E-15 | 1.12E-15 | -- | -- | 1.25E-15 | 3.00E-16 | 4.81E-16 | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 6.39E-15 | 2.75E-15 | -- | -- | 2.61E-15 | 6.25E-16 | 1.00E-15 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.61E-01 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.40E-12 | 2.75E-12 | -- | -- | 7.12E-13 | 1.70E-13 | 2.73E-13 | -- | -- |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.34E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-17 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.75E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-14 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-11 |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.41E-14 | -- | -- | -- | 1.97E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 6.66E-20 | -- | -- | -- | 2.12E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 7.86E-20 | -- | -- | -- | 4.54E-20 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.82E-18 | -- | -- | -- | 5.27E-19 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 8.48E-16 | -- | -- | -- | 3.19E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.09E-15 | -- | -- | -- | 6.63E-16 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.26E-12 | -- | -- | -- | 1.09E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.37E-14 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.78E-20 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-12 |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 7.38E-14 | -- | -- | -- | 4.27E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.44E-19 | -- | -- | -- | 4.59E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.70E-19 | -- | -- | -- | 9.85E-20 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.95E-18 | -- | -- | -- | 1.14E-18 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.84E-15 | -- | -- | -- | 6.91E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.53E-15 | -- | -- | -- | 1.44E-15 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.60E-12 | -- | -- | -- | 3.12E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.96E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-12 |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | 2.29E-12 | -- | -- | -- | -- | -- | 9.64E-13 | 3.25E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | 3.54E-12 | -- | -- | -- | -- | -- | -- | 3.54E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | 4.04E-13 | -- | -- | -- | -- | -- | 3.82E-13 | 7.85E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | 1.08E-11 | -- | -- | -- | -- | -- | -- | 1.08E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | 5.52E-13 | -- | -- | -- | -- | -- | -- | 5.52E-13 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | 6.54E-11 | -- | -- | -- | -- | -- | 1.56E-14 | 6.54E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | 1.84E-09 | -- | -- | -- | -- | -- | 4.46E-11 | 1.89E-09 |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Project Alone Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | 8.33E-12 | 7.04E-11 | -- | -- | -- | -- | -- | -- | -- | -- | 7.88E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | 1.23E-13 | 9.32E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-12 |
| Carbon Tetrachloride | -- | -- | -- | 2.31E-14 | 2.86E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-13 |
| Dichloromethane | -- | -- | -- | 7.96E-14 | 2.42E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | 4.80E-13 | 1.23E-10 | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-10 |
| Pentachlorophenol | -- | -- | -- | 2.15E-12 | 8.23E-09 | -- | -- | -- | -- | -- | -- | -- | -- | 8.24E-09 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | 4.14E-10 | 2.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-08 |

# APPENDIX I-9

Multi-Pathway Results – Upset Operations (Process Upset Case) – 400,000 tpy

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.99E-11 | 8.55E-12 | 4.68E-12 | -- | 7.04E-12 | 2.20E-12 | 3.39E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.93E-12 | 1.69E-12 | 9.24E-13 | -- | 2.02E-12 | 6.28E-13 | 9.71E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.97E-11 | 1.28E-11 | 6.99E-12 | -- | 1.05E-11 | 3.27E-12 | 5.06E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.11E-05 | 4.79E-06 | 2.62E-06 | -- | 2.76E-06 | 8.61E-07 | 1.33E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.59E-05 | 2.40E-05 | 1.32E-05 | -- | 2.97E-06 | 9.25E-07 | 1.43E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.41E-16 | 1.47E-16 | 8.03E-17 | -- | 1.21E-16 | 3.77E-17 | 5.82E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.51E-14 | 4.09E-14 | 2.24E-14 | -- | 1.85E-14 | 5.77E-15 | 8.92E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.95E-13 | 8.37E-14 | 4.58E-14 | -- | 3.45E-13 | 1.07E-13 | 1.66E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.05E-14 | 1.31E-14 | 7.19E-15 | -- | 5.41E-15 | 1.69E-15 | 2.61E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.70E-14 | 2.02E-14 | 1.11E-14 | -- | 1.67E-14 | 5.19E-15 | 8.03E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.55E-09 | 1.10E-09 | 6.01E-10 | -- | 4.52E-10 | 1.41E-10 | 2.18E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 7.90E-12 | 3.40E-12 | 1.86E-12 | -- | 1.12E-12 | 3.49E-13 | 5.40E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.96E-13 | 1.70E-13 | 9.31E-14 | -- | 7.00E-14 | 2.18E-14 | 3.38E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.61E-10 | 1.98E-10 | 1.08E-10 | -- | 1.06E-10 | 3.31E-11 | 5.11E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.34E-09 | 3.58E-09 | 1.96E-09 | -- | 1.48E-10 | 4.60E-11 | 7.11E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 6.53E-10 | 2.81E-10 | 1.54E-10 | -- | 1.27E-10 | 3.97E-11 | 6.13E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.89E-06 | 1.67E-06 | 9.16E-07 | -- | 6.89E-07 | 2.15E-07 | 3.32E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.15E-07 | 2.21E-07 | 1.21E-07 | -- | 2.73E-08 | 8.52E-09 | 1.32E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.48E-09 | 2.36E-09 | 1.29E-09 | -- | 9.70E-10 | 3.02E-10 | 4.68E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.91E-07 | 2.11E-07 | 1.16E-07 | -- | 2.61E-08 | 8.12E-09 | 1.26E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.03E-08 | 1.30E-08 | 7.13E-09 | -- | 5.36E-09 | 1.67E-09 | 2.58E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.29E-05 | 5.56E-06 | 3.04E-06 | -- | 3.20E-06 | 9.99E-07 | 1.54E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.62E-10 | 1.56E-10 | 8.53E-11 | -- | 2.57E-11 | 8.00E-12 | 1.24E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.73E-08 | 3.32E-08 | 1.82E-08 | -- | 1.23E-08 | 3.84E-09 | 5.94E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.35E-06 | 1.01E-06 | 5.54E-07 | -- | 4.16E-07 | 1.30E-07 | 2.01E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 8.12E-05 | 3.49E-05 | 1.91E-05 | -- | 8.63E-07 | 2.69E-07 | 4.16E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.38E-05 | 1.45E-05 | 7.97E-06 | -- | 3.00E-06 | 9.34E-07 | 1.44E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.97E-06 | 8.45E-07 | 4.63E-07 | -- | 6.96E-07 | 2.17E-07 | 3.36E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.53E-06 | 1.52E-06 | 8.30E-07 | -- | 2.18E-06 | 6.81E-07 | 1.05E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.48E-13 | 6.35E-14 | 3.48E-14 | -- | 2.62E-14 | 8.16E-15 | 1.26E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.23E-09 | 2.68E-09 | 1.47E-09 | -- | 2.20E-11 | 6.87E-12 | 1.06E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.14E-08 | 3.07E-08 | 1.68E-08 | -- | 3.16E-08 | 9.85E-09 | 1.52E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.28E-04 | 1.84E-04 | 1.01E-04 | -- | 7.58E-06 | 2.36E-06 | 3.65E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.24E-07 | 5.32E-08 | 2.92E-08 | -- | 2.19E-08 | 6.83E-09 | 1.06E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.94E-07 | 1.69E-07 | 9.28E-08 | -- | 6.98E-08 | 2.18E-08 | 3.36E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.15E-07 | 2.21E-07 | 1.21E-07 | -- | 1.82E-08 | 5.69E-09 | 8.79E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.68E-12 | 5.24E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-12 | 1.16E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.72E-12 | 7.60E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-04 | 6.02E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.89E-03 | 2.99E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-17 | 8.81E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-15 | 1.98E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-13 | 1.05E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-15 | 6.40E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-14 | 1.21E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-09 | 7.70E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-12 | 1.79E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-13 | 1.02E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-10 | 1.55E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-09 | 2.02E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-08 | 3.74E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.72E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.06E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.64E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.49E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.17E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.52E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.79E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.27E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.90E-07 |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.59E-11 | 2.83E-11 | 6.51E-12 | -- | 5.12E-12 | 1.47E-12 | 2.27E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.30E-11 | 5.59E-12 | 1.28E-12 | -- | 1.47E-12 | 4.21E-13 | 6.49E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.83E-11 | 4.23E-11 | 9.71E-12 | -- | 7.64E-12 | 2.19E-12 | 3.38E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.69E-05 | 1.59E-05 | 3.65E-06 | -- | 2.01E-06 | 5.77E-07 | 8.89E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.85E-04 | 7.96E-05 | 1.83E-05 | -- | 2.16E-06 | 6.20E-07 | 9.55E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.13E-15 | 4.86E-16 | 1.12E-16 | -- | 8.78E-17 | 2.52E-17 | 3.89E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.15E-13 | 1.35E-13 | 3.11E-14 | -- | 1.35E-14 | 3.87E-15 | 5.96E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.45E-13 | 2.77E-13 | 6.37E-14 | -- | 2.51E-13 | 7.20E-14 | 1.11E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.01E-13 | 4.35E-14 | 1.00E-14 | -- | 3.93E-15 | 1.13E-15 | 1.74E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.56E-13 | 6.70E-14 | 1.54E-14 | -- | 1.21E-14 | 3.48E-15 | 5.36E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.46E-09 | 3.64E-09 | 8.36E-10 | -- | 3.29E-10 | 9.44E-11 | 1.46E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.62E-11 | 1.13E-11 | 2.59E-12 | -- | 8.14E-13 | 2.34E-13 | 3.60E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.31E-12 | 5.63E-13 | 1.29E-13 | -- | 5.09E-14 | 1.46E-14 | 2.25E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-09 | 6.56E-10 | 1.51E-10 | -- | 7.71E-11 | 2.21E-11 | 3.41E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.76E-08 | 1.19E-08 | 2.73E-09 | -- | 1.07E-10 | 3.08E-11 | 4.75E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.16E-09 | 9.30E-10 | 2.14E-10 | -- | 9.25E-11 | 2.66E-11 | 4.10E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.29E-05 | 5.54E-06 | 1.27E-06 | -- | 5.01E-07 | 1.44E-07 | 2.22E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.71E-06 | 7.33E-07 | 1.68E-07 | -- | 1.99E-08 | 5.71E-09 | 8.80E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.82E-08 | 7.80E-09 | 1.79E-09 | -- | 7.05E-10 | 2.03E-10 | 3.12E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.63E-06 | 6.99E-07 | 1.61E-07 | -- | 1.89E-08 | 5.44E-09 | 8.39E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.00E-07 | 4.31E-08 | 9.91E-09 | -- | 3.90E-09 | 1.12E-09 | 1.73E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.28E-05 | 1.84E-05 | 4.23E-06 | -- | 2.33E-06 | 6.69E-07 | 1.03E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.20E-09 | 5.16E-10 | 1.19E-10 | -- | 1.87E-11 | 5.36E-12 | 8.26E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.56E-07 | 1.10E-07 | 2.53E-08 | -- | 8.96E-09 | 2.57E-09 | 3.96E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 7.79E-06 | 3.35E-06 | 7.69E-07 | -- | 3.03E-07 | 8.69E-08 | 1.34E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.69E-04 | 1.16E-04 | 2.66E-05 | -- | 6.27E-07 | 1.80E-07 | 2.78E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.12E-04 | 4.82E-05 | 1.11E-05 | -- | 2.18E-06 | 6.25E-07 | 9.64E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.52E-06 | 2.80E-06 | 6.44E-07 | -- | 5.06E-07 | 1.45E-07 | 2.24E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.17E-05 | 5.02E-06 | 1.15E-06 | -- | 1.59E-06 | 4.56E-07 | 7.03E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.90E-13 | 2.10E-13 | 4.84E-14 | -- | 1.90E-14 | 5.46E-15 | 8.42E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.06E-08 | 8.87E-09 | 2.04E-09 | -- | 1.60E-11 | 4.60E-12 | 7.09E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.37E-07 | 1.02E-07 | 2.34E-08 | -- | 2.30E-08 | 6.60E-09 | 1.02E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.42E-03 | 6.10E-04 | 1.40E-04 | -- | 5.51E-06 | 1.58E-06 | 2.44E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.10E-07 | 1.76E-07 | 4.05E-08 | -- | 1.59E-08 | 4.58E-09 | 7.06E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.31E-06 | 5.61E-07 | 1.29E-07 | -- | 5.07E-08 | 1.46E-08 | 2.25E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.71E-06 | 7.34E-07 | 1.69E-07 | -- | 1.33E-08 | 3.81E-09 | 5.87E-09 | -- |

**Hazard Quotients for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.61E-10 | 5.35E-10 | 4.81E-11 | 2.06E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-09 |
| Anthracene | 3.20E-11 | 4.74E-11 | 6.72E-14 | 3.05E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-10 |
| Fluorene | 3.60E-10 | 5.35E-10 | 6.39E-13 | 8.60E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 6.37E-06 | 9.41E-06 | 1.21E-06 | 2.52E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.69E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.83E-05 | 3.16E-05 | 6.53E-06 | 4.80E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.05E-14 | 5.90E-14 | 3.44E-13 | 4.56E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-13 |
| Bromoform | 1.31E-11 | 1.95E-11 | 1.33E-11 | 1.13E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.64E-11 |
| Carbon Tetrachloride | 1.54E-11 | 2.26E-11 | 2.11E-10 | 1.26E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-10 |
| Chloroform | 6.98E-12 | 1.03E-11 | 3.49E-11 | 4.40E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.24E-11 |
| Trichlorofluoromethane (FREON 11) | 5.58E-12 | 8.14E-12 | 4.34E-11 | 6.43E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.75E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.39E-08 | 2.07E-08 | 3.04E-08 | 2.88E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.85E-08 |
| 1,2,4-Trichlorobenzene | 1.25E-10 | 1.86E-10 | 6.96E-11 | 9.89E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.22E-10 |
| 1,2-Dichlorobenzene | 1.47E-11 | 2.12E-11 | 1.10E-10 | 2.35E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-10 |
| Hexachlorobenzene | 1.31E-09 | 1.92E-09 | 1.33E-09 | 8.27E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.03E-09 |
| Pentachlorobenzene | 2.78E-08 | 4.13E-08 | 1.74E-09 | 1.44E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-07 |
| Pentachlorophenol | 1.63E-07 | 3.55E-09 | 1.21E-07 | 9.14E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.49E-05 | 1.55E-05 | 1.33E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.23E-05 |
| Arsenic | 3.25E-06 | 4.06E-07 | 4.68E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.34E-06 |
| Barium | 3.72E-08 | 2.20E-08 | 9.34E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.91E-08 |
| Beryllium | 4.60E-07 | 1.58E-07 | 8.36E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-06 |
| Boron | 7.34E-06 | 8.50E-06 | 6.88E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-05 |
| Cadmium | 1.65E-04 | 2.01E-04 | 9.40E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.45E-04 |
| Chromium (Total) | 3.34E-09 | 2.20E-10 | 1.85E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.44E-09 |
| Chromium VI | 7.12E-07 | 4.70E-08 | 3.95E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-06 |
| Cobalt | 1.05E-05 | 2.53E-06 | 1.87E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-05 |
| Lead | 1.50E-04 | 1.38E-04 | 8.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08E-04 |
| Mercury - Inorganic | 5.68E-05 | 6.11E-05 | 1.38E-05 | 6.27E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-04 |
| Methyl Mercury | 1.15E-05 | 7.20E-06 | 2.21E-06 | 2.65E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-05 |
| Nickel | 1.20E-05 | 4.09E-06 | 3.21E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.70E-05 |
| Phosphorus | 5.01E-11 | 6.44E-11 | 5.88E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-10 |
| Selenium | 2.14E-07 | 1.51E-08 | 1.56E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.62E-07 |
| Silver | 2.25E-06 | 1.23E-06 | 8.12E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.96E-06 |
| Thallium | 1.07E-03 | 4.57E-05 | 1.95E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.29E-03 |
| Tin | 2.18E-07 | 1.39E-07 | 8.44E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-06 |
| Vanadium | 3.84E-07 | 1.63E-07 | 1.34E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-06 |
| Zinc | 5.59E-06 | 6.22E-06 | 5.27E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-05 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.49E-11 | 6.41E-12 | 3.51E-12 | -- | 5.28E-12 | 1.65E-12 | 2.54E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.94E-12 | 1.26E-12 | 6.92E-13 | -- | 1.51E-12 | 4.71E-13 | 7.27E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.22E-11 | 9.56E-12 | 5.23E-12 | -- | 7.87E-12 | 2.45E-12 | 3.79E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 8.32E-06 | 3.58E-06 | 1.96E-06 | -- | 2.06E-06 | 6.43E-07 | 9.94E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.00E-05 | 1.72E-05 | 9.42E-06 | -- | 2.12E-06 | 6.62E-07 | 1.02E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.56E-16 | 1.10E-16 | 6.02E-17 | -- | 9.05E-17 | 2.82E-17 | 4.36E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.12E-14 | 3.06E-14 | 1.68E-14 | -- | 1.39E-14 | 4.32E-15 | 6.69E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.46E-13 | 6.27E-14 | 3.43E-14 | -- | 2.58E-13 | 8.05E-14 | 1.24E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.29E-14 | 9.84E-15 | 5.39E-15 | -- | 4.05E-15 | 1.26E-15 | 1.95E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.53E-14 | 1.52E-14 | 8.30E-15 | -- | 1.25E-14 | 3.89E-15 | 6.02E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.91E-09 | 8.23E-10 | 4.51E-10 | -- | 3.39E-10 | 1.06E-10 | 1.63E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.92E-12 | 2.55E-12 | 1.39E-12 | -- | 8.39E-13 | 2.61E-13 | 4.04E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.96E-13 | 1.27E-13 | 6.98E-14 | -- | 5.25E-14 | 1.64E-14 | 2.53E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.45E-10 | 1.48E-10 | 8.13E-11 | -- | 7.95E-11 | 2.48E-11 | 3.83E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.25E-09 | 2.69E-09 | 1.47E-09 | -- | 1.11E-10 | 3.45E-11 | 5.33E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.89E-10 | 2.10E-10 | 1.15E-10 | -- | 9.53E-11 | 2.97E-11 | 4.59E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.79E-06 | 1.20E-06 | 6.58E-07 | -- | 4.95E-07 | 1.54E-07 | 2.38E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.70E-07 | 1.59E-07 | 8.70E-08 | -- | 1.96E-08 | 6.12E-09 | 9.46E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.93E-09 | 1.69E-09 | 9.26E-10 | -- | 6.97E-10 | 2.17E-10 | 3.36E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.52E-07 | 1.51E-07 | 8.29E-08 | -- | 1.87E-08 | 5.83E-09 | 9.01E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.18E-08 | 9.35E-09 | 5.12E-09 | -- | 3.85E-09 | 1.20E-09 | 1.86E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.28E-06 | 3.99E-06 | 2.19E-06 | -- | 2.30E-06 | 7.17E-07 | 1.11E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.60E-10 | 1.12E-10 | 6.13E-11 | -- | 1.84E-11 | 5.75E-12 | 8.88E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.55E-08 | 2.39E-08 | 1.31E-08 | -- | 8.85E-09 | 2.76E-09 | 4.26E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.69E-06 | 7.26E-07 | 3.97E-07 | -- | 2.99E-07 | 9.32E-08 | 1.44E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 5.83E-05 | 2.51E-05 | 1.37E-05 | -- | 6.19E-07 | 1.93E-07 | 2.98E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.27E-05 | 9.76E-06 | 5.35E-06 | -- | 2.01E-06 | 6.27E-07 | 9.69E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.41E-06 | 6.06E-07 | 3.32E-07 | -- | 5.00E-07 | 1.56E-07 | 2.41E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.53E-06 | 1.09E-06 | 5.96E-07 | -- | 1.57E-06 | 4.89E-07 | 7.56E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.06E-13 | 4.56E-14 | 2.50E-14 | -- | 1.88E-14 | 5.86E-15 | 9.06E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.47E-09 | 1.92E-09 | 1.05E-09 | -- | 1.58E-11 | 4.94E-12 | 7.63E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.13E-08 | 2.20E-08 | 1.21E-08 | -- | 2.27E-08 | 7.08E-09 | 1.09E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.07E-04 | 1.32E-04 | 7.24E-05 | -- | 5.44E-06 | 1.70E-06 | 2.62E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.88E-08 | 3.82E-08 | 2.09E-08 | -- | 1.57E-08 | 4.90E-09 | 7.58E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.83E-07 | 1.22E-07 | 6.66E-08 | -- | 5.01E-08 | 1.56E-08 | 2.41E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.70E-07 | 1.59E-07 | 8.71E-08 | -- | 1.31E-08 | 4.08E-09 | 6.31E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.00E-12 | 3.93E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-12 | 8.66E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-12 | 5.69E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-04 | 4.49E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-03 | 2.12E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.22E-17 | 6.60E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-15 | 1.48E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.27E-14 | 7.89E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-15 | 4.80E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.28E-15 | 9.04E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-09 | 5.77E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-12 | 1.34E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-13 | 7.68E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.42E-10 | 1.16E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-09 | 1.51E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-08 | 2.64E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.54E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.51E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.80E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.20E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.31E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.82E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.14E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.03E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.48E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.22E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.61E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.39E-07 |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 4.94E-11 | 2.12E-11 | 4.88E-12 | -- | 3.84E-12 | 1.10E-12 | 1.70E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.74E-12 | 4.19E-12 | 9.62E-13 | -- | 1.10E-12 | 3.15E-13 | 4.86E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 7.36E-11 | 3.17E-11 | 7.28E-12 | -- | 5.72E-12 | 1.64E-12 | 2.53E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.76E-05 | 1.19E-05 | 2.72E-06 | -- | 1.50E-06 | 4.31E-07 | 6.64E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.33E-04 | 5.70E-05 | 1.31E-05 | -- | 1.54E-06 | 4.44E-07 | 6.84E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 8.47E-16 | 3.64E-16 | 8.37E-17 | -- | 6.58E-17 | 1.89E-17 | 2.91E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.36E-13 | 1.01E-13 | 2.33E-14 | -- | 1.01E-14 | 2.90E-15 | 4.47E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 4.83E-13 | 2.08E-13 | 4.77E-14 | -- | 1.88E-13 | 5.39E-14 | 8.31E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 7.58E-14 | 3.26E-14 | 7.49E-15 | -- | 2.95E-15 | 8.46E-16 | 1.30E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.17E-13 | 5.02E-14 | 1.15E-14 | -- | 9.07E-15 | 2.61E-15 | 4.02E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 6.34E-09 | 2.73E-09 | 6.26E-10 | -- | 2.46E-10 | 7.07E-11 | 1.09E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.96E-11 | 8.43E-12 | 1.94E-12 | -- | 6.10E-13 | 1.75E-13 | 2.70E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 9.82E-13 | 4.22E-13 | 9.70E-14 | -- | 3.81E-14 | 1.10E-14 | 1.69E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.14E-09 | 4.92E-10 | 1.13E-10 | -- | 5.78E-11 | 1.66E-11 | 2.56E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.07E-08 | 8.90E-09 | 2.04E-09 | -- | 8.04E-11 | 2.31E-11 | 3.56E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.62E-09 | 6.97E-10 | 1.60E-10 | -- | 6.93E-11 | 1.99E-11 | 3.07E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.26E-06 | 3.98E-06 | 9.14E-07 | -- | 3.60E-07 | 1.03E-07 | 1.59E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.22E-06 | 5.26E-07 | 1.21E-07 | -- | 1.43E-08 | 4.10E-09 | 6.32E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.30E-08 | 5.60E-09 | 1.29E-09 | -- | 5.06E-10 | 1.45E-10 | 2.24E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.17E-06 | 5.01E-07 | 1.15E-07 | -- | 1.36E-08 | 3.90E-09 | 6.02E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.21E-08 | 3.10E-08 | 7.12E-09 | -- | 2.80E-09 | 8.04E-10 | 1.24E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.07E-05 | 1.32E-05 | 3.04E-06 | -- | 1.67E-06 | 4.80E-07 | 7.40E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.62E-10 | 3.71E-10 | 8.52E-11 | -- | 1.34E-11 | 3.85E-12 | 5.93E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.84E-07 | 7.91E-08 | 1.82E-08 | -- | 6.43E-09 | 1.85E-09 | 2.85E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.59E-06 | 2.40E-06 | 5.52E-07 | -- | 2.17E-07 | 6.24E-08 | 9.62E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.93E-04 | 8.30E-05 | 1.91E-05 | -- | 4.50E-07 | 1.29E-07 | 1.99E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.53E-05 | 3.24E-05 | 7.43E-06 | -- | 1.46E-06 | 4.20E-07 | 6.47E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.67E-06 | 2.01E-06 | 4.62E-07 | -- | 3.63E-07 | 1.04E-07 | 1.61E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.39E-06 | 3.61E-06 | 8.28E-07 | -- | 1.14E-06 | 3.27E-07 | 5.05E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.52E-13 | 1.51E-13 | 3.47E-14 | -- | 1.37E-14 | 3.92E-15 | 6.05E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.48E-08 | 6.37E-09 | 1.46E-09 | -- | 1.15E-11 | 3.31E-12 | 5.10E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.70E-07 | 7.30E-08 | 1.68E-08 | -- | 1.65E-08 | 4.74E-09 | 7.31E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.02E-03 | 4.38E-04 | 1.01E-04 | -- | 3.96E-06 | 1.14E-06 | 1.75E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.94E-07 | 1.27E-07 | 2.91E-08 | -- | 1.14E-08 | 3.28E-09 | 5.06E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.37E-07 | 4.03E-07 | 9.25E-08 | -- | 3.64E-08 | 1.05E-08 | 1.61E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.23E-06 | 5.27E-07 | 1.21E-07 | -- | 9.52E-09 | 2.73E-09 | 4.21E-09 | -- |

**Hazard Quotients for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 2.70E-10 | 4.01E-10 | 3.60E-11 | 1.54E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.43E-10 |
| Anthracene | 2.39E-11 | 3.55E-11 | 5.03E-14 | 2.10E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.63E-11 |
| Fluorene | 2.70E-10 | 4.01E-10 | 4.79E-13 | 5.91E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.94E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.75E-06 | 7.02E-06 | 9.06E-07 | 1.73E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.74E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.39E-05 | 2.27E-05 | 4.67E-06 | 3.30E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.03E-14 | 4.42E-14 | 2.58E-13 | 3.13E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.34E-13 |
| Bromoform | 9.83E-12 | 1.46E-11 | 9.96E-12 | 7.77E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-11 |
| Carbon Tetrachloride | 1.15E-11 | 1.69E-11 | 1.58E-10 | 8.64E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-10 |
| Chloroform | 5.22E-12 | 7.69E-12 | 2.62E-11 | 3.02E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.92E-11 |
| Trichlorofluoromethane (FREON 11) | 4.18E-12 | 6.10E-12 | 3.26E-11 | 4.42E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.31E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.04E-08 | 1.55E-08 | 2.28E-08 | 1.98E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-08 |
| 1,2,4-Trichlorobenzene | 9.37E-11 | 1.39E-10 | 5.22E-11 | 6.80E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-10 |
| 1,2-Dichlorobenzene | 1.10E-11 | 1.59E-11 | 8.27E-11 | 1.62E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-10 |
| Hexachlorobenzene | 9.77E-10 | 1.44E-09 | 9.98E-10 | 5.69E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.27E-09 |
| Pentachlorobenzene | 2.08E-08 | 3.09E-08 | 1.31E-09 | 9.90E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.48E-08 |
| Pentachlorophenol | 1.12E-07 | 2.66E-09 | 9.10E-08 | 6.28E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.76E-05 | 1.11E-05 | 9.53E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.44E-05 |
| Arsenic | 2.26E-06 | 2.91E-07 | 3.36E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-06 |
| Barium | 2.62E-08 | 1.58E-08 | 6.71E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.34E-08 |
| Beryllium | 3.22E-07 | 1.13E-07 | 6.00E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-06 |
| Boron | 5.23E-06 | 6.10E-06 | 4.94E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-05 |
| Cadmium | 1.18E-04 | 1.44E-04 | 6.75E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-04 |
| Chromium (Total) | 2.32E-09 | 1.58E-10 | 1.33E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.83E-09 |
| Chromium VI | 4.95E-07 | 3.37E-08 | 2.84E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.24E-07 |
| Cobalt | 7.33E-06 | 1.82E-06 | 1.34E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-05 |
| Lead | 1.06E-04 | 9.87E-05 | 5.96E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.07E-04 |
| Mercury - Inorganic | 3.84E-05 | 4.10E-05 | 9.29E-06 | 4.31E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-04 |
| Methyl Mercury | 8.07E-06 | 5.16E-06 | 1.59E-06 | 1.82E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-05 |
| Nickel | 8.40E-06 | 2.93E-06 | 2.30E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-05 |
| Phosphorus | 3.58E-11 | 4.62E-11 | 4.22E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-11 |
| Selenium | 1.49E-07 | 1.09E-08 | 1.12E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-07 |
| Silver | 1.58E-06 | 8.81E-07 | 5.83E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-06 |
| Thallium | 7.41E-04 | 3.28E-05 | 1.40E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-03 |
| Tin | 1.54E-07 | 1.00E-07 | 6.06E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30E-07 |
| Vanadium | 2.69E-07 | 1.17E-07 | 9.64E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-06 |
| Zinc | 3.98E-06 | 4.46E-06 | 3.78E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-05 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.22E-11 | 2.68E-11 | 1.47E-11 | -- | 2.20E-11 | 6.87E-12 | 1.06E-11 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.23E-11 | 5.28E-12 | 2.89E-12 | -- | 6.30E-12 | 1.97E-12 | 3.04E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 9.28E-11 | 3.99E-11 | 2.19E-11 | -- | 3.29E-11 | 1.02E-11 | 1.58E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.48E-05 | 1.50E-05 | 8.20E-06 | -- | 8.63E-06 | 2.69E-06 | 4.16E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.24E-04 | 5.35E-05 | 2.93E-05 | -- | 6.61E-06 | 2.06E-06 | 3.18E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.07E-15 | 4.59E-16 | 2.51E-16 | -- | 3.78E-16 | 1.18E-16 | 1.82E-16 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.97E-13 | 1.28E-13 | 7.00E-14 | -- | 5.79E-14 | 1.81E-14 | 2.79E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.09E-13 | 2.62E-13 | 1.43E-13 | -- | 1.08E-12 | 3.36E-13 | 5.20E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 9.56E-14 | 4.11E-14 | 2.25E-14 | -- | 1.69E-14 | 5.28E-15 | 8.16E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.47E-13 | 6.33E-14 | 3.47E-14 | -- | 5.21E-14 | 1.62E-14 | 2.51E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 7.99E-09 | 3.44E-09 | 1.88E-09 | -- | 1.41E-09 | 4.41E-10 | 6.82E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.47E-11 | 1.06E-11 | 5.82E-12 | -- | 3.50E-12 | 1.09E-12 | 1.69E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.24E-12 | 5.32E-13 | 2.91E-13 | -- | 2.19E-13 | 6.83E-14 | 1.06E-13 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.44E-09 | 6.20E-10 | 3.39E-10 | -- | 3.32E-10 | 1.03E-10 | 1.60E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.61E-08 | 1.12E-08 | 6.14E-09 | -- | 4.62E-10 | 1.44E-10 | 2.23E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.04E-09 | 8.79E-10 | 4.81E-10 | -- | 3.98E-10 | 1.24E-10 | 1.92E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 8.67E-06 | 3.73E-06 | 2.04E-06 | -- | 1.54E-06 | 4.79E-07 | 7.40E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.15E-06 | 4.93E-07 | 2.70E-07 | -- | 6.09E-08 | 1.90E-08 | 2.94E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.22E-08 | 5.25E-09 | 2.87E-09 | -- | 2.16E-09 | 6.74E-10 | 1.04E-09 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.09E-06 | 4.70E-07 | 2.57E-07 | -- | 5.80E-08 | 1.81E-08 | 2.80E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.75E-08 | 2.90E-08 | 1.59E-08 | -- | 1.19E-08 | 3.72E-09 | 5.76E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.88E-05 | 1.24E-05 | 6.78E-06 | -- | 7.14E-06 | 2.23E-06 | 3.44E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.07E-10 | 3.47E-10 | 1.90E-10 | -- | 5.72E-11 | 1.78E-11 | 2.76E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.72E-07 | 7.41E-08 | 4.06E-08 | -- | 2.74E-08 | 8.56E-09 | 1.32E-08 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.24E-06 | 2.25E-06 | 1.23E-06 | -- | 9.27E-07 | 2.89E-07 | 4.47E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.81E-04 | 7.78E-05 | 4.26E-05 | -- | 1.92E-06 | 5.99E-07 | 9.26E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.79E-05 | 3.35E-05 | 1.83E-05 | -- | 6.89E-06 | 2.15E-06 | 3.32E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.38E-06 | 1.88E-06 | 1.03E-06 | -- | 1.55E-06 | 4.84E-07 | 7.48E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 7.86E-06 | 3.38E-06 | 1.85E-06 | -- | 4.87E-06 | 1.52E-06 | 2.35E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.29E-13 | 1.42E-13 | 7.76E-14 | -- | 5.83E-14 | 1.82E-14 | 2.81E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.39E-08 | 5.96E-09 | 3.27E-09 | -- | 4.91E-11 | 1.53E-11 | 2.37E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.59E-07 | 6.84E-08 | 3.75E-08 | -- | 7.04E-08 | 2.20E-08 | 3.39E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 9.54E-04 | 4.10E-04 | 2.25E-04 | -- | 1.69E-05 | 5.27E-06 | 8.14E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.76E-07 | 1.19E-07 | 6.49E-08 | -- | 4.88E-08 | 1.52E-08 | 2.35E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 8.78E-07 | 3.77E-07 | 2.07E-07 | -- | 1.55E-07 | 4.85E-08 | 7.49E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.15E-06 | 4.93E-07 | 2.70E-07 | -- | 4.06E-08 | 1.27E-08 | 1.96E-08 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-11 | 1.64E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.41E-12 | 3.62E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-11 | 2.38E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-03 | 1.88E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.05E-03 | 6.27E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-16 | 2.76E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-14 | 6.19E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.45E-13 | 3.29E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-14 | 2.00E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-14 | 3.77E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.25E-09 | 2.41E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.55E-12 | 5.60E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.50E-13 | 3.20E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-09 | 4.83E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-08 | 6.32E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.53E-08 | 7.95E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.02E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.08E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-05 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.53E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.47E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-06 |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.06E-10 | 8.86E-11 | 2.04E-11 | -- | 1.60E-11 | 4.60E-12 | 7.09E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.07E-11 | 1.75E-11 | 4.02E-12 | -- | 4.58E-12 | 1.32E-12 | 2.03E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.08E-10 | 1.32E-10 | 3.04E-11 | -- | 2.39E-11 | 6.86E-12 | 1.06E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.15E-04 | 4.96E-05 | 1.14E-05 | -- | 6.28E-06 | 1.80E-06 | 2.78E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.12E-04 | 1.77E-04 | 4.07E-05 | -- | 4.80E-06 | 1.38E-06 | 2.13E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.54E-15 | 1.52E-15 | 3.49E-16 | -- | 2.75E-16 | 7.89E-17 | 1.22E-16 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 9.85E-13 | 4.24E-13 | 9.73E-14 | -- | 4.21E-14 | 1.21E-14 | 1.86E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.02E-12 | 8.68E-13 | 1.99E-13 | -- | 7.84E-13 | 2.25E-13 | 3.47E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.17E-13 | 1.36E-13 | 3.13E-14 | -- | 1.23E-14 | 3.53E-15 | 5.45E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.88E-13 | 2.10E-13 | 4.82E-14 | -- | 3.79E-14 | 1.09E-14 | 1.68E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.65E-08 | 1.14E-08 | 2.62E-09 | -- | 1.03E-09 | 2.95E-10 | 4.55E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 8.19E-11 | 3.52E-11 | 8.09E-12 | -- | 2.55E-12 | 7.31E-13 | 1.13E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.10E-12 | 1.76E-12 | 4.05E-13 | -- | 1.59E-13 | 4.57E-14 | 7.05E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.78E-09 | 2.05E-09 | 4.72E-10 | -- | 2.41E-10 | 6.93E-11 | 1.07E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.64E-08 | 3.72E-08 | 8.54E-09 | -- | 3.36E-10 | 9.64E-11 | 1.49E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 6.77E-09 | 2.91E-09 | 6.69E-10 | -- | 2.89E-10 | 8.31E-11 | 1.28E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.87E-05 | 1.24E-05 | 2.84E-06 | -- | 1.12E-06 | 3.20E-07 | 4.94E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.80E-06 | 1.63E-06 | 3.75E-07 | -- | 4.43E-08 | 1.27E-08 | 1.96E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.04E-08 | 1.74E-08 | 4.00E-09 | -- | 1.57E-09 | 4.51E-10 | 6.96E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.62E-06 | 1.56E-06 | 3.58E-07 | -- | 4.22E-08 | 1.21E-08 | 1.87E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.24E-07 | 9.61E-08 | 2.21E-08 | -- | 8.69E-09 | 2.49E-09 | 3.85E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 9.54E-05 | 4.10E-05 | 9.43E-06 | -- | 5.19E-06 | 1.49E-06 | 2.30E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.68E-09 | 1.15E-09 | 2.64E-10 | -- | 4.16E-11 | 1.19E-11 | 1.84E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.71E-07 | 2.45E-07 | 5.64E-08 | -- | 2.00E-08 | 5.73E-09 | 8.83E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.74E-05 | 7.46E-06 | 1.71E-06 | -- | 6.74E-07 | 1.94E-07 | 2.98E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.00E-04 | 2.58E-04 | 5.92E-05 | -- | 1.40E-06 | 4.01E-07 | 6.19E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.58E-04 | 1.11E-04 | 2.55E-05 | -- | 5.01E-06 | 1.44E-06 | 2.22E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.45E-05 | 6.24E-06 | 1.43E-06 | -- | 1.13E-06 | 3.24E-07 | 4.99E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.60E-05 | 1.12E-05 | 2.57E-06 | -- | 3.54E-06 | 1.02E-06 | 1.57E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.09E-12 | 4.69E-13 | 1.08E-13 | -- | 4.24E-14 | 1.22E-14 | 1.88E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.60E-08 | 1.98E-08 | 4.54E-09 | -- | 3.57E-11 | 1.03E-11 | 1.58E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.27E-07 | 2.27E-07 | 5.21E-08 | -- | 5.12E-08 | 1.47E-08 | 2.27E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.16E-03 | 1.36E-03 | 3.12E-04 | -- | 1.23E-05 | 3.53E-06 | 5.44E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.14E-07 | 3.93E-07 | 9.03E-08 | -- | 3.55E-08 | 1.02E-08 | 1.57E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.91E-06 | 1.25E-06 | 2.87E-07 | -- | 1.13E-07 | 3.24E-08 | 5.00E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.80E-06 | 1.63E-06 | 3.76E-07 | -- | 2.95E-08 | 8.48E-09 | 1.31E-08 | -- |

**Hazard Quotients for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient =** **2.00E-01**

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.13E-09 | 1.67E-09 | 1.50E-10 | 6.43E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-09 |
| Anthracene | 9.99E-11 | 1.48E-10 | 2.10E-13 | 5.09E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-10 |
| Fluorene | 1.13E-09 | 1.68E-09 | 2.00E-12 | 1.43E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.98E-05 | 2.94E-05 | 3.79E-06 | 4.20E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.51E-05 | 7.04E-05 | 1.45E-05 | 8.00E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.26E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.25E-13 | 1.85E-13 | 1.08E-12 | 7.60E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-12 |
| Bromoform | 4.11E-11 | 6.11E-11 | 4.16E-11 | 1.89E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-10 |
| Carbon Tetrachloride | 4.78E-11 | 7.07E-11 | 6.59E-10 | 2.09E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-10 |
| Chloroform | 2.17E-11 | 3.21E-11 | 1.09E-10 | 7.33E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-10 |
| Trichlorofluoromethane (FREON 11) | 1.73E-11 | 2.55E-11 | 1.36E-10 | 1.07E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.80E-10 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.35E-08 | 6.48E-08 | 9.52E-08 | 4.81E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-07 |
| 1,2,4-Trichlorobenzene | 3.91E-10 | 5.82E-10 | 2.18E-10 | 1.65E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-09 |
| 1,2-Dichlorobenzene | 4.53E-11 | 6.64E-11 | 3.45E-10 | 3.92E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.64E-10 |
| Hexachlorobenzene | 4.06E-09 | 6.01E-09 | 4.17E-09 | 1.38E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-08 |
| Pentachlorobenzene | 8.69E-08 | 1.29E-07 | 5.45E-09 | 2.40E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.54E-07 |
| Pentachlorophenol | 2.74E-07 | 1.11E-08 | 3.80E-07 | 1.52E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.29E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 4.95E-05 | 3.44E-05 | 2.96E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-04 |
| Arsenic | 6.00E-06 | 9.04E-07 | 1.04E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-05 |
| Barium | 7.36E-08 | 4.89E-08 | 2.08E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-07 |
| Beryllium | 8.78E-07 | 3.51E-07 | 1.86E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.85E-06 |
| Boron | 1.57E-05 | 1.89E-05 | 1.53E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-05 |
| Cadmium | 3.55E-04 | 4.48E-04 | 2.10E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.79E-04 |
| Chromium (Total) | 6.11E-09 | 4.90E-10 | 4.13E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-08 |
| Chromium VI | 1.30E-06 | 1.05E-07 | 8.81E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-06 |
| Cobalt | 1.97E-05 | 5.64E-06 | 4.17E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.35E-05 |
| Lead | 3.10E-04 | 3.06E-04 | 1.85E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-03 |
| Mercury - Inorganic | 1.21E-04 | 1.41E-04 | 3.19E-05 | 1.05E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.07E-04 |
| Methyl Mercury | 2.22E-05 | 1.60E-05 | 4.93E-06 | 4.42E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-05 |
| Nickel | 2.29E-05 | 9.10E-06 | 7.14E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.86E-05 |
| Phosphorus | 1.09E-10 | 1.43E-10 | 1.31E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-10 |
| Selenium | 3.93E-07 | 3.37E-08 | 3.47E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.00E-07 |
| Silver | 4.42E-06 | 2.73E-06 | 1.81E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.23E-06 |
| Thallium | 1.95E-03 | 1.02E-04 | 4.34E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.91E-03 |
| Tin | 4.35E-07 | 3.11E-07 | 1.88E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-06 |
| Vanadium | 7.42E-07 | 3.63E-07 | 2.99E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-06 |
| Zinc | 1.19E-05 | 1.39E-05 | 1.17E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-05 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.72E-11 | 7.38E-12 | 4.04E-12 | -- | 6.08E-12 | 1.90E-12 | 2.93E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.39E-12 | 1.46E-12 | 7.98E-13 | -- | 1.74E-12 | 5.42E-13 | 8.38E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.56E-11 | 1.10E-11 | 6.03E-12 | -- | 9.07E-12 | 2.83E-12 | 4.37E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 9.61E-06 | 4.13E-06 | 2.26E-06 | -- | 2.38E-06 | 7.42E-07 | 1.15E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 3.01E-05 | 1.29E-05 | 7.09E-06 | -- | 1.60E-06 | 4.98E-07 | 7.70E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.95E-16 | 1.27E-16 | 6.94E-17 | -- | 1.04E-16 | 3.25E-17 | 5.03E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.21E-14 | 3.53E-14 | 1.93E-14 | -- | 1.60E-14 | 4.98E-15 | 7.70E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.68E-13 | 7.22E-14 | 3.96E-14 | -- | 2.98E-13 | 9.28E-14 | 1.43E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.64E-14 | 1.13E-14 | 6.21E-15 | -- | 4.67E-15 | 1.46E-15 | 2.25E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.06E-14 | 1.75E-14 | 9.56E-15 | -- | 1.44E-14 | 4.48E-15 | 6.93E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.21E-09 | 9.48E-10 | 5.19E-10 | -- | 3.90E-10 | 1.22E-10 | 1.88E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 6.82E-12 | 2.93E-12 | 1.61E-12 | -- | 9.66E-13 | 3.01E-13 | 4.66E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.41E-13 | 1.47E-13 | 8.04E-14 | -- | 6.05E-14 | 1.88E-14 | 2.91E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.98E-10 | 1.71E-10 | 9.37E-11 | -- | 9.16E-11 | 2.85E-11 | 4.41E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.20E-09 | 3.09E-09 | 1.69E-09 | -- | 1.27E-10 | 3.97E-11 | 6.14E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.64E-10 | 2.42E-10 | 1.33E-10 | -- | 1.10E-10 | 3.42E-11 | 5.29E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 2.10E-06 | 9.02E-07 | 4.94E-07 | -- | 3.72E-07 | 1.16E-07 | 1.79E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.78E-07 | 1.19E-07 | 6.54E-08 | -- | 1.47E-08 | 4.60E-09 | 7.11E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.95E-09 | 1.27E-09 | 6.96E-10 | -- | 5.23E-10 | 1.63E-10 | 2.52E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.64E-07 | 1.14E-07 | 6.23E-08 | -- | 1.40E-08 | 4.38E-09 | 6.77E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-08 | 7.02E-09 | 3.85E-09 | -- | 2.89E-09 | 9.01E-10 | 1.39E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 6.97E-06 | 3.00E-06 | 1.64E-06 | -- | 1.73E-06 | 5.39E-07 | 8.33E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.95E-10 | 8.40E-11 | 4.60E-11 | -- | 1.38E-11 | 4.31E-12 | 6.67E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.17E-08 | 1.79E-08 | 9.82E-09 | -- | 6.64E-09 | 2.07E-09 | 3.20E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.27E-06 | 5.45E-07 | 2.98E-07 | -- | 2.24E-07 | 7.00E-08 | 1.08E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 4.38E-05 | 1.88E-05 | 1.03E-05 | -- | 4.65E-07 | 1.45E-07 | 2.24E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.50E-05 | 1.07E-05 | 5.89E-06 | -- | 2.21E-06 | 6.90E-07 | 1.07E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.06E-06 | 4.56E-07 | 2.50E-07 | -- | 3.75E-07 | 1.17E-07 | 1.81E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.90E-06 | 8.17E-07 | 4.48E-07 | -- | 1.18E-06 | 3.67E-07 | 5.68E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 7.97E-14 | 3.43E-14 | 1.88E-14 | -- | 1.41E-14 | 4.40E-15 | 6.80E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.36E-09 | 1.44E-09 | 7.91E-10 | -- | 1.19E-11 | 3.71E-12 | 5.73E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.85E-08 | 1.66E-08 | 9.07E-09 | -- | 1.70E-08 | 5.31E-09 | 8.21E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 2.31E-04 | 9.93E-05 | 5.44E-05 | -- | 4.09E-06 | 1.27E-06 | 1.97E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.67E-08 | 2.87E-08 | 1.57E-08 | -- | 1.18E-08 | 3.68E-09 | 5.70E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 2.12E-07 | 9.13E-08 | 5.00E-08 | -- | 3.76E-08 | 1.17E-08 | 1.81E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.78E-07 | 1.19E-07 | 6.54E-08 | -- | 9.83E-09 | 3.07E-09 | 4.74E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-12 | 4.53E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-12 | 9.98E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.66E-12 | 6.56E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.98E-04 | 5.19E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-03 | 1.71E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.33E-17 | 7.61E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.42E-15 | 1.71E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.52E-14 | 9.09E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-15 | 5.53E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-14 | 1.04E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-09 | 6.65E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-12 | 1.55E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-13 | 8.85E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.09E-10 | 1.34E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.23E-09 | 1.74E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.06E-08 | 3.17E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.16E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.86E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.24E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.50E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.13E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.38E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.28E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.61E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.47E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.92E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.21E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.80E-07 |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 5.69E-11 | 2.45E-11 | 5.62E-12 | -- | 4.42E-12 | 1.27E-12 | 1.96E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.12E-11 | 4.83E-12 | 1.11E-12 | -- | 1.26E-12 | 3.63E-13 | 5.60E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 8.49E-11 | 3.65E-11 | 8.38E-12 | -- | 6.59E-12 | 1.89E-12 | 2.92E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.18E-05 | 1.37E-05 | 3.14E-06 | -- | 1.73E-06 | 4.97E-07 | 7.67E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 9.97E-05 | 4.29E-05 | 9.85E-06 | -- | 1.16E-06 | 3.34E-07 | 5.14E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 9.76E-16 | 4.20E-16 | 9.64E-17 | -- | 7.58E-17 | 2.18E-17 | 3.36E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.72E-13 | 1.17E-13 | 2.69E-14 | -- | 1.16E-14 | 3.34E-15 | 5.14E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 5.57E-13 | 2.39E-13 | 5.50E-14 | -- | 2.16E-13 | 6.21E-14 | 9.58E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 8.74E-14 | 3.76E-14 | 8.63E-15 | -- | 3.39E-15 | 9.75E-16 | 1.50E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.35E-13 | 5.79E-14 | 1.33E-14 | -- | 1.05E-14 | 3.00E-15 | 4.63E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 7.31E-09 | 3.14E-09 | 7.22E-10 | -- | 2.84E-10 | 8.15E-11 | 1.26E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.26E-11 | 9.72E-12 | 2.23E-12 | -- | 7.03E-13 | 2.02E-13 | 3.11E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.13E-12 | 4.86E-13 | 1.12E-13 | -- | 4.40E-14 | 1.26E-14 | 1.95E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.32E-09 | 5.67E-10 | 1.30E-10 | -- | 6.66E-11 | 1.91E-11 | 2.95E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.38E-08 | 1.03E-08 | 2.36E-09 | -- | 9.26E-11 | 2.66E-11 | 4.10E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.87E-09 | 8.03E-10 | 1.85E-10 | -- | 7.99E-11 | 2.29E-11 | 3.54E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 6.95E-06 | 2.99E-06 | 6.87E-07 | -- | 2.70E-07 | 7.76E-08 | 1.20E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.20E-07 | 3.95E-07 | 9.08E-08 | -- | 1.07E-08 | 3.08E-09 | 4.75E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.79E-09 | 4.21E-09 | 9.67E-10 | -- | 3.80E-10 | 1.09E-10 | 1.68E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 8.76E-07 | 3.77E-07 | 8.65E-08 | -- | 1.02E-08 | 2.93E-09 | 4.52E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.41E-08 | 2.33E-08 | 5.35E-09 | -- | 2.10E-09 | 6.04E-10 | 9.31E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.31E-05 | 9.93E-06 | 2.28E-06 | -- | 1.26E-06 | 3.61E-07 | 5.56E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 6.47E-10 | 2.78E-10 | 6.40E-11 | -- | 1.01E-11 | 2.89E-12 | 4.45E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.38E-07 | 5.94E-08 | 1.36E-08 | -- | 4.83E-09 | 1.39E-09 | 2.14E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 4.20E-06 | 1.81E-06 | 4.15E-07 | -- | 1.63E-07 | 4.69E-08 | 7.22E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.45E-04 | 6.24E-05 | 1.43E-05 | -- | 3.38E-07 | 9.71E-08 | 1.50E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 8.28E-05 | 3.56E-05 | 8.18E-06 | -- | 1.61E-06 | 4.62E-07 | 7.12E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 3.51E-06 | 1.51E-06 | 3.47E-07 | -- | 2.73E-07 | 7.84E-08 | 1.21E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.30E-06 | 2.71E-06 | 6.22E-07 | -- | 8.56E-07 | 2.46E-07 | 3.79E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 2.64E-13 | 1.14E-13 | 2.61E-14 | -- | 1.03E-14 | 2.95E-15 | 4.54E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.11E-08 | 4.78E-09 | 1.10E-09 | -- | 8.64E-12 | 2.48E-12 | 3.83E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.28E-07 | 5.48E-08 | 1.26E-08 | -- | 1.24E-08 | 3.56E-09 | 5.49E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 7.65E-04 | 3.29E-04 | 7.56E-05 | -- | 2.97E-06 | 8.54E-07 | 1.32E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.21E-07 | 9.51E-08 | 2.18E-08 | -- | 8.59E-09 | 2.47E-09 | 3.80E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 7.04E-07 | 3.03E-07 | 6.95E-08 | -- | 2.73E-08 | 7.85E-09 | 1.21E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.20E-07 | 3.96E-07 | 9.09E-08 | -- | 7.15E-09 | 2.05E-09 | 3.17E-09 | -- |

**Hazard Quotients for a Maple Grove Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.11E-10 | 4.62E-10 | 4.15E-11 | 1.78E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-09 |
| Anthracene | 2.76E-11 | 4.10E-11 | 5.80E-14 | 2.56E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.79E-11 |
| Fluorene | 3.11E-10 | 4.62E-10 | 5.52E-13 | 7.23E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.15E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 5.49E-06 | 8.11E-06 | 1.05E-06 | 2.12E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.68E-05 | 1.70E-05 | 3.52E-06 | 4.03E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.49E-14 | 5.10E-14 | 2.97E-13 | 3.83E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-13 |
| Bromoform | 1.13E-11 | 1.69E-11 | 1.15E-11 | 9.50E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.01E-11 |
| Carbon Tetrachloride | 1.33E-11 | 1.95E-11 | 1.82E-10 | 1.06E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-10 |
| Chloroform | 6.02E-12 | 8.86E-12 | 3.02E-11 | 3.70E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.52E-11 |
| Trichlorofluoromethane (FREON 11) | 4.82E-12 | 7.03E-12 | 3.75E-11 | 5.40E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.96E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.20E-08 | 1.79E-08 | 2.63E-08 | 2.42E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.78E-08 |
| 1,2,4-Trichlorobenzene | 1.08E-10 | 1.61E-10 | 6.01E-11 | 8.31E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-10 |
| 1,2-Dichlorobenzene | 1.27E-11 | 1.83E-11 | 9.52E-11 | 1.98E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-10 |
| Hexachlorobenzene | 1.13E-09 | 1.66E-09 | 1.15E-09 | 6.95E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.07E-09 |
| Pentachlorobenzene | 2.40E-08 | 3.57E-08 | 1.50E-09 | 1.21E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.78E-08 |
| Pentachlorophenol | 1.37E-07 | 3.07E-09 | 1.05E-07 | 7.68E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.24E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.21E-05 | 8.33E-06 | 7.15E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-05 |
| Arsenic | 1.48E-06 | 2.19E-07 | 2.52E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-06 |
| Barium | 1.80E-08 | 1.18E-08 | 5.04E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.60E-08 |
| Beryllium | 2.15E-07 | 8.49E-08 | 4.51E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-06 |
| Boron | 3.81E-06 | 4.58E-06 | 3.71E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.85E-06 |
| Cadmium | 8.62E-05 | 1.08E-04 | 5.07E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-04 |
| Chromium (Total) | 1.50E-09 | 1.19E-10 | 9.99E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-09 |
| Chromium VI | 3.21E-07 | 2.53E-08 | 2.13E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-07 |
| Cobalt | 4.84E-06 | 1.37E-06 | 1.01E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-05 |
| Lead | 7.54E-05 | 7.41E-05 | 4.48E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-04 |
| Mercury - Inorganic | 4.17E-05 | 4.51E-05 | 1.02E-05 | 5.27E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-04 |
| Methyl Mercury | 7.41E-06 | 3.88E-06 | 1.19E-06 | 2.23E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-05 |
| Nickel | 5.61E-06 | 2.20E-06 | 1.73E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-05 |
| Phosphorus | 2.64E-11 | 3.47E-11 | 3.17E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.47E-11 |
| Selenium | 9.65E-08 | 8.15E-09 | 8.40E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-07 |
| Silver | 1.08E-06 | 6.61E-07 | 4.38E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-06 |
| Thallium | 4.79E-04 | 2.47E-05 | 1.05E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-03 |
| Tin | 1.06E-07 | 7.52E-08 | 4.55E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-07 |
| Vanadium | 1.82E-07 | 8.77E-08 | 7.24E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-06 |
| Zinc | 2.88E-06 | 3.35E-06 | 2.84E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-05 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.49E-11 | 1.07E-11 | 5.87E-12 | -- | 8.83E-12 | 2.75E-12 | 4.26E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.92E-12 | 2.11E-12 | 1.16E-12 | -- | 2.53E-12 | 7.87E-13 | 1.22E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.72E-11 | 1.60E-11 | 8.76E-12 | -- | 1.32E-11 | 4.10E-12 | 6.35E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.39E-05 | 5.98E-06 | 3.28E-06 | -- | 3.45E-06 | 1.08E-06 | 1.66E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.29E-05 | 2.28E-05 | 1.25E-05 | -- | 2.81E-06 | 8.76E-07 | 1.35E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 4.28E-16 | 1.84E-16 | 1.01E-16 | -- | 1.51E-16 | 4.72E-17 | 7.30E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.19E-13 | 5.12E-14 | 2.80E-14 | -- | 2.32E-14 | 7.23E-15 | 1.12E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.44E-13 | 1.05E-13 | 5.74E-14 | -- | 4.32E-13 | 1.35E-13 | 2.08E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.83E-14 | 1.65E-14 | 9.02E-15 | -- | 6.78E-15 | 2.11E-15 | 3.27E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.90E-14 | 2.54E-14 | 1.39E-14 | -- | 2.09E-14 | 6.51E-15 | 1.01E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.20E-09 | 1.38E-09 | 7.54E-10 | -- | 5.67E-10 | 1.77E-10 | 2.73E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.91E-12 | 4.26E-12 | 2.33E-12 | -- | 1.40E-12 | 4.37E-13 | 6.76E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.96E-13 | 2.13E-13 | 1.17E-13 | -- | 8.78E-14 | 2.74E-14 | 4.23E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.77E-10 | 2.48E-10 | 1.36E-10 | -- | 1.33E-10 | 4.14E-11 | 6.41E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.04E-08 | 4.49E-09 | 2.46E-09 | -- | 1.85E-10 | 5.77E-11 | 8.92E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 8.19E-10 | 3.52E-10 | 1.93E-10 | -- | 1.59E-10 | 4.97E-11 | 7.69E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.70E-06 | 1.59E-06 | 8.70E-07 | -- | 6.55E-07 | 2.04E-07 | 3.15E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.89E-07 | 2.10E-07 | 1.15E-07 | -- | 2.60E-08 | 8.10E-09 | 1.25E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.21E-09 | 2.24E-09 | 1.23E-09 | -- | 9.22E-10 | 2.87E-10 | 4.44E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.66E-07 | 2.00E-07 | 1.10E-07 | -- | 2.47E-08 | 7.71E-09 | 1.19E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.88E-08 | 1.24E-08 | 6.78E-09 | -- | 5.10E-09 | 1.59E-09 | 2.46E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.23E-05 | 5.28E-06 | 2.89E-06 | -- | 3.04E-06 | 9.49E-07 | 1.47E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.44E-10 | 1.48E-10 | 8.11E-11 | -- | 2.44E-11 | 7.60E-12 | 1.18E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.35E-08 | 3.16E-08 | 1.73E-08 | -- | 1.17E-08 | 3.65E-09 | 5.64E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.23E-06 | 9.60E-07 | 5.26E-07 | -- | 3.95E-07 | 1.23E-07 | 1.91E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 7.71E-05 | 3.31E-05 | 1.82E-05 | -- | 8.19E-07 | 2.55E-07 | 3.95E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.71E-05 | 1.60E-05 | 8.75E-06 | -- | 3.29E-06 | 1.03E-06 | 1.58E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.87E-06 | 8.02E-07 | 4.40E-07 | -- | 6.61E-07 | 2.06E-07 | 3.19E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.35E-06 | 1.44E-06 | 7.89E-07 | -- | 2.08E-06 | 6.47E-07 | 1.00E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.40E-13 | 6.04E-14 | 3.31E-14 | -- | 2.49E-14 | 7.75E-15 | 1.20E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.92E-09 | 2.54E-09 | 1.39E-09 | -- | 2.10E-11 | 6.53E-12 | 1.01E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.79E-08 | 2.92E-08 | 1.60E-08 | -- | 3.00E-08 | 9.36E-09 | 1.45E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.07E-04 | 1.75E-04 | 9.58E-05 | -- | 7.20E-06 | 2.25E-06 | 3.47E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.18E-07 | 5.05E-08 | 2.77E-08 | -- | 2.08E-08 | 6.49E-09 | 1.00E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.74E-07 | 1.61E-07 | 8.81E-08 | -- | 6.62E-08 | 2.06E-08 | 3.19E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.89E-07 | 2.10E-07 | 1.15E-07 | -- | 1.73E-08 | 5.40E-09 | 8.35E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.37E-12 | 6.57E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-12 | 1.45E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.67E-12 | 9.52E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.22E-04 | 7.52E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.84E-03 | 2.93E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-16 | 1.10E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.86E-15 | 2.48E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-13 | 1.32E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-15 | 8.03E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-14 | 1.51E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-09 | 9.65E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-12 | 2.24E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-13 | 1.28E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.39E-10 | 1.94E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.60E-09 | 2.53E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-08 | 4.70E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.33E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.61E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.20E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.71E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.17E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.43E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.78E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.29E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.30E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.89E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.90E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.42E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.46E-07 |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 8.26E-11 | 3.55E-11 | 8.16E-12 | -- | 6.42E-12 | 1.84E-12 | 2.84E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-11 | 7.00E-12 | 1.61E-12 | -- | 1.84E-12 | 5.27E-13 | 8.13E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.23E-10 | 5.30E-11 | 1.22E-11 | -- | 9.57E-12 | 2.75E-12 | 4.24E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 4.61E-05 | 1.98E-05 | 4.56E-06 | -- | 2.51E-06 | 7.20E-07 | 1.11E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.75E-04 | 7.54E-05 | 1.73E-05 | -- | 2.04E-06 | 5.87E-07 | 9.05E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.42E-15 | 6.09E-16 | 1.40E-16 | -- | 1.10E-16 | 3.16E-17 | 4.87E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.95E-13 | 1.70E-13 | 3.90E-14 | -- | 1.69E-14 | 4.84E-15 | 7.47E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 8.08E-13 | 3.47E-13 | 7.98E-14 | -- | 3.14E-13 | 9.02E-14 | 1.39E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.27E-13 | 5.45E-14 | 1.25E-14 | -- | 4.93E-15 | 1.42E-15 | 2.18E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.95E-13 | 8.40E-14 | 1.93E-14 | -- | 1.52E-14 | 4.36E-15 | 6.72E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.06E-08 | 4.56E-09 | 1.05E-09 | -- | 4.12E-10 | 1.18E-10 | 1.82E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.28E-11 | 1.41E-11 | 3.24E-12 | -- | 1.02E-12 | 2.93E-13 | 4.52E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.64E-12 | 7.06E-13 | 1.62E-13 | -- | 6.38E-14 | 1.83E-14 | 2.83E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.91E-09 | 8.23E-10 | 1.89E-10 | -- | 9.66E-11 | 2.77E-11 | 4.28E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.46E-08 | 1.49E-08 | 3.42E-09 | -- | 1.34E-10 | 3.86E-11 | 5.95E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.71E-09 | 1.17E-09 | 2.68E-10 | -- | 1.16E-10 | 3.33E-11 | 5.13E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.22E-05 | 5.27E-06 | 1.21E-06 | -- | 4.76E-07 | 1.37E-07 | 2.11E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.62E-06 | 6.97E-07 | 1.60E-07 | -- | 1.89E-08 | 5.42E-09 | 8.36E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.72E-08 | 7.41E-09 | 1.70E-09 | -- | 6.70E-10 | 1.92E-10 | 2.97E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.54E-06 | 6.63E-07 | 1.52E-07 | -- | 1.80E-08 | 5.16E-09 | 7.96E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 9.54E-08 | 4.10E-08 | 9.42E-09 | -- | 3.70E-09 | 1.06E-09 | 1.64E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.07E-05 | 1.75E-05 | 4.02E-06 | -- | 2.21E-06 | 6.35E-07 | 9.80E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.14E-09 | 4.90E-10 | 1.13E-10 | -- | 1.77E-11 | 5.09E-12 | 7.85E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.43E-07 | 1.05E-07 | 2.40E-08 | -- | 8.51E-09 | 2.44E-09 | 3.77E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 7.40E-06 | 3.18E-06 | 7.31E-07 | -- | 2.87E-07 | 8.25E-08 | 1.27E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.55E-04 | 1.10E-04 | 2.52E-05 | -- | 5.95E-07 | 1.71E-07 | 2.64E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.23E-04 | 5.29E-05 | 1.22E-05 | -- | 2.39E-06 | 6.86E-07 | 1.06E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.18E-06 | 2.66E-06 | 6.11E-07 | -- | 4.81E-07 | 1.38E-07 | 2.13E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.11E-05 | 4.77E-06 | 1.10E-06 | -- | 1.51E-06 | 4.33E-07 | 6.68E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.65E-13 | 2.00E-13 | 4.60E-14 | -- | 1.81E-14 | 5.19E-15 | 8.00E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.96E-08 | 8.43E-09 | 1.94E-09 | -- | 1.52E-11 | 4.37E-12 | 6.74E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.25E-07 | 9.66E-08 | 2.22E-08 | -- | 2.18E-08 | 6.27E-09 | 9.67E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.35E-03 | 5.79E-04 | 1.33E-04 | -- | 5.24E-06 | 1.50E-06 | 2.32E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.89E-07 | 1.67E-07 | 3.85E-08 | -- | 1.51E-08 | 4.34E-09 | 6.70E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.24E-06 | 5.33E-07 | 1.22E-07 | -- | 4.82E-08 | 1.38E-08 | 2.13E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.62E-06 | 6.97E-07 | 1.60E-07 | -- | 1.26E-08 | 3.62E-09 | 5.58E-09 | -- |

**Hazard Quotients for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 4.52E-10 | 6.70E-10 | 6.03E-11 | 2.58E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-09 |
| Anthracene | 4.00E-11 | 5.94E-11 | 8.42E-14 | 3.84E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-10 |
| Fluorene | 4.51E-10 | 6.71E-10 | 8.01E-13 | 1.08E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.95E-06 | 1.17E-05 | 1.52E-06 | 3.18E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.61E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.66E-05 | 3.00E-05 | 6.18E-06 | 6.04E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.07E-14 | 7.40E-14 | 4.31E-13 | 5.74E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.58E-13 |
| Bromoform | 1.64E-11 | 2.45E-11 | 1.67E-11 | 1.43E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.82E-11 |
| Carbon Tetrachloride | 1.93E-11 | 2.83E-11 | 2.64E-10 | 1.58E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-10 |
| Chloroform | 8.74E-12 | 1.29E-11 | 4.38E-11 | 5.54E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.57E-11 |
| Trichlorofluoromethane (FREON 11) | 7.00E-12 | 1.02E-11 | 5.45E-11 | 8.10E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.74E-08 | 2.59E-08 | 3.81E-08 | 3.63E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.85E-08 |
| 1,2,4-Trichlorobenzene | 1.57E-10 | 2.33E-10 | 8.73E-11 | 1.25E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.29E-10 |
| 1,2-Dichlorobenzene | 1.84E-11 | 2.66E-11 | 1.38E-10 | 2.96E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-10 |
| Hexachlorobenzene | 1.64E-09 | 2.41E-09 | 1.67E-09 | 1.04E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.82E-09 |
| Pentachlorobenzene | 3.48E-08 | 5.18E-08 | 2.18E-09 | 1.82E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-07 |
| Pentachlorophenol | 2.05E-07 | 4.45E-09 | 1.52E-07 | 1.15E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.81E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.23E-05 | 1.47E-05 | 1.26E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-05 |
| Arsenic | 2.79E-06 | 3.85E-07 | 4.45E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.73E-06 |
| Barium | 3.31E-08 | 2.09E-08 | 8.87E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.24E-08 |
| Beryllium | 4.02E-07 | 1.50E-07 | 7.94E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-06 |
| Boron | 6.81E-06 | 8.08E-06 | 6.54E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-05 |
| Cadmium | 1.54E-04 | 1.91E-04 | 8.93E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.20E-04 |
| Chromium (Total) | 2.85E-09 | 2.09E-10 | 1.76E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.86E-09 |
| Chromium VI | 6.09E-07 | 4.46E-08 | 3.76E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-06 |
| Cobalt | 9.10E-06 | 2.41E-06 | 1.78E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.35E-05 |
| Lead | 1.37E-04 | 1.31E-04 | 7.89E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.67E-04 |
| Mercury - Inorganic | 6.30E-05 | 6.70E-05 | 1.52E-05 | 7.90E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.45E-04 |
| Methyl Mercury | 1.22E-05 | 6.83E-06 | 2.10E-06 | 3.34E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-05 |
| Nickel | 1.05E-05 | 3.88E-06 | 3.05E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.42E-05 |
| Phosphorus | 4.69E-11 | 6.12E-11 | 5.59E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-10 |
| Selenium | 1.83E-07 | 1.44E-08 | 1.48E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-07 |
| Silver | 2.00E-06 | 1.17E-06 | 7.71E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.62E-06 |
| Thallium | 9.11E-04 | 4.34E-05 | 1.85E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-03 |
| Tin | 1.95E-07 | 1.32E-07 | 8.02E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.57E-07 |
| Vanadium | 3.38E-07 | 1.54E-07 | 1.28E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-06 |
| Zinc | 5.17E-06 | 5.91E-06 | 5.00E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-05 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.13E-11 | 4.84E-12 | 2.65E-12 | -- | 3.99E-12 | 1.24E-12 | 1.92E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.22E-12 | 9.56E-13 | 5.23E-13 | -- | 1.14E-12 | 3.56E-13 | 5.50E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.68E-11 | 7.22E-12 | 3.96E-12 | -- | 5.95E-12 | 1.85E-12 | 2.87E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 6.31E-06 | 2.71E-06 | 1.49E-06 | -- | 1.56E-06 | 4.88E-07 | 7.54E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.90E-05 | 8.17E-06 | 4.47E-06 | -- | 1.01E-06 | 3.15E-07 | 4.86E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.93E-16 | 8.31E-17 | 4.55E-17 | -- | 6.84E-17 | 2.13E-17 | 3.30E-17 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 5.38E-14 | 2.31E-14 | 1.27E-14 | -- | 1.05E-14 | 3.27E-15 | 5.05E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.10E-13 | 4.74E-14 | 2.60E-14 | -- | 1.95E-13 | 6.08E-14 | 9.40E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.73E-14 | 7.44E-15 | 4.07E-15 | -- | 3.06E-15 | 9.55E-16 | 1.48E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.66E-14 | 1.15E-14 | 6.27E-15 | -- | 9.43E-15 | 2.94E-15 | 4.55E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.45E-09 | 6.22E-10 | 3.41E-10 | -- | 2.56E-10 | 7.98E-11 | 1.23E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 4.48E-12 | 1.92E-12 | 1.05E-12 | -- | 6.34E-13 | 1.98E-13 | 3.05E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.24E-13 | 9.63E-14 | 5.27E-14 | -- | 3.97E-14 | 1.24E-14 | 1.91E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.61E-10 | 1.12E-10 | 6.14E-11 | -- | 6.00E-11 | 1.87E-11 | 2.89E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 4.72E-09 | 2.03E-09 | 1.11E-09 | -- | 8.36E-11 | 2.61E-11 | 4.03E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.70E-10 | 1.59E-10 | 8.71E-11 | -- | 7.20E-11 | 2.25E-11 | 3.47E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.32E-06 | 5.69E-07 | 3.12E-07 | -- | 2.34E-07 | 7.30E-08 | 1.13E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.75E-07 | 7.52E-08 | 4.12E-08 | -- | 9.30E-09 | 2.90E-09 | 4.48E-09 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.86E-09 | 8.01E-10 | 4.39E-10 | -- | 3.30E-10 | 1.03E-10 | 1.59E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.67E-07 | 7.17E-08 | 3.93E-08 | -- | 8.86E-09 | 2.76E-09 | 4.27E-09 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.03E-08 | 4.43E-09 | 2.42E-09 | -- | 1.82E-09 | 5.68E-10 | 8.79E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.40E-06 | 1.89E-06 | 1.04E-06 | -- | 1.09E-06 | 3.40E-07 | 5.25E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.23E-10 | 5.30E-11 | 2.90E-11 | -- | 8.73E-12 | 2.72E-12 | 4.21E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-08 | 1.13E-08 | 6.19E-09 | -- | 4.19E-09 | 1.31E-09 | 2.02E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 7.99E-07 | 3.44E-07 | 1.88E-07 | -- | 1.42E-07 | 4.41E-08 | 6.82E-08 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.76E-05 | 1.19E-05 | 6.50E-06 | -- | 2.93E-07 | 9.15E-08 | 1.41E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.24E-05 | 9.65E-06 | 5.29E-06 | -- | 1.99E-06 | 6.19E-07 | 9.58E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.69E-07 | 2.87E-07 | 1.57E-07 | -- | 2.37E-07 | 7.38E-08 | 1.14E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.20E-06 | 5.15E-07 | 2.82E-07 | -- | 7.43E-07 | 2.32E-07 | 3.58E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.03E-14 | 2.16E-14 | 1.18E-14 | -- | 8.90E-15 | 2.77E-15 | 4.29E-15 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.12E-09 | 9.10E-10 | 4.98E-10 | -- | 7.50E-12 | 2.34E-12 | 3.61E-12 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.43E-08 | 1.04E-08 | 5.72E-09 | -- | 1.07E-08 | 3.35E-09 | 5.18E-09 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.46E-04 | 6.26E-05 | 3.43E-05 | -- | 2.58E-06 | 8.04E-07 | 1.24E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.21E-08 | 1.81E-08 | 9.91E-09 | -- | 7.45E-09 | 2.32E-09 | 3.59E-09 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.34E-07 | 5.76E-08 | 3.16E-08 | -- | 2.37E-08 | 7.40E-09 | 1.14E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.75E-07 | 7.53E-08 | 4.12E-08 | -- | 6.20E-09 | 1.93E-09 | 2.99E-09 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.79E-12 | 2.97E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.99E-13 | 6.55E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-12 | 4.30E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-04 | 3.42E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-03 | 1.25E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.47E-17 | 4.99E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.55E-15 | 1.12E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.25E-14 | 5.96E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-15 | 3.63E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.03E-15 | 6.83E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-09 | 4.36E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-12 | 1.01E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-13 | 5.81E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-10 | 8.77E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-09 | 1.14E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.91E-08 | 2.99E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.62E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.94E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.28E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.13E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.65E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.96E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.54E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.97E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.35E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-07 |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.73E-11 | 1.60E-11 | 3.69E-12 | -- | 2.90E-12 | 8.33E-13 | 1.28E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.36E-12 | 3.17E-12 | 7.27E-13 | -- | 8.30E-13 | 2.38E-13 | 3.67E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 5.57E-11 | 2.39E-11 | 5.50E-12 | -- | 4.32E-12 | 1.24E-12 | 1.91E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.09E-05 | 8.99E-06 | 2.07E-06 | -- | 1.14E-06 | 3.27E-07 | 5.04E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 6.30E-05 | 2.71E-05 | 6.22E-06 | -- | 7.34E-07 | 2.11E-07 | 3.25E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 6.40E-16 | 2.75E-16 | 6.32E-17 | -- | 4.97E-17 | 1.43E-17 | 2.20E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.78E-13 | 7.67E-14 | 1.76E-14 | -- | 7.62E-15 | 2.19E-15 | 3.37E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.65E-13 | 1.57E-13 | 3.61E-14 | -- | 1.42E-13 | 4.07E-14 | 6.28E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 5.73E-14 | 2.46E-14 | 5.66E-15 | -- | 2.23E-15 | 6.39E-16 | 9.86E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 8.83E-14 | 3.79E-14 | 8.72E-15 | -- | 6.86E-15 | 1.97E-15 | 3.04E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.79E-09 | 2.06E-09 | 4.73E-10 | -- | 1.86E-10 | 5.35E-11 | 8.24E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.48E-11 | 6.37E-12 | 1.46E-12 | -- | 4.61E-13 | 1.32E-13 | 2.04E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 7.42E-13 | 3.19E-13 | 7.33E-14 | -- | 2.88E-14 | 8.28E-15 | 1.28E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.64E-10 | 3.72E-10 | 8.54E-11 | -- | 4.37E-11 | 1.25E-11 | 1.93E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.56E-08 | 6.72E-09 | 1.55E-09 | -- | 6.08E-11 | 1.74E-11 | 2.69E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.23E-09 | 5.27E-10 | 1.21E-10 | -- | 5.24E-11 | 1.50E-11 | 2.32E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.38E-06 | 1.88E-06 | 4.33E-07 | -- | 1.70E-07 | 4.89E-08 | 7.54E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.80E-07 | 2.49E-07 | 5.73E-08 | -- | 6.76E-09 | 1.94E-09 | 2.99E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.17E-09 | 2.65E-09 | 6.10E-10 | -- | 2.40E-10 | 6.89E-11 | 1.06E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 5.53E-07 | 2.38E-07 | 5.46E-08 | -- | 6.44E-09 | 1.85E-09 | 2.85E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.41E-08 | 1.47E-08 | 3.37E-09 | -- | 1.33E-09 | 3.81E-10 | 5.87E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.46E-05 | 6.26E-06 | 1.44E-06 | -- | 7.92E-07 | 2.27E-07 | 3.51E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.08E-10 | 1.75E-10 | 4.03E-11 | -- | 6.34E-12 | 1.82E-12 | 2.81E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.71E-08 | 3.74E-08 | 8.60E-09 | -- | 3.04E-09 | 8.74E-10 | 1.35E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.65E-06 | 1.14E-06 | 2.62E-07 | -- | 1.03E-07 | 2.95E-08 | 4.56E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 9.15E-05 | 3.93E-05 | 9.04E-06 | -- | 2.13E-07 | 6.13E-08 | 9.44E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.44E-05 | 3.20E-05 | 7.35E-06 | -- | 1.44E-06 | 4.15E-07 | 6.40E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.22E-06 | 9.52E-07 | 2.19E-07 | -- | 1.72E-07 | 4.94E-08 | 7.62E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.97E-06 | 1.71E-06 | 3.92E-07 | -- | 5.40E-07 | 1.55E-07 | 2.39E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.66E-13 | 7.16E-14 | 1.64E-14 | -- | 6.47E-15 | 1.86E-15 | 2.86E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.01E-09 | 3.01E-09 | 6.93E-10 | -- | 5.45E-12 | 1.56E-12 | 2.41E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.04E-08 | 3.46E-08 | 7.95E-09 | -- | 7.81E-09 | 2.24E-09 | 3.46E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.82E-04 | 2.07E-04 | 4.77E-05 | -- | 1.87E-06 | 5.38E-07 | 8.30E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.39E-07 | 6.00E-08 | 1.38E-08 | -- | 5.42E-09 | 1.56E-09 | 2.40E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.44E-07 | 1.91E-07 | 4.39E-08 | -- | 1.73E-08 | 4.95E-09 | 7.64E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.80E-07 | 2.49E-07 | 5.73E-08 | -- | 4.51E-09 | 1.29E-09 | 2.00E-09 | -- |

**Hazard Quotients for a Port Darlington Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 2.05E-10 | 3.03E-10 | 2.72E-11 | 1.17E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13E-10 |
| Anthracene | 1.81E-11 | 2.69E-11 | 3.81E-14 | 2.76E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-11 |
| Fluorene | 2.04E-10 | 3.03E-10 | 3.62E-13 | 7.79E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 3.62E-06 | 5.33E-06 | 6.87E-07 | 2.28E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.10E-05 | 1.08E-05 | 2.22E-06 | 4.34E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.32E-14 | 3.34E-14 | 1.95E-13 | 4.13E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-13 |
| Bromoform | 7.43E-12 | 1.11E-11 | 7.52E-12 | 1.02E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-11 |
| Carbon Tetrachloride | 8.79E-12 | 1.28E-11 | 1.19E-10 | 1.14E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-10 |
| Chloroform | 3.98E-12 | 5.81E-12 | 1.98E-11 | 3.98E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.97E-11 |
| Trichlorofluoromethane (FREON 11) | 3.20E-12 | 4.61E-12 | 2.46E-11 | 5.82E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 7.88E-09 | 1.17E-08 | 1.72E-08 | 2.61E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.45E-08 |
| 1,2,4-Trichlorobenzene | 7.09E-11 | 1.05E-10 | 3.94E-11 | 8.96E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-10 |
| 1,2-Dichlorobenzene | 8.45E-12 | 1.20E-11 | 6.25E-11 | 2.13E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.43E-11 |
| Hexachlorobenzene | 7.44E-10 | 1.09E-09 | 7.55E-10 | 7.49E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.99E-09 |
| Pentachlorobenzene | 1.57E-08 | 2.34E-08 | 9.87E-10 | 1.30E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.41E-08 |
| Pentachlorophenol | 1.46E-07 | 2.01E-09 | 6.88E-08 | 8.28E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 8.31E-06 | 5.25E-06 | 4.51E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-05 |
| Arsenic | 1.07E-06 | 1.38E-07 | 1.59E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-06 |
| Barium | 1.24E-08 | 7.47E-09 | 3.18E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-08 |
| Beryllium | 1.52E-07 | 5.36E-08 | 2.84E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-06 |
| Boron | 2.48E-06 | 2.89E-06 | 2.34E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-06 |
| Cadmium | 5.57E-05 | 6.84E-05 | 3.20E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-04 |
| Chromium (Total) | 1.10E-09 | 7.48E-11 | 6.30E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-09 |
| Chromium VI | 2.34E-07 | 1.60E-08 | 1.34E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-07 |
| Cobalt | 3.47E-06 | 8.61E-07 | 6.36E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.62E-06 |
| Lead | 5.03E-05 | 4.68E-05 | 2.83E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-04 |
| Mercury - Inorganic | 3.87E-05 | 4.05E-05 | 9.18E-06 | 5.68E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-04 |
| Methyl Mercury | 6.52E-06 | 2.45E-06 | 7.52E-07 | 2.40E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-05 |
| Nickel | 3.98E-06 | 1.39E-06 | 1.09E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-05 |
| Phosphorus | 1.70E-11 | 2.19E-11 | 2.00E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-11 |
| Selenium | 7.05E-08 | 5.14E-09 | 5.29E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-08 |
| Silver | 7.48E-07 | 4.17E-07 | 2.76E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-06 |
| Thallium | 3.51E-04 | 1.56E-05 | 6.62E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-03 |
| Tin | 7.28E-08 | 4.74E-08 | 2.87E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.46E-07 |
| Vanadium | 1.27E-07 | 5.53E-08 | 4.57E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.96E-07 |
| Zinc | 1.89E-06 | 2.11E-06 | 1.79E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.69E-06 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.85E-11 | 1.65E-11 | 9.06E-12 | -- | 1.36E-11 | 4.25E-12 | 6.56E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.59E-12 | 3.26E-12 | 1.79E-12 | -- | 3.90E-12 | 1.21E-12 | 1.88E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 5.74E-11 | 2.47E-11 | 1.35E-11 | -- | 2.03E-11 | 6.33E-12 | 9.79E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 2.15E-05 | 9.25E-06 | 5.07E-06 | -- | 5.33E-06 | 1.66E-06 | 2.57E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 7.10E-05 | 3.05E-05 | 1.67E-05 | -- | 3.77E-06 | 1.18E-06 | 1.82E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 6.60E-16 | 2.84E-16 | 1.55E-16 | -- | 2.34E-16 | 7.28E-17 | 1.13E-16 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.84E-13 | 7.90E-14 | 4.33E-14 | -- | 3.58E-14 | 1.12E-14 | 1.73E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.76E-13 | 1.62E-13 | 8.86E-14 | -- | 6.66E-13 | 2.08E-13 | 3.21E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 5.91E-14 | 2.54E-14 | 1.39E-14 | -- | 1.05E-14 | 3.26E-15 | 5.04E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.10E-14 | 3.91E-14 | 2.14E-14 | -- | 3.22E-14 | 1.00E-14 | 1.55E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.94E-09 | 2.12E-09 | 1.16E-09 | -- | 8.74E-10 | 2.73E-10 | 4.21E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.53E-11 | 6.57E-12 | 3.60E-12 | -- | 2.16E-12 | 6.75E-13 | 1.04E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 7.65E-13 | 3.29E-13 | 1.80E-13 | -- | 1.35E-13 | 4.22E-14 | 6.53E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 8.91E-10 | 3.83E-10 | 2.10E-10 | -- | 2.05E-10 | 6.39E-11 | 9.88E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.61E-08 | 6.93E-09 | 3.80E-09 | -- | 2.85E-10 | 8.90E-11 | 1.38E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.26E-09 | 5.43E-10 | 2.97E-10 | -- | 2.46E-10 | 7.67E-11 | 1.19E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.95E-06 | 2.13E-06 | 1.17E-06 | -- | 8.77E-07 | 2.73E-07 | 4.23E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 6.55E-07 | 2.82E-07 | 1.54E-07 | -- | 3.48E-08 | 1.08E-08 | 1.68E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.97E-09 | 3.00E-09 | 1.64E-09 | -- | 1.23E-09 | 3.85E-10 | 5.95E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 6.24E-07 | 2.68E-07 | 1.47E-07 | -- | 3.32E-08 | 1.03E-08 | 1.60E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.86E-08 | 1.66E-08 | 9.08E-09 | -- | 6.83E-09 | 2.13E-09 | 3.29E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.65E-05 | 7.07E-06 | 3.87E-06 | -- | 4.08E-06 | 1.27E-06 | 1.97E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.61E-10 | 1.98E-10 | 1.09E-10 | -- | 3.27E-11 | 1.02E-11 | 1.57E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.84E-08 | 4.23E-08 | 2.32E-08 | -- | 1.57E-08 | 4.89E-09 | 7.56E-09 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.99E-06 | 1.29E-06 | 7.05E-07 | -- | 5.30E-07 | 1.65E-07 | 2.55E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.03E-04 | 4.44E-05 | 2.43E-05 | -- | 1.10E-06 | 3.42E-07 | 5.29E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.98E-05 | 2.14E-05 | 1.17E-05 | -- | 4.41E-06 | 1.37E-06 | 2.12E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.50E-06 | 1.08E-06 | 5.89E-07 | -- | 8.86E-07 | 2.76E-07 | 4.27E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.49E-06 | 1.93E-06 | 1.06E-06 | -- | 2.78E-06 | 8.67E-07 | 1.34E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.88E-13 | 8.09E-14 | 4.43E-14 | -- | 3.33E-14 | 1.04E-14 | 1.61E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.93E-09 | 3.41E-09 | 1.87E-09 | -- | 2.81E-11 | 8.75E-12 | 1.35E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 9.09E-08 | 3.91E-08 | 2.14E-08 | -- | 4.02E-08 | 1.25E-08 | 1.94E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 5.45E-04 | 2.34E-04 | 1.28E-04 | -- | 9.65E-06 | 3.01E-06 | 4.65E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.58E-07 | 6.77E-08 | 3.71E-08 | -- | 2.79E-08 | 8.70E-09 | 1.34E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 5.01E-07 | 2.16E-07 | 1.18E-07 | -- | 8.88E-08 | 2.77E-08 | 4.28E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.56E-07 | 2.82E-07 | 1.54E-07 | -- | 2.32E-08 | 7.24E-09 | 1.12E-08 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-11 | 1.01E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-12 | 2.24E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-11 | 1.47E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-03 | 1.16E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.59E-03 | 3.72E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-16 | 1.70E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-14 | 3.82E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-13 | 2.04E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.70E-15 | 1.24E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-14 | 2.33E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-09 | 1.49E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.28E-12 | 3.46E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.64E-13 | 1.98E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-09 | 2.99E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-08 | 3.91E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.32E-08 | 5.58E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.82E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.27E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.93E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.08E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.25E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.94E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-06 |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.27E-10 | 5.48E-11 | 1.26E-11 | -- | 9.90E-12 | 2.84E-12 | 4.38E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.51E-11 | 1.08E-11 | 2.48E-12 | -- | 2.83E-12 | 8.13E-13 | 1.25E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.90E-10 | 8.17E-11 | 1.88E-11 | -- | 1.48E-11 | 4.24E-12 | 6.54E-12 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 7.13E-05 | 3.06E-05 | 7.04E-06 | -- | 3.88E-06 | 1.11E-06 | 1.72E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 2.35E-04 | 1.01E-04 | 2.32E-05 | -- | 2.74E-06 | 7.88E-07 | 1.21E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 2.19E-15 | 9.40E-16 | 2.16E-16 | -- | 1.70E-16 | 4.88E-17 | 7.52E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 6.09E-13 | 2.62E-13 | 6.01E-14 | -- | 2.60E-14 | 7.47E-15 | 1.15E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.25E-12 | 5.36E-13 | 1.23E-13 | -- | 4.84E-13 | 1.39E-13 | 2.14E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.96E-13 | 8.41E-14 | 1.93E-14 | -- | 7.60E-15 | 2.18E-15 | 3.37E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.01E-13 | 1.30E-13 | 2.98E-14 | -- | 2.34E-14 | 6.73E-15 | 1.04E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.64E-08 | 7.03E-09 | 1.62E-09 | -- | 6.36E-10 | 1.83E-10 | 2.81E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 5.06E-11 | 2.18E-11 | 5.00E-12 | -- | 1.57E-12 | 4.52E-13 | 6.97E-13 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 2.53E-12 | 1.09E-12 | 2.50E-13 | -- | 9.84E-14 | 2.83E-14 | 4.36E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.95E-09 | 1.27E-09 | 2.92E-10 | -- | 1.49E-10 | 4.28E-11 | 6.60E-11 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 5.34E-08 | 2.30E-08 | 5.28E-09 | -- | 2.07E-10 | 5.96E-11 | 9.19E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 4.19E-09 | 1.80E-09 | 4.13E-10 | -- | 1.79E-10 | 5.14E-11 | 7.92E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.64E-05 | 7.06E-06 | 1.62E-06 | -- | 6.38E-07 | 1.83E-07 | 2.82E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.17E-06 | 9.33E-07 | 2.14E-07 | -- | 2.53E-08 | 7.27E-09 | 1.12E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.31E-08 | 9.93E-09 | 2.28E-09 | -- | 8.98E-10 | 2.58E-10 | 3.97E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 2.07E-06 | 8.89E-07 | 2.04E-07 | -- | 2.41E-08 | 6.92E-09 | 1.07E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.28E-07 | 5.49E-08 | 1.26E-08 | -- | 4.96E-09 | 1.42E-09 | 2.20E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.45E-05 | 2.34E-05 | 5.38E-06 | -- | 2.96E-06 | 8.51E-07 | 1.31E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.53E-09 | 6.57E-10 | 1.51E-10 | -- | 2.38E-11 | 6.82E-12 | 1.05E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.26E-07 | 1.40E-07 | 3.22E-08 | -- | 1.14E-08 | 3.27E-09 | 5.05E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 9.91E-06 | 4.26E-06 | 9.79E-07 | -- | 3.85E-07 | 1.11E-07 | 1.71E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 3.42E-04 | 1.47E-04 | 3.38E-05 | -- | 7.98E-07 | 2.29E-07 | 3.53E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.65E-04 | 7.09E-05 | 1.63E-05 | -- | 3.20E-06 | 9.20E-07 | 1.42E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 8.29E-06 | 3.56E-06 | 8.19E-07 | -- | 6.44E-07 | 1.85E-07 | 2.85E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.49E-05 | 6.39E-06 | 1.47E-06 | -- | 2.02E-06 | 5.81E-07 | 8.95E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 6.23E-13 | 2.68E-13 | 6.16E-14 | -- | 2.42E-14 | 6.95E-15 | 1.07E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.63E-08 | 1.13E-08 | 2.59E-09 | -- | 2.04E-11 | 5.86E-12 | 9.03E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 3.01E-07 | 1.29E-07 | 2.97E-08 | -- | 2.92E-08 | 8.40E-09 | 1.29E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.81E-03 | 7.76E-04 | 1.78E-04 | -- | 7.02E-06 | 2.01E-06 | 3.11E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.22E-07 | 2.24E-07 | 5.16E-08 | -- | 2.03E-08 | 5.82E-09 | 8.98E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.66E-06 | 7.14E-07 | 1.64E-07 | -- | 6.45E-08 | 1.85E-08 | 2.86E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.17E-06 | 9.34E-07 | 2.15E-07 | -- | 1.69E-08 | 4.85E-09 | 7.47E-09 | -- |

**Hazard Quotients for a Solina Road Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 6.96E-10 | 1.03E-09 | 9.30E-11 | 3.97E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-09 |
| Anthracene | 6.18E-11 | 9.17E-11 | 1.30E-13 | 3.94E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-10 |
| Fluorene | 6.96E-10 | 1.04E-09 | 1.24E-12 | 1.11E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.23E-05 | 1.82E-05 | 2.34E-06 | 3.25E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.67E-05 | 4.02E-05 | 8.30E-06 | 6.19E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 7.77E-14 | 1.14E-13 | 6.65E-13 | 5.88E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.61E-13 |
| Bromoform | 2.54E-11 | 3.77E-11 | 2.57E-11 | 1.46E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.98E-11 |
| Carbon Tetrachloride | 2.96E-11 | 4.37E-11 | 4.07E-10 | 1.62E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.83E-10 |
| Chloroform | 1.34E-11 | 1.99E-11 | 6.76E-11 | 5.68E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-10 |
| Trichlorofluoromethane (FREON 11) | 1.07E-11 | 1.57E-11 | 8.40E-11 | 8.30E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-10 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.69E-08 | 4.00E-08 | 5.88E-08 | 3.72E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-07 |
| 1,2,4-Trichlorobenzene | 2.42E-10 | 3.60E-10 | 1.35E-10 | 1.28E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.16E-10 |
| 1,2-Dichlorobenzene | 2.81E-11 | 4.10E-11 | 2.13E-10 | 3.04E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-10 |
| Hexachlorobenzene | 2.52E-09 | 3.72E-09 | 2.58E-09 | 1.07E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-08 |
| Pentachlorobenzene | 5.37E-08 | 7.99E-08 | 3.37E-09 | 1.86E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-07 |
| Pentachlorophenol | 2.11E-07 | 6.87E-09 | 2.35E-07 | 1.18E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 2.79E-05 | 1.97E-05 | 1.69E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.55E-05 |
| Arsenic | 3.36E-06 | 5.16E-07 | 5.96E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30E-06 |
| Barium | 4.15E-08 | 2.80E-08 | 1.19E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-07 |
| Beryllium | 4.93E-07 | 2.00E-07 | 1.06E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-06 |
| Boron | 8.91E-06 | 1.08E-05 | 8.76E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-05 |
| Cadmium | 2.02E-04 | 2.56E-04 | 1.20E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-04 |
| Chromium (Total) | 3.41E-09 | 2.80E-10 | 2.36E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.10E-09 |
| Chromium VI | 7.28E-07 | 5.98E-08 | 5.03E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-06 |
| Cobalt | 1.11E-05 | 3.22E-06 | 2.38E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-05 |
| Lead | 1.76E-04 | 1.75E-04 | 1.06E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.86E-04 |
| Mercury - Inorganic | 7.94E-05 | 8.99E-05 | 2.04E-05 | 8.09E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-04 |
| Methyl Mercury | 1.42E-05 | 9.16E-06 | 2.82E-06 | 3.42E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.34E-05 |
| Nickel | 1.29E-05 | 5.20E-06 | 4.08E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.47E-05 |
| Phosphorus | 6.20E-11 | 8.20E-11 | 7.48E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-10 |
| Selenium | 2.19E-07 | 1.92E-08 | 1.98E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-07 |
| Silver | 2.49E-06 | 1.56E-06 | 1.03E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-06 |
| Thallium | 1.09E-03 | 5.82E-05 | 2.48E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.92E-03 |
| Tin | 2.45E-07 | 1.77E-07 | 1.07E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-06 |
| Vanadium | 4.17E-07 | 2.07E-07 | 1.71E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.29E-06 |
| Zinc | 6.75E-06 | 7.92E-06 | 6.71E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-05 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.87E-11 | 2.95E-11 | 1.62E-11 | -- | 2.43E-11 | 7.58E-12 | 1.17E-11 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.35E-11 | 5.82E-12 | 3.19E-12 | -- | 6.96E-12 | 2.17E-12 | 3.35E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.02E-10 | 4.41E-11 | 2.41E-11 | -- | 3.63E-11 | 1.13E-11 | 1.75E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.83E-05 | 1.65E-05 | 9.02E-06 | -- | 9.49E-06 | 2.96E-06 | 4.57E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.31E-04 | 5.63E-05 | 3.08E-05 | -- | 6.95E-06 | 2.17E-06 | 3.35E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.18E-15 | 5.07E-16 | 2.78E-16 | -- | 4.17E-16 | 1.30E-16 | 2.01E-16 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.28E-13 | 1.41E-13 | 7.73E-14 | -- | 6.39E-14 | 1.99E-14 | 3.08E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.72E-13 | 2.89E-13 | 1.58E-13 | -- | 1.19E-12 | 3.71E-13 | 5.74E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.06E-13 | 4.54E-14 | 2.49E-14 | -- | 1.87E-14 | 5.82E-15 | 9.01E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-13 | 6.99E-14 | 3.83E-14 | -- | 5.75E-14 | 1.79E-14 | 2.77E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.82E-09 | 3.79E-09 | 2.08E-09 | -- | 1.56E-09 | 4.87E-10 | 7.53E-10 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.73E-11 | 1.17E-11 | 6.43E-12 | -- | 3.87E-12 | 1.21E-12 | 1.86E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.37E-12 | 5.87E-13 | 3.22E-13 | -- | 2.42E-13 | 7.54E-14 | 1.17E-13 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.59E-09 | 6.84E-10 | 3.75E-10 | -- | 3.66E-10 | 1.14E-10 | 1.77E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.88E-08 | 1.24E-08 | 6.78E-09 | -- | 5.10E-10 | 1.59E-10 | 2.46E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.26E-09 | 9.70E-10 | 5.31E-10 | -- | 4.40E-10 | 1.37E-10 | 2.12E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 9.16E-06 | 3.94E-06 | 2.16E-06 | -- | 1.62E-06 | 5.05E-07 | 7.81E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.21E-06 | 5.21E-07 | 2.85E-07 | -- | 6.44E-08 | 2.01E-08 | 3.10E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.29E-08 | 5.54E-09 | 3.04E-09 | -- | 2.28E-09 | 7.12E-10 | 1.10E-09 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.15E-06 | 4.96E-07 | 2.71E-07 | -- | 6.12E-08 | 1.91E-08 | 2.95E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 7.13E-08 | 3.07E-08 | 1.68E-08 | -- | 1.26E-08 | 3.94E-09 | 6.09E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.04E-05 | 1.31E-05 | 7.16E-06 | -- | 7.54E-06 | 2.35E-06 | 3.63E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 8.53E-10 | 3.67E-10 | 2.01E-10 | -- | 6.04E-11 | 1.88E-11 | 2.91E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.82E-07 | 7.82E-08 | 4.29E-08 | -- | 2.90E-08 | 9.04E-09 | 1.40E-08 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 5.53E-06 | 2.38E-06 | 1.30E-06 | -- | 9.79E-07 | 3.05E-07 | 4.72E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 1.91E-04 | 8.21E-05 | 4.50E-05 | -- | 2.03E-06 | 6.32E-07 | 9.77E-07 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 7.95E-05 | 3.42E-05 | 1.87E-05 | -- | 7.04E-06 | 2.20E-06 | 3.39E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 4.62E-06 | 1.99E-06 | 1.09E-06 | -- | 1.64E-06 | 5.10E-07 | 7.89E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.30E-06 | 3.57E-06 | 1.95E-06 | -- | 5.14E-06 | 1.60E-06 | 2.48E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 3.48E-13 | 1.50E-13 | 8.19E-14 | -- | 6.16E-14 | 1.92E-14 | 2.97E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.47E-08 | 6.30E-09 | 3.45E-09 | -- | 5.19E-11 | 1.62E-11 | 2.50E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.68E-07 | 7.23E-08 | 3.96E-08 | -- | 7.44E-08 | 2.32E-08 | 3.59E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.01E-03 | 4.33E-04 | 2.37E-04 | -- | 1.78E-05 | 5.56E-06 | 8.60E-06 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.91E-07 | 1.25E-07 | 6.85E-08 | -- | 5.15E-08 | 1.61E-08 | 2.48E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 9.26E-07 | 3.98E-07 | 2.18E-07 | -- | 1.64E-07 | 5.11E-08 | 7.90E-08 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.21E-06 | 5.21E-07 | 2.85E-07 | -- | 4.29E-08 | 1.34E-08 | 2.07E-08 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-11 | 1.81E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.87E-12 | 3.99E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-11 | 2.62E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-03 | 2.06E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.16E-03 | 6.39E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.32E-16 | 3.04E-15 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.17E-14 | 6.83E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.80E-13 | 3.63E-12 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-14 | 2.21E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-14 | 4.17E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.11E-09 | 2.66E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.44E-12 | 6.18E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.28E-13 | 3.54E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-09 | 5.34E-09 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-08 | 6.98E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.05E-08 | 7.50E-08 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.42E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.55E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-05 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.90E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.13E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-06 |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 2.28E-10 | 9.79E-11 | 2.25E-11 | -- | 1.77E-11 | 5.08E-12 | 7.83E-12 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.49E-11 | 1.93E-11 | 4.43E-12 | -- | 5.06E-12 | 1.45E-12 | 2.24E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 3.40E-10 | 1.46E-10 | 3.35E-11 | -- | 2.64E-11 | 7.58E-12 | 1.17E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.27E-04 | 5.45E-05 | 1.25E-05 | -- | 6.90E-06 | 1.98E-06 | 3.05E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 4.34E-04 | 1.86E-04 | 4.28E-05 | -- | 5.05E-06 | 1.45E-06 | 2.24E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.90E-15 | 1.68E-15 | 3.86E-16 | -- | 3.03E-16 | 8.71E-17 | 1.34E-16 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.09E-12 | 4.67E-13 | 1.07E-13 | -- | 4.65E-14 | 1.33E-14 | 2.06E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 2.23E-12 | 9.57E-13 | 2.20E-13 | -- | 8.65E-13 | 2.48E-13 | 3.83E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 3.50E-13 | 1.50E-13 | 3.45E-14 | -- | 1.36E-14 | 3.90E-15 | 6.01E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.38E-13 | 2.31E-13 | 5.32E-14 | -- | 4.18E-14 | 1.20E-14 | 1.85E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.92E-08 | 1.26E-08 | 2.89E-09 | -- | 1.14E-09 | 3.26E-10 | 5.03E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 9.05E-11 | 3.89E-11 | 8.94E-12 | -- | 2.81E-12 | 8.07E-13 | 1.24E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 4.53E-12 | 1.95E-12 | 4.47E-13 | -- | 1.76E-13 | 5.05E-14 | 7.79E-14 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 5.27E-09 | 2.27E-09 | 5.21E-10 | -- | 2.66E-10 | 7.65E-11 | 1.18E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 9.54E-08 | 4.10E-08 | 9.42E-09 | -- | 3.71E-10 | 1.06E-10 | 1.64E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 7.48E-09 | 3.21E-09 | 7.39E-10 | -- | 3.20E-10 | 9.18E-11 | 1.41E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.03E-05 | 1.30E-05 | 3.00E-06 | -- | 1.18E-06 | 3.38E-07 | 5.22E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.01E-06 | 1.73E-06 | 3.97E-07 | -- | 4.68E-08 | 1.34E-08 | 2.07E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 4.27E-08 | 1.84E-08 | 4.22E-09 | -- | 1.66E-09 | 4.77E-10 | 7.35E-10 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 3.82E-06 | 1.64E-06 | 3.77E-07 | -- | 4.45E-08 | 1.28E-08 | 1.97E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.36E-07 | 1.02E-07 | 2.33E-08 | -- | 9.18E-09 | 2.64E-09 | 4.06E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.01E-04 | 4.33E-05 | 9.95E-06 | -- | 5.48E-06 | 1.57E-06 | 2.43E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.83E-09 | 1.22E-09 | 2.79E-10 | -- | 4.39E-11 | 1.26E-11 | 1.94E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 6.03E-07 | 2.59E-07 | 5.96E-08 | -- | 2.11E-08 | 6.05E-09 | 9.33E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 1.83E-05 | 7.88E-06 | 1.81E-06 | -- | 7.12E-07 | 2.04E-07 | 3.15E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 6.33E-04 | 2.72E-04 | 6.25E-05 | -- | 1.47E-06 | 4.23E-07 | 6.53E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.64E-04 | 1.13E-04 | 2.60E-05 | -- | 5.12E-06 | 1.47E-06 | 2.27E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.53E-05 | 6.58E-06 | 1.51E-06 | -- | 1.19E-06 | 3.42E-07 | 5.27E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 2.75E-05 | 1.18E-05 | 2.71E-06 | -- | 3.74E-06 | 1.07E-06 | 1.65E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.15E-12 | 4.96E-13 | 1.14E-13 | -- | 4.48E-14 | 1.29E-14 | 1.98E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 4.86E-08 | 2.09E-08 | 4.80E-09 | -- | 3.77E-11 | 1.08E-11 | 1.67E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.57E-07 | 2.39E-07 | 5.50E-08 | -- | 5.41E-08 | 1.55E-08 | 2.40E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.34E-03 | 1.44E-03 | 3.30E-04 | -- | 1.30E-05 | 3.72E-06 | 5.74E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 9.64E-07 | 4.15E-07 | 9.53E-08 | -- | 3.75E-08 | 1.08E-08 | 1.66E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.07E-06 | 1.32E-06 | 3.03E-07 | -- | 1.19E-07 | 3.42E-08 | 5.28E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.01E-06 | 1.73E-06 | 3.97E-07 | -- | 3.12E-08 | 8.96E-09 | 1.38E-08 | -- |

**Hazard Quotients for a Tooley Resident Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 1.24E-09 | 1.85E-09 | 1.66E-10 | 7.09E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.34E-09 |
| Anthracene | 1.10E-10 | 1.64E-10 | 2.32E-13 | 4.11E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-10 |
| Fluorene | 1.24E-09 | 1.85E-09 | 2.21E-12 | 1.16E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.66E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.18E-05 | 3.23E-05 | 4.17E-06 | 3.40E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-04 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.51E-05 | 7.41E-05 | 1.53E-05 | 6.46E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.63E-04 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.38E-13 | 2.04E-13 | 1.19E-12 | 6.14E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-12 |
| Bromoform | 4.53E-11 | 6.74E-11 | 4.59E-11 | 1.52E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-10 |
| Carbon Tetrachloride | 5.27E-11 | 7.80E-11 | 7.27E-10 | 1.69E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.63E-10 |
| Chloroform | 2.39E-11 | 3.55E-11 | 1.21E-10 | 5.92E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-10 |
| Trichlorofluoromethane (FREON 11) | 1.90E-11 | 2.81E-11 | 1.50E-10 | 8.66E-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-10 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.80E-08 | 7.15E-08 | 1.05E-07 | 3.88E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-07 |
| 1,2,4-Trichlorobenzene | 4.32E-10 | 6.42E-10 | 2.40E-10 | 1.33E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-09 |
| 1,2-Dichlorobenzene | 4.98E-11 | 7.33E-11 | 3.81E-10 | 3.17E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-10 |
| Hexachlorobenzene | 4.48E-09 | 6.64E-09 | 4.60E-09 | 1.11E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-08 |
| Pentachlorobenzene | 9.59E-08 | 1.43E-07 | 6.02E-09 | 1.94E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-07 |
| Pentachlorophenol | 2.24E-07 | 1.23E-08 | 4.20E-07 | 1.23E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.91E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 5.09E-05 | 3.64E-05 | 3.12E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-04 |
| Arsenic | 6.06E-06 | 9.55E-07 | 1.10E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-05 |
| Barium | 7.56E-08 | 5.17E-08 | 2.20E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-07 |
| Beryllium | 8.93E-07 | 3.70E-07 | 1.97E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.20E-06 |
| Boron | 1.64E-05 | 2.00E-05 | 1.62E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-05 |
| Cadmium | 3.72E-04 | 4.73E-04 | 2.21E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-03 |
| Chromium (Total) | 6.15E-09 | 5.18E-10 | 4.36E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-08 |
| Chromium VI | 1.31E-06 | 1.11E-07 | 9.31E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-06 |
| Cobalt | 2.00E-05 | 5.96E-06 | 4.40E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-05 |
| Lead | 3.22E-04 | 3.23E-04 | 1.95E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-03 |
| Mercury - Inorganic | 1.20E-04 | 1.44E-04 | 3.25E-05 | 8.45E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.16E-04 |
| Methyl Mercury | 2.13E-05 | 1.69E-05 | 5.20E-06 | 3.57E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25E-05 |
| Nickel | 2.33E-05 | 9.61E-06 | 7.54E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.22E-05 |
| Phosphorus | 1.14E-10 | 1.52E-10 | 1.38E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-10 |
| Selenium | 3.96E-07 | 3.56E-08 | 3.67E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.09E-07 |
| Silver | 4.54E-06 | 2.89E-06 | 1.91E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.56E-06 |
| Thallium | 1.96E-03 | 1.08E-04 | 4.58E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.20E-03 |
| Tin | 4.47E-07 | 3.28E-07 | 1.98E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-06 |
| Vanadium | 7.57E-07 | 3.83E-07 | 3.16E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.07E-06 |
| Zinc | 1.24E-05 | 1.46E-05 | 1.24E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.56E-05 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 9.27E-11 | 3.98E-11 | 2.18E-11 | -- | 3.28E-11 | 1.02E-11 | 1.58E-11 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.83E-11 | 7.86E-12 | 4.30E-12 | -- | 9.39E-12 | 2.93E-12 | 4.52E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.38E-10 | 5.94E-11 | 3.26E-11 | -- | 4.90E-11 | 1.53E-11 | 2.36E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 5.17E-05 | 2.22E-05 | 1.22E-05 | -- | 1.28E-05 | 3.99E-06 | 6.17E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.92E-04 | 8.27E-05 | 4.53E-05 | -- | 1.02E-05 | 3.19E-06 | 4.93E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.59E-15 | 6.84E-16 | 3.74E-16 | -- | 5.63E-16 | 1.76E-16 | 2.71E-16 | -- |
| Bromoform | 1.28E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.43E-13 | 1.90E-13 | 1.04E-13 | -- | 8.62E-14 | 2.69E-14 | 4.16E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 9.07E-13 | 3.90E-13 | 2.13E-13 | -- | 1.61E-12 | 5.00E-13 | 7.74E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.42E-13 | 6.12E-14 | 3.35E-14 | -- | 2.52E-14 | 7.86E-15 | 1.21E-14 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 2.19E-13 | 9.43E-14 | 5.16E-14 | -- | 7.76E-14 | 2.42E-14 | 3.74E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 1.19E-08 | 5.12E-09 | 2.80E-09 | -- | 2.11E-09 | 6.57E-10 | 1.02E-09 | -- |
| 1,2,4-Trichlorobenzene | 1.79E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 3.68E-11 | 1.58E-11 | 8.67E-12 | -- | 5.22E-12 | 1.63E-12 | 2.51E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.84E-12 | 7.92E-13 | 4.34E-13 | -- | 3.26E-13 | 1.02E-13 | 1.57E-13 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 2.15E-09 | 9.23E-10 | 5.06E-10 | -- | 4.94E-10 | 1.54E-10 | 2.38E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 3.88E-08 | 1.67E-08 | 9.15E-09 | -- | 6.88E-10 | 2.14E-10 | 3.31E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 3.04E-09 | 1.31E-09 | 7.17E-10 | -- | 5.93E-10 | 1.85E-10 | 2.86E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 5.12E-05 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.35E-05 | 5.79E-06 | 3.17E-06 | -- | 2.38E-06 | 7.43E-07 | 1.15E-06 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.78E-06 | 7.66E-07 | 4.20E-07 | -- | 9.46E-08 | 2.95E-08 | 4.56E-08 | -- |
| Barium | 2.56E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.90E-08 | 8.15E-09 | 4.46E-09 | -- | 3.36E-09 | 1.05E-09 | 1.62E-09 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.70E-06 | 7.29E-07 | 3.99E-07 | -- | 9.00E-08 | 2.81E-08 | 4.34E-08 | -- |
| Boron | 1.28E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.05E-07 | 4.51E-08 | 2.47E-08 | -- | 1.86E-08 | 5.79E-09 | 8.95E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.47E-05 | 1.92E-05 | 1.05E-05 | -- | 1.11E-05 | 3.46E-06 | 5.34E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.25E-09 | 5.39E-10 | 2.95E-10 | -- | 8.88E-11 | 2.77E-11 | 4.28E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.68E-07 | 1.15E-07 | 6.30E-08 | -- | 4.26E-08 | 1.33E-08 | 2.06E-08 | -- |
| Cobalt | 2.56E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 8.13E-06 | 3.50E-06 | 1.92E-06 | -- | 1.44E-06 | 4.49E-07 | 6.94E-07 | -- |
| Lead | 1.28E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.81E-04 | 1.21E-04 | 6.61E-05 | -- | 2.98E-06 | 9.30E-07 | 1.44E-06 | -- |
| Mercury - Inorganic | 2.56E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 9.03E-05 | 3.88E-05 | 2.13E-05 | -- | 8.00E-06 | 2.49E-06 | 3.85E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 6.80E-06 | 2.92E-06 | 1.60E-06 | -- | 2.41E-06 | 7.50E-07 | 1.16E-06 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.22E-05 | 5.24E-06 | 2.87E-06 | -- | 7.56E-06 | 2.36E-06 | 3.64E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 5.12E-13 | 2.20E-13 | 1.20E-13 | -- | 9.06E-14 | 2.82E-14 | 4.37E-14 | -- |
| Selenium | 5.12E-05 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.16E-08 | 9.27E-09 | 5.08E-09 | -- | 7.63E-11 | 2.38E-11 | 3.68E-11 | -- |
| Silver | 2.56E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.47E-07 | 1.06E-07 | 5.82E-08 | -- | 1.09E-07 | 3.41E-08 | 5.27E-08 | -- |
| Thallium | 2.56E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.48E-03 | 6.37E-04 | 3.49E-04 | -- | 2.62E-05 | 8.18E-06 | 1.26E-05 | -- |
| Tin | 5.12E-04 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.28E-07 | 1.84E-07 | 1.01E-07 | -- | 7.58E-08 | 2.36E-08 | 3.65E-08 | -- |
| Vanadium | 2.56E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.36E-06 | 5.85E-07 | 3.21E-07 | -- | 2.41E-07 | 7.52E-08 | 1.16E-07 | -- |
| Zinc | 1.28E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.78E-06 | 7.66E-07 | 4.20E-07 | -- | 6.31E-08 | 1.97E-08 | 3.04E-08 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Infant**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25E-11 | 2.86E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-11 | 6.06E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.36E-11 | 3.92E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-02 | 2.94E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-01 | **2.17E-01** |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-13 | 1.28E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-10 | 2.55E-10 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-10 | 2.29E-10 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-12 | 1.82E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.45E-11 | 9.50E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-07 | 1.26E-07 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-09 | 1.34E-09 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-11 | 2.63E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-07 | 1.13E-07 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-07 | 3.24E-07 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-07 | 2.09E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-06 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.98E-06 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.44E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.22E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-04 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-05 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-12 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.08E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.49E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-06 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-06 |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.07E-10 | 1.32E-10 | 3.03E-11 | -- | 2.39E-11 | 6.85E-12 | 1.06E-11 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.06E-11 | 2.60E-11 | 5.98E-12 | -- | 6.82E-12 | 1.96E-12 | 3.02E-12 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.58E-10 | 1.97E-10 | 4.52E-11 | -- | 3.56E-11 | 1.02E-11 | 1.58E-11 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.71E-04 | 7.36E-05 | 1.69E-05 | -- | 9.31E-06 | 2.67E-06 | 4.12E-06 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 6.38E-04 | 2.74E-04 | 6.30E-05 | -- | 7.43E-06 | 2.13E-06 | 3.29E-06 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.27E-15 | 2.26E-15 | 5.20E-16 | -- | 4.09E-16 | 1.18E-16 | 1.81E-16 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.47E-12 | 6.31E-13 | 1.45E-13 | -- | 6.27E-14 | 1.80E-14 | 2.78E-14 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.00E-12 | 1.29E-12 | 2.97E-13 | -- | 1.17E-12 | 3.35E-13 | 5.17E-13 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.72E-13 | 2.03E-13 | 4.66E-14 | -- | 1.83E-14 | 5.26E-15 | 8.11E-15 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.26E-13 | 3.12E-13 | 7.18E-14 | -- | 5.64E-14 | 1.62E-14 | 2.50E-14 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 3.94E-08 | 1.70E-08 | 3.90E-09 | -- | 1.53E-09 | 4.40E-10 | 6.78E-10 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.22E-10 | 5.25E-11 | 1.21E-11 | -- | 3.79E-12 | 1.09E-12 | 1.68E-12 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.11E-12 | 2.63E-12 | 6.03E-13 | -- | 2.37E-13 | 6.81E-14 | 1.05E-13 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.11E-09 | 3.06E-09 | 7.03E-10 | -- | 3.59E-10 | 1.03E-10 | 1.59E-10 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.29E-07 | 5.53E-08 | 1.27E-08 | -- | 5.00E-10 | 1.44E-10 | 2.21E-10 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.01E-08 | 4.34E-09 | 9.96E-10 | -- | 4.31E-10 | 1.24E-10 | 1.91E-10 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 4.46E-05 | 1.92E-05 | 4.41E-06 | -- | 1.73E-06 | 4.98E-07 | 7.67E-07 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.90E-06 | 2.54E-06 | 5.83E-07 | -- | 6.88E-08 | 1.98E-08 | 3.05E-08 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 6.28E-08 | 2.70E-08 | 6.21E-09 | -- | 2.44E-09 | 7.01E-10 | 1.08E-09 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 5.62E-06 | 2.41E-06 | 5.55E-07 | -- | 6.55E-08 | 1.88E-08 | 2.90E-08 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.47E-07 | 1.49E-07 | 3.43E-08 | -- | 1.35E-08 | 3.88E-09 | 5.98E-09 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.48E-04 | 6.37E-05 | 1.46E-05 | -- | 8.06E-06 | 2.31E-06 | 3.57E-06 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.16E-09 | 1.79E-09 | 4.11E-10 | -- | 6.46E-11 | 1.85E-11 | 2.86E-11 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 8.87E-07 | 3.81E-07 | 8.76E-08 | -- | 3.10E-08 | 8.90E-09 | 1.37E-08 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.70E-05 | 1.16E-05 | 2.66E-06 | -- | 1.05E-06 | 3.01E-07 | 4.64E-07 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 9.30E-04 | 4.00E-04 | 9.19E-05 | -- | 2.17E-06 | 6.23E-07 | 9.60E-07 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 2.99E-04 | 1.29E-04 | 2.96E-05 | -- | 5.81E-06 | 1.67E-06 | 2.57E-06 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.25E-05 | 9.68E-06 | 2.22E-06 | -- | 1.75E-06 | 5.02E-07 | 7.74E-07 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 4.04E-05 | 1.74E-05 | 3.99E-06 | -- | 5.50E-06 | 1.58E-06 | 2.43E-06 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.70E-12 | 7.29E-13 | 1.67E-13 | -- | 6.59E-14 | 1.89E-14 | 2.92E-14 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.14E-08 | 3.07E-08 | 7.05E-09 | -- | 5.55E-11 | 1.59E-11 | 2.46E-11 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 8.19E-07 | 3.52E-07 | 8.09E-08 | -- | 7.95E-08 | 2.28E-08 | 3.52E-08 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.91E-03 | 2.11E-03 | 4.85E-04 | -- | 1.91E-05 | 5.48E-06 | 8.44E-06 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.42E-06 | 6.10E-07 | 1.40E-07 | -- | 5.51E-08 | 1.58E-08 | 2.44E-08 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.51E-06 | 1.94E-06 | 4.46E-07 | -- | 1.75E-07 | 5.03E-08 | 7.76E-08 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.90E-06 | 2.54E-06 | 5.83E-07 | -- | 4.59E-08 | 1.32E-08 | 2.03E-08 | -- |

**Hazard Quotients for a Farmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce Hazard Quotient | Ingestion - Aboveground Prot. Garden Produce Hazard Quotient | Ingestion - Belowground Garden Produce Hazard Quotient | Ingestion - Home Grown Fruit Hazard Quotient | Ingestion - Wild Game Hazard Quotient | Ingestion - Fish - Lake Hazard Quotient | Ingestion - Fish - River Hazard Quotient | Ingestion - Surface Water Hazard Quotient | Ingestion - Beef Hazard Quotient | Ingestion - Milk Hazard Quotient | Ingestion - Pork Hazard Quotient | Ingestion - Poultry Hazard Quotient | Ingestion - Egg Hazard Quotient | Dermal - Surface Water Hazard Quotient | Ingestion - Breast Milk Hazard Quotient | Total (All Pathways) Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | 3.02E-09 | 5.52E-09 | 3.66E-10 | 2.71E-09 | -- | -- | -- | -- | 1.16E-11 | 6.16E-11 | 1.78E-12 | 3.44E-12 | 3.34E-12 | -- | -- | 1.22E-08 |
| Anthracene | 2.68E-10 | 4.89E-10 | 5.11E-13 | 1.39E-14 | -- | -- | -- | -- | 1.73E-12 | 8.42E-12 | 2.90E-13 | 5.98E-13 | 5.81E-13 | -- | -- | 8.74E-10 |
| Fluorene | 3.02E-09 | 5.52E-09 | 4.86E-12 | 3.92E-13 | -- | -- | -- | -- | 1.55E-11 | 7.87E-11 | 2.44E-12 | 4.85E-12 | 4.71E-12 | -- | -- | 9.42E-09 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 5.29E-05 | 9.65E-05 | 9.18E-06 | 1.15E-07 | -- | -- | -- | -- | 1.57E-04 | 4.96E-04 | 3.65E-05 | 8.72E-07 | 8.48E-07 | -- | -- | 1.13E-03 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.45E-04 | 2.41E-04 | 3.67E-05 | 2.18E-05 | -- | -- | -- | -- | 1.06E-03 | 4.87E-03 | 1.22E-04 | 2.69E-06 | 2.61E-06 | -- | -- | 7.59E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.36E-13 | 6.09E-13 | 2.61E-12 | 2.07E-15 | -- | -- | -- | -- | 8.98E-11 | 3.04E-10 | 4.01E-12 | 4.63E-14 | 4.50E-14 | -- | -- | 4.01E-10 |
| Bromoform | 1.10E-10 | 2.01E-10 | 1.01E-10 | 5.15E-15 | -- | -- | -- | -- | 2.48E-07 | 8.38E-07 | 1.11E-08 | 1.28E-10 | 1.24E-10 | -- | -- | 1.10E-06 |
| Carbon Tetrachloride | 1.28E-10 | 2.33E-10 | 1.60E-09 | 5.72E-13 | -- | -- | -- | -- | 8.13E-08 | 2.75E-07 | 3.63E-09 | 4.20E-11 | 4.08E-11 | -- | -- | 3.62E-07 |
| Chloroform | 5.82E-11 | 1.06E-10 | 2.66E-10 | 2.00E-13 | -- | -- | -- | -- | 3.45E-09 | 1.17E-08 | 1.54E-10 | 1.78E-12 | 1.73E-12 | -- | -- | 1.57E-08 |
| Trichlorofluoromethane (FREON 11) | 4.63E-11 | 8.40E-11 | 3.30E-10 | 2.93E-13 | -- | -- | -- | -- | 6.83E-08 | 2.31E-07 | 3.05E-09 | 3.52E-11 | 3.42E-11 | -- | -- | 3.03E-07 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.17E-07 | 2.13E-07 | 2.31E-07 | 1.31E-11 | -- | -- | -- | -- | 2.82E-07 | 1.01E-06 | 1.85E-08 | 3.77E-10 | 3.66E-10 | -- | -- | 1.93E-06 |
| 1,2,4-Trichlorobenzene | 1.05E-09 | 1.92E-09 | 5.29E-10 | 4.50E-13 | -- | -- | -- | -- | 2.26E-08 | 7.69E-08 | 1.03E-09 | 1.22E-11 | 1.18E-11 | -- | -- | 1.04E-07 |
| 1,2-Dichlorobenzene | 1.21E-10 | 2.19E-10 | 8.39E-10 | 1.07E-12 | -- | -- | -- | -- | 1.98E-09 | 6.71E-09 | 8.95E-11 | 1.05E-12 | 1.02E-12 | -- | -- | 9.97E-09 |
| Hexachlorobenzene | 1.09E-08 | 1.98E-08 | 1.01E-08 | 3.77E-11 | -- | -- | -- | -- | 1.17E-07 | 4.04E-07 | 6.15E-09 | 8.38E-11 | 8.14E-11 | -- | -- | 5.80E-07 |
| Pentachlorobenzene | 2.33E-07 | 4.26E-07 | 1.33E-08 | 6.56E-11 | -- | -- | -- | -- | 2.68E-07 | 1.11E-06 | 4.98E-08 | 1.10E-09 | 1.07E-09 | -- | -- | 2.30E-06 |
| Pentachlorophenol | 4.85E-07 | 3.67E-08 | 9.24E-07 | 4.16E-07 | -- | -- | -- | -- | 3.46E-08 | 1.77E-07 | 8.25E-10 | 2.16E-13 | 2.10E-13 | -- | -- | 2.09E-06 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | 1.34E-04 | 1.18E-04 | 7.49E-06 | -- | -- | -- | -- | -- | 1.26E-05 | 2.97E-05 | 6.99E-07 | 8.88E-09 | 8.63E-09 | -- | -- | 3.74E-04 |
| Arsenic | 1.59E-05 | 3.11E-06 | 2.64E-07 | -- | -- | -- | -- | -- | 3.15E-06 | 2.19E-06 | 1.40E-07 | 1.93E-09 | 1.88E-09 | -- | -- | 3.39E-05 |
| Barium | 1.99E-07 | 1.68E-07 | 5.28E-09 | -- | -- | -- | -- | -- | 2.53E-09 | 1.37E-07 | 1.31E-10 | 1.68E-12 | 1.63E-12 | -- | -- | 6.13E-07 |
| Beryllium | 2.35E-06 | 1.21E-06 | 4.72E-08 | -- | -- | -- | -- | -- | 3.27E-07 | 5.71E-09 | 4.03E-08 | 8.83E-10 | 8.58E-10 | -- | -- | 1.27E-05 |
| Boron | 4.34E-05 | 6.51E-05 | 3.89E-06 | -- | -- | -- | -- | -- | 1.23E-06 | 6.49E-06 | 7.11E-08 | 8.34E-10 | 8.10E-10 | -- | -- | 1.21E-04 |
| Cadmium | 9.85E-04 | 1.54E-03 | 5.31E-05 | -- | -- | -- | -- | -- | 5.73E-06 | 7.42E-06 | 4.76E-07 | 5.20E-06 | 2.08E-07 | -- | -- | 2.84E-03 |
| Chromium (Total) | 1.62E-08 | 1.69E-09 | 1.05E-10 | -- | -- | -- | -- | -- | 8.38E-09 | 5.34E-08 | 3.08E-10 | 3.79E-12 | 3.68E-12 | -- | -- | 8.65E-08 |
| Chromium VI | 3.45E-06 | 3.60E-07 | 2.23E-08 | -- | -- | -- | -- | -- | 1.79E-06 | 1.14E-05 | 6.57E-08 | 8.08E-10 | 7.85E-10 | -- | -- | 1.85E-05 |
| Cobalt | 5.27E-05 | 1.94E-05 | 1.06E-06 | -- | -- | -- | -- | -- | 9.71E-05 | 4.63E-04 | 5.42E-06 | 8.99E-08 | 8.73E-08 | -- | -- | 6.82E-04 |
| Lead | 8.50E-04 | 1.05E-03 | 4.69E-05 | -- | -- | -- | -- | -- | 2.17E-05 | 3.78E-04 | 2.35E-06 | 4.68E-08 | 4.55E-08 | -- | -- | 3.78E-03 |
| Mercury - Inorganic | 2.52E-04 | 3.61E-04 | 6.03E-05 | 2.86E-05 | -- | -- | -- | -- | 5.12E-05 | 3.56E-04 | 5.87E-08 | 1.63E-06 | 2.78E-06 | -- | -- | 1.58E-03 |
| Methyl Mercury | 5.33E-05 | 5.50E-05 | 1.25E-05 | 1.21E-05 | -- | -- | -- | -- | 1.17E-06 | 1.04E-05 | 7.74E-10 | 1.99E-08 | 3.38E-08 | -- | -- | 1.82E-04 |
| Nickel | 6.14E-05 | 3.13E-05 | 1.81E-06 | -- | -- | -- | -- | -- | 3.50E-05 | 1.30E-04 | 2.29E-06 | 3.99E-08 | 3.88E-08 | -- | -- | 3.33E-04 |
| Phosphorus | 3.03E-10 | 4.93E-10 | 3.32E-11 | -- | -- | -- | -- | -- | 3.61E-10 | 1.98E-09 | 3.01E-11 | 4.76E-13 | 4.63E-13 | -- | -- | 3.20E-09 |
| Selenium | 1.04E-06 | 1.16E-07 | 8.80E-09 | -- | -- | -- | -- | -- | 2.09E-07 | 1.29E-05 | 3.53E-07 | 1.90E-08 | 3.23E-08 | -- | -- | 1.48E-05 |
| Silver | 1.20E-05 | 9.40E-06 | 4.59E-07 | -- | -- | -- | -- | -- | 2.50E-06 | 4.03E-04 | 9.04E-08 | 7.51E-10 | 7.30E-10 | -- | -- | 4.29E-04 |
| Thallium | 5.14E-03 | 3.50E-04 | 1.10E-05 | -- | -- | -- | -- | -- | 2.36E-02 | 2.57E-02 | 1.63E-03 | 3.08E-05 | 2.99E-05 | -- | -- | 6.40E-02 |
| Tin | 1.18E-06 | 1.07E-06 | 4.76E-08 | -- | -- | -- | -- | -- | 9.16E-06 | 4.03E-05 | 9.23E-07 | 1.86E-08 | 1.81E-08 | -- | -- | 5.50E-05 |
| Vanadium | 1.99E-06 | 1.24E-06 | 7.58E-08 | -- | -- | -- | -- | -- | 6.17E-07 | 2.48E-06 | 8.05E-08 | 1.80E-09 | 1.75E-09 | -- | -- | 1.37E-05 |
| Zinc | 3.28E-05 | 4.76E-05 | 2.97E-05 | -- | -- | -- | -- | -- | 1.46E-07 | 1.25E-06 | 1.09E-08 | 1.63E-08 | 2.77E-08 | -- | -- | 1.21E-04 |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**

**Process Upset Case - 400,000 tpy**

**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 1.76E-11 | 7.57E-12 | 5.22E-12 | -- | 1.37E-12 | 3.93E-13 | 6.06E-13 | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.47E-12 | 1.49E-12 | 1.03E-12 | -- | 3.91E-13 | 1.12E-13 | 1.73E-13 | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 2.63E-11 | 1.13E-11 | 7.78E-12 | -- | 2.04E-12 | 5.86E-13 | 9.03E-13 | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 9.84E-06 | 4.23E-06 | 2.92E-06 | -- | 5.35E-07 | 1.54E-07 | 2.37E-07 | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.20E-05 | 2.24E-05 | 1.54E-05 | -- | 6.07E-07 | 1.74E-07 | 2.69E-07 | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 3.02E-16 | 1.30E-16 | 8.95E-17 | -- | 2.35E-17 | 6.74E-18 | 1.04E-17 | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 8.41E-14 | 3.62E-14 | 2.49E-14 | -- | 3.60E-15 | 1.03E-15 | 1.59E-15 | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 1.72E-13 | 7.41E-14 | 5.11E-14 | -- | 6.69E-14 | 1.92E-14 | 2.96E-14 | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 2.70E-14 | 1.16E-14 | 8.01E-15 | -- | 1.05E-15 | 3.02E-16 | 4.65E-16 | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.16E-14 | 1.79E-14 | 1.23E-14 | -- | 3.24E-15 | 9.29E-16 | 1.43E-15 | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 2.26E-09 | 9.72E-10 | 6.70E-10 | -- | 8.78E-11 | 2.52E-11 | 3.89E-11 | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 6.99E-12 | 3.01E-12 | 2.07E-12 | -- | 2.17E-13 | 6.24E-14 | 9.62E-14 | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 3.50E-13 | 1.50E-13 | 1.04E-13 | -- | 1.36E-14 | 3.91E-15 | 6.02E-15 | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 4.08E-10 | 1.75E-10 | 1.21E-10 | -- | 2.06E-11 | 5.91E-12 | 9.12E-12 | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.38E-09 | 3.17E-09 | 2.19E-09 | -- | 2.87E-11 | 8.23E-12 | 1.27E-11 | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 5.78E-10 | 2.49E-10 | 1.71E-10 | -- | 2.47E-11 | 7.09E-12 | 1.09E-11 | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.62E-06 | 1.56E-06 | 1.07E-06 | -- | 1.41E-07 | 4.04E-08 | 6.23E-08 | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.79E-07 | 2.06E-07 | 1.42E-07 | -- | 5.59E-09 | 1.60E-09 | 2.47E-09 | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.10E-09 | 2.19E-09 | 1.51E-09 | -- | 1.98E-10 | 5.69E-11 | 8.78E-11 | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.57E-07 | 1.96E-07 | 1.35E-07 | -- | 5.33E-09 | 1.53E-09 | 2.36E-09 | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 2.82E-08 | 1.21E-08 | 8.36E-09 | -- | 1.10E-09 | 3.15E-10 | 4.85E-10 | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.20E-05 | 5.18E-06 | 3.57E-06 | -- | 6.55E-07 | 1.88E-07 | 2.90E-07 | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.37E-10 | 1.45E-10 | 1.00E-10 | -- | 5.24E-12 | 1.51E-12 | 2.32E-12 | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.20E-08 | 3.10E-08 | 2.13E-08 | -- | 2.52E-09 | 7.23E-10 | 1.11E-09 | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.19E-06 | 9.41E-07 | 6.49E-07 | -- | 8.51E-08 | 2.44E-08 | 3.77E-08 | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 7.57E-05 | 3.25E-05 | 2.24E-05 | -- | 1.76E-07 | 5.06E-08 | 7.81E-08 | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 3.24E-05 | 1.39E-05 | 9.59E-06 | -- | 6.29E-07 | 1.81E-07 | 2.78E-07 | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 1.83E-06 | 7.87E-07 | 5.43E-07 | -- | 1.42E-07 | 4.09E-08 | 6.30E-08 | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.28E-06 | 1.41E-06 | 9.73E-07 | -- | 4.47E-07 | 1.28E-07 | 1.98E-07 | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.38E-13 | 5.92E-14 | 4.08E-14 | -- | 5.35E-15 | 1.54E-15 | 2.37E-15 | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 5.80E-09 | 2.49E-09 | 1.72E-09 | -- | 4.51E-12 | 1.29E-12 | 1.99E-12 | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.65E-08 | 2.86E-08 | 1.97E-08 | -- | 6.46E-09 | 1.85E-09 | 2.86E-09 | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 3.99E-04 | 1.71E-04 | 1.18E-04 | -- | 1.55E-06 | 4.45E-07 | 6.86E-07 | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.15E-07 | 4.96E-08 | 3.42E-08 | -- | 4.48E-09 | 1.29E-09 | 1.98E-09 | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 3.67E-07 | 1.58E-07 | 1.09E-07 | -- | 1.43E-08 | 4.10E-09 | 6.31E-09 | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 4.80E-07 | 2.06E-07 | 1.42E-07 | -- | 3.73E-09 | 1.07E-09 | 1.65E-09 | -- |

**Hazard Quotients for a Day Care Worker Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.67E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-05 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.09E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.62E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.13E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.75E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.05E-09 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.28E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.39E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-08 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-09 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.50E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.37E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.15E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.98E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.06E-08 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-05 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.92E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-07 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-06 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-04 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.69E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.41E-06 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.44E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-13 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-08 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-07 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.91E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.58E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.35E-07 |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 3.18E-12 | -- | -- | -- | 2.47E-13 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 6.28E-13 | -- | -- | -- | 7.07E-14 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 4.75E-12 | -- | -- | -- | 3.69E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 1.78E-06 | -- | -- | -- | 9.70E-08 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 5.67E-06 | -- | -- | -- | 6.61E-08 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 5.46E-17 | -- | -- | -- | 4.24E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.52E-14 | -- | -- | -- | 6.50E-16 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 3.11E-14 | -- | -- | -- | 1.21E-14 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 4.89E-15 | -- | -- | -- | 1.90E-16 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 7.53E-15 | -- | -- | -- | 5.85E-16 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 4.09E-10 | -- | -- | -- | 1.59E-11 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 1.26E-12 | -- | -- | -- | 3.93E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 6.33E-14 | -- | -- | -- | 2.46E-15 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 7.37E-11 | -- | -- | -- | 3.72E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 1.33E-09 | -- | -- | -- | 5.18E-12 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 1.05E-10 | -- | -- | -- | 4.47E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 3.95E-07 | -- | -- | -- | 1.54E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 5.23E-08 | -- | -- | -- | 6.09E-10 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 5.56E-10 | -- | -- | -- | 2.16E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 4.98E-08 | -- | -- | -- | 5.81E-10 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 3.07E-09 | -- | -- | -- | 1.19E-10 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.31E-06 | -- | -- | -- | 7.14E-08 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.68E-11 | -- | -- | -- | 5.72E-13 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 7.85E-09 | -- | -- | -- | 2.74E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 2.39E-07 | -- | -- | -- | 9.27E-09 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 8.25E-06 | -- | -- | -- | 1.92E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 4.12E-06 | -- | -- | -- | 8.01E-08 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 2.00E-07 | -- | -- | -- | 1.55E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.58E-07 | -- | -- | -- | 4.87E-08 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 1.50E-14 | -- | -- | -- | 5.83E-16 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 6.32E-10 | -- | -- | -- | 4.91E-13 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 7.25E-09 | -- | -- | -- | 7.04E-10 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 4.35E-05 | -- | -- | -- | 1.69E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.26E-08 | -- | -- | -- | 4.88E-10 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 4.00E-08 | -- | -- | -- | 1.55E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 5.23E-08 | -- | -- | -- | 4.06E-10 | -- | -- | -- |

**Hazard Quotients for a Recreational-Sport Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.99E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.11E-12 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.74E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.88E-17 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.08E-15 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.11E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.24E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.57E-14 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.74E-11 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-10 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.10E-07 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.29E-08 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.04E-08 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.74E-11 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.12E-09 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.27E-06 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.20E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.33E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.95E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-05 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.16E-08 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.27E-08 |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | 6.90E-12 | -- | -- | -- | 5.36E-13 | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.36E-12 | -- | -- | -- | 1.53E-13 | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | 1.03E-11 | -- | -- | -- | 8.00E-13 | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | 3.86E-06 | -- | -- | -- | 2.10E-07 | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | 1.62E-05 | -- | -- | -- | 1.88E-07 | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | 1.18E-16 | -- | -- | -- | 9.20E-18 | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 3.30E-14 | -- | -- | -- | 1.41E-15 | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | 6.76E-14 | -- | -- | -- | 2.62E-14 | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | 1.06E-14 | -- | -- | -- | 4.12E-16 | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.63E-14 | -- | -- | -- | 1.27E-15 | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | 8.87E-10 | -- | -- | -- | 3.44E-11 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | 2.74E-12 | -- | -- | -- | 8.53E-14 | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | 1.37E-13 | -- | -- | -- | 5.33E-15 | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 1.60E-10 | -- | -- | -- | 8.08E-12 | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.89E-09 | -- | -- | -- | 1.12E-11 | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | 2.27E-10 | -- | -- | -- | 9.69E-12 | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | 1.13E-06 | -- | -- | -- | 4.39E-08 | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.49E-07 | -- | -- | -- | 1.74E-09 | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 1.59E-09 | -- | -- | -- | 6.18E-11 | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | 1.42E-07 | -- | -- | -- | 1.66E-09 | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | 8.79E-09 | -- | -- | -- | 3.41E-10 | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | 3.75E-06 | -- | -- | -- | 2.04E-07 | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.05E-10 | -- | -- | -- | 1.63E-12 | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | 2.24E-08 | -- | -- | -- | 7.84E-10 | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | 6.82E-07 | -- | -- | -- | 2.65E-08 | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | 2.35E-05 | -- | -- | -- | 5.49E-08 | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | 1.02E-05 | -- | -- | -- | 1.98E-07 | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | 5.70E-07 | -- | -- | -- | 4.43E-08 | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | 1.02E-06 | -- | -- | -- | 1.39E-07 | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | 4.29E-14 | -- | -- | -- | 1.67E-15 | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 1.81E-09 | -- | -- | -- | 1.40E-12 | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | 2.07E-08 | -- | -- | -- | 2.01E-09 | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | 1.24E-04 | -- | -- | -- | 4.83E-07 | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 3.59E-08 | -- | -- | -- | 1.39E-09 | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | 1.14E-07 | -- | -- | -- | 4.44E-09 | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | 1.49E-07 | -- | -- | -- | 1.16E-09 | -- | -- | -- |

**Hazard Quotients for a Rec. Camper Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.44E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-05 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-16 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.38E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-14 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.21E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-13 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-10 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-10 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13E-09 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.95E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-08 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08E-07 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-05 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-07 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-06 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-14 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-04 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Swimmer Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | 2.67E-11 | -- | -- | -- | -- | -- | 1.93E-11 | -- | 4.61E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | 2.01E-12 | -- | -- | -- | -- | -- | 2.38E-12 | -- | 4.38E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | 1.15E-10 | -- | -- | -- | -- | -- | 8.71E-11 | -- | 2.02E-10 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | 2.45E-07 | -- | -- | -- | -- | -- | 4.72E-06 | -- | 4.97E-06 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | 8.71E-07 | -- | -- | -- | -- | -- | 2.70E-07 | -- | 1.14E-06 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | 3.37E-11 | -- | -- | -- | -- | -- | -- | -- | 3.37E-11 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | 1.08E-07 | -- | -- | -- | -- | -- | 2.17E-09 | -- | 1.10E-07 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | 2.13E-08 | -- | -- | -- | -- | -- | -- | -- | 2.13E-08 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | 2.22E-09 | -- | -- | -- | -- | -- | -- | -- | 2.22E-09 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | 2.54E-08 | -- | -- | -- | -- | -- | -- | -- | 2.54E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.27E-08 | -- | -- | -- | -- | -- | 1.12E-08 | -- | 2.39E-08 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 1.62E-09 | -- | -- | -- | -- | -- | 5.79E-10 | -- | 2.20E-09 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | 2.43E-10 | -- | -- | -- | -- | -- | 8.33E-11 | -- | 3.27E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 6.39E-09 | -- | -- | -- | -- | -- | 2.75E-08 | -- | 3.39E-08 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | 8.12E-09 | -- | -- | -- | -- | -- | 5.28E-10 | -- | 8.65E-09 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | 4.35E-07 | -- | -- | -- | -- | -- | 3.45E-07 | -- | 7.81E-07 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | 4.98E-05 | -- | -- | -- | -- | -- | 1.02E-06 | -- | 5.08E-05 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | 1.02E-05 | -- | -- | -- | -- | -- | 2.09E-07 | -- | 1.04E-05 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 7.70E-08 | -- | -- | -- | -- | -- | 1.57E-09 | -- | 7.85E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 5.84E-07 | -- | -- | -- | -- | -- | 1.19E-08 | -- | 5.96E-07 |
| Boron | -- | -- | -- | -- | -- | -- | -- | 5.59E-06 | -- | -- | -- | -- | -- | 1.14E-07 | -- | 5.70E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | 1.00E-04 | -- | -- | -- | -- | -- | 2.04E-06 | -- | 1.02E-04 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | 1.09E-08 | -- | -- | -- | -- | -- | 2.24E-10 | -- | 1.12E-08 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | 2.34E-06 | -- | -- | -- | -- | -- | 9.54E-08 | -- | 2.43E-06 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | 3.01E-05 | -- | -- | -- | -- | -- | 2.46E-07 | -- | 3.03E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | 9.00E-05 | -- | -- | -- | -- | -- | 6.29E-07 | -- | 9.06E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | 5.17E-06 | -- | -- | -- | -- | -- | 1.06E-07 | -- | 5.28E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | 3.46E-08 | -- | -- | -- | -- | -- | 7.06E-10 | -- | 3.53E-08 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | 3.14E-05 | -- | -- | -- | -- | -- | 1.28E-07 | -- | 3.15E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | 2.35E-11 | -- | -- | -- | -- | -- | -- | -- | 2.35E-11 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | 7.01E-07 | -- | -- | -- | -- | -- | 1.43E-08 | -- | 7.16E-07 |
| Silver | -- | -- | -- | -- | -- | -- | -- | 4.90E-06 | -- | -- | -- | -- | -- | 6.00E-08 | -- | 4.96E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | 3.49E-03 | -- | -- | -- | -- | -- | 7.14E-05 | -- | 3.57E-03 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 3.25E-07 | -- | -- | -- | -- | -- | 6.63E-09 | -- | 3.31E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | 4.13E-07 | -- | -- | -- | -- | -- | 8.43E-09 | -- | 4.21E-07 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | 4.80E-06 | -- | -- | -- | -- | -- | 5.89E-08 | -- | 4.86E-06 |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient = 2.00E-01**

| COPC | Reference Toxicity Dose (mg/kg-day) - inhalation | Reference Toxicity Dose (mg/kg-day) - oral | Reference Toxicity Dose (mg/kg-day) - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor Hazard Quotient | Soil/Dust Ingestion - Winter - Outdoor Hazard Quotient | Dust Ingestion - Summer - Indoor Hazard Quotient | Dust Ingestion - Winter - Indoor Hazard Quotient | Soil/Dust Dermal - Summer - Outdoor Hazard Quotient | Soil/Dust Dermal - Winter - Outdoor Hazard Quotient | Dust Dermal - Summer - Indoor Hazard Quotient | Dust Dermal - Winter - Indoor Hazard Quotient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | |
| Acenaphthene | 6.00E-02 | 6.00E-02 | 6.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Anthracene | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluorene | 4.00E-02 | 4.00E-02 | 4.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.00E-05 | 2.00E-05 | 2.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxins and Furans** | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.30E-09 | 2.30E-09 | 2.30E-09 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.00E+00 | 2.00E+00 | 2.00E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | 2.82E-03 | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 7.00E-04 | 7.00E-04 | 7.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | -- | 1.00E-02 | 1.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 3.00E-01 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | 2.10E-04 | 2.10E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 3.95E+00 | 1.60E-03 | 1.60E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | 4.30E-01 | 4.30E-01 | 4.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | -- | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorobenzene | 1.00E-03 | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 6.00E-03 | 6.00E-03 | 6.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | |
| Antimony | 1.13E-04 | 4.00E-04 | 4.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | -- | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Barium | 5.64E-04 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | 2.00E-03 | 2.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Boron | 2.82E-03 | 2.00E-01 | 2.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 1.00E+00 | 5.00E-04 | 5.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium (Total) | 1.00E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium VI | -- | 1.00E-03 | 1.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 5.64E-05 | 1.40E-03 | 1.40E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 2.82E-04 | 1.85E-03 | 1.85E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury - Inorganic | 5.64E-04 | 3.00E-04 | 3.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Mercury | 2.00E-04 | 2.00E-04 | 2.00E-04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | 2.00E-02 | 2.00E-02 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Phosphorus | 1.43E+04 | 1.43E+04 | 1.43E+04 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | 1.13E-04 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 5.64E-06 | 5.00E-03 | 5.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | 5.64E-05 | 8.00E-05 | 8.00E-05 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | 1.13E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | 5.64E-04 | 9.00E-03 | 9.00E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 2.82E-03 | 3.00E-01 | 3.00E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- |

**Hazard Quotients for a Hunter/Angler Receptor Exposed to COPC from the Project - Toddler**
**Process Upset Case - 400,000 tpy**
**Target Hazard Quotient =** 2.00E-01

| COPC | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Ingestion - Breast Milk | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient | Hazard Quotient |
| **PAHs** | | | | | | | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | 2.06E-12 | 2.60E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-12 |
| Anthracene | -- | -- | -- | -- | 2.90E-13 | 7.78E-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-12 |
| Fluorene | -- | -- | -- | -- | 2.67E-12 | 2.24E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-11 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | 1.86E-05 | 1.54E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-02 |
| **Dioxins and Furans** | | | | | | | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | 3.19E-04 | 6.63E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E-03 |
| **VOCs** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | 7.79E-13 | 1.31E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-11 |
| Bromoform | -- | -- | -- | -- | 2.18E-09 | 3.10E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.32E-08 |
| Carbon Tetrachloride | -- | -- | -- | -- | 7.11E-10 | 1.65E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-08 |
| Chloroform | -- | -- | -- | -- | 2.81E-11 | 2.72E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | 6.00E-10 | 9.86E-09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | 1.81E-08 | 9.84E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-06 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | 2.66E-10 | 2.51E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-08 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | 2.10E-11 | 7.16E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.37E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | 3.22E-09 | 1.56E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-06 |
| Pentachlorobenzene | -- | -- | -- | -- | 3.87E-08 | 1.47E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-06 |
| Pentachlorophenol | -- | -- | -- | -- | 8.11E-09 | 5.99E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.99E-05 |
| **Inorganics** | | | | | | | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | 4.19E-06 | 2.44E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-03 |
| Arsenic | -- | -- | -- | -- | 1.34E-06 | 1.25E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-04 |
| Barium | -- | -- | -- | -- | 8.94E-10 | 1.88E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-07 |
| Beryllium | -- | -- | -- | -- | 9.46E-08 | 1.43E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-05 |
| Boron | -- | -- | -- | -- | 4.00E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.00E-07 |
| Cadmium | -- | -- | -- | -- | 1.52E-06 | 2.94E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.94E-02 |
| Chromium (Total) | -- | -- | -- | -- | 3.78E-09 | 5.36E-07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-07 |
| Chromium VI | -- | -- | -- | -- | 8.07E-07 | 2.11E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-05 |
| Cobalt | -- | -- | -- | -- | 3.97E-05 | 7.36E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.76E-04 |
| Lead | -- | -- | -- | -- | 5.72E-06 | 2.30E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-03 |
| Mercury - Inorganic | -- | -- | -- | -- | 9.78E-06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.78E-06 |
| Methyl Mercury | -- | -- | -- | -- | 4.02E-07 | 5.11E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.11E-03 |
| Nickel | -- | -- | -- | -- | 1.32E-05 | 1.20E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-03 |
| Phosphorus | -- | -- | -- | -- | 1.16E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-10 |
| Selenium | -- | -- | -- | -- | 9.84E-08 | 2.92E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-05 |
| Silver | -- | -- | -- | -- | 1.02E-06 | 1.06E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-04 |
| Thallium | -- | -- | -- | -- | 9.33E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.33E-03 |
| Tin | -- | -- | -- | -- | 2.76E-06 | 2.38E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-04 |
| Vanadium | -- | -- | -- | -- | 1.79E-07 | 1.61E-05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.63E-05 |
| Zinc | -- | -- | -- | -- | 4.31E-08 | 1.09E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-03 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.97E-12 | 8.49E-13 | 1.18E-13 | -- | 1.14E-12 | 2.77E-13 | 4.42E-13 | -- | 5.71E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 3.86E-18 | 1.66E-18 | 2.32E-19 | -- | 1.23E-18 | 2.98E-19 | 4.76E-19 | -- | 9.39E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.56E-18 | 1.96E-18 | 2.73E-19 | -- | 2.63E-18 | 6.38E-19 | 1.02E-18 | -- | 6.34E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.06E-16 | 4.54E-17 | 6.34E-18 | -- | 3.05E-17 | 7.40E-18 | 1.18E-17 | -- | 1.07E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 4.92E-14 | 2.11E-14 | 2.95E-15 | -- | 1.85E-14 | 4.48E-15 | 7.15E-15 | -- | 2.45E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.21E-13 | 5.20E-14 | 7.26E-15 | -- | 3.85E-14 | 9.32E-15 | 1.49E-14 | -- | 5.30E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.96E-11 | 2.56E-11 | 3.57E-12 | -- | 5.16E-12 | 1.25E-12 | 2.00E-12 | -- | 6.62E-10 |

**Incremental Lifetime Cancer Risk for a Bowmanville Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 4.75E-12 | 6.97E-13 | 5.89E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.37E-15 | 1.33E-15 | 2.44E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-15 |
| Carbon Tetrachloride | 9.13E-16 | 1.21E-14 | 1.56E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-14 |
| Dichloromethane | 1.56E-13 | 1.06E-12 | 4.70E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.54E-13 | 3.50E-13 | 4.69E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-12 |
| Pentachlorophenol | 1.14E-12 | 5.54E-11 | 8.99E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 8.11E-11 | 1.33E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.54E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.48E-12 | 6.36E-13 | 8.87E-14 | -- | 8.55E-13 | 2.07E-13 | 3.31E-13 | -- | 4.02E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.89E-18 | 1.24E-18 | 1.74E-19 | -- | 9.20E-19 | 2.23E-19 | 3.56E-19 | -- | 7.03E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.41E-18 | 1.47E-18 | 2.05E-19 | -- | 1.97E-18 | 4.78E-19 | 7.64E-19 | -- | 4.75E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 7.92E-17 | 3.40E-17 | 4.75E-18 | -- | 2.29E-17 | 5.55E-18 | 8.86E-18 | -- | 8.01E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 3.68E-14 | 1.58E-14 | 2.21E-15 | -- | 1.38E-14 | 3.36E-15 | 5.36E-15 | -- | 1.84E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 9.06E-14 | 3.90E-14 | 5.44E-15 | -- | 2.88E-14 | 6.99E-15 | 1.12E-14 | -- | 3.65E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 4.28E-11 | 1.84E-11 | 2.57E-12 | -- | 3.71E-12 | 8.99E-13 | 1.44E-12 | -- | 4.61E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 3.55E-12 | 5.22E-13 | 4.05E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.84E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.03E-15 | 9.97E-16 | 1.68E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.73E-15 |
| Carbon Tetrachloride | 6.84E-16 | 9.09E-15 | 1.07E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-14 |
| Dichloromethane | 1.17E-13 | 7.98E-13 | 3.23E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.95E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.65E-13 | 2.62E-13 | 3.22E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.92E-13 |
| Pentachlorophenol | 8.52E-13 | 4.15E-11 | 6.18E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 5.82E-11 | 9.58E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.98E-10 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.18E-12 | 2.66E-12 | 3.71E-13 | -- | 3.57E-12 | 8.65E-13 | 1.38E-12 | -- | 1.24E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.21E-17 | 5.20E-18 | 7.25E-19 | -- | 3.84E-18 | 9.31E-19 | 1.49E-18 | -- | 2.94E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.43E-17 | 6.13E-18 | 8.55E-19 | -- | 8.24E-18 | 2.00E-18 | 3.19E-18 | -- | 1.97E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.31E-16 | 1.42E-16 | 1.98E-17 | -- | 9.55E-17 | 2.32E-17 | 3.70E-17 | -- | 3.34E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.54E-13 | 6.61E-14 | 9.23E-15 | -- | 5.78E-14 | 1.40E-14 | 2.24E-14 | -- | 7.63E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 3.78E-13 | 1.63E-13 | 2.27E-14 | -- | 1.20E-13 | 2.92E-14 | 4.66E-14 | -- | 8.95E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.33E-10 | 5.71E-11 | 7.96E-12 | -- | 1.15E-11 | 2.79E-12 | 4.46E-12 | -- | 1.22E-09 |

**Incremental Lifetime Cancer Risk for a Courtice Road Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.48E-11 | 2.18E-12 | 9.82E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.29E-15 | 4.16E-15 | 4.07E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-14 |
| Carbon Tetrachloride | 2.86E-15 | 3.80E-14 | 2.60E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.28E-14 |
| Dichloromethane | 4.88E-13 | 3.33E-12 | 7.83E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.15E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.11E-12 | 1.10E-12 | 7.82E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-12 |
| Pentachlorophenol | 3.56E-12 | 1.73E-10 | 1.50E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.17E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.81E-10 | 2.97E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-09 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.70E-12 | 7.33E-13 | 1.02E-13 | -- | 9.85E-13 | 2.39E-13 | 3.81E-13 | -- | 4.84E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 3.33E-18 | 1.43E-18 | 2.00E-19 | -- | 1.06E-18 | 2.57E-19 | 4.10E-19 | -- | 8.10E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 3.93E-18 | 1.69E-18 | 2.36E-19 | -- | 2.27E-18 | 5.51E-19 | 8.80E-19 | -- | 5.47E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 9.12E-17 | 3.92E-17 | 5.47E-18 | -- | 2.64E-17 | 6.39E-18 | 1.02E-17 | -- | 9.24E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 4.25E-14 | 1.83E-14 | 2.55E-15 | -- | 1.59E-14 | 3.87E-15 | 6.18E-15 | -- | 2.12E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.04E-13 | 4.49E-14 | 6.27E-15 | -- | 3.32E-14 | 8.05E-15 | 1.29E-14 | -- | 4.45E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 3.21E-11 | 1.38E-11 | 1.93E-12 | -- | 2.79E-12 | 6.75E-13 | 1.08E-12 | -- | 3.01E-10 |

**Incremental Lifetime Cancer Risk for a Maple Grove Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 4.10E-12 | 6.02E-13 | 4.95E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.18E-15 | 1.15E-15 | 2.05E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-15 |
| Carbon Tetrachloride | 7.88E-16 | 1.05E-14 | 1.31E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-14 |
| Dichloromethane | 1.35E-13 | 9.19E-13 | 3.95E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.06E-13 | 3.02E-13 | 3.94E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13E-13 |
| Pentachlorophenol | 9.82E-13 | 4.78E-11 | 7.56E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 4.37E-11 | 7.19E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.04E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.47E-12 | 1.06E-12 | 1.48E-13 | -- | 1.43E-12 | 3.47E-13 | 5.54E-13 | -- | 7.13E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 4.84E-18 | 2.08E-18 | 2.90E-19 | -- | 1.54E-18 | 3.73E-19 | 5.96E-19 | -- | 1.18E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 5.71E-18 | 2.45E-18 | 3.43E-19 | -- | 3.30E-18 | 8.00E-19 | 1.28E-18 | -- | 7.95E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.32E-16 | 5.69E-17 | 7.94E-18 | -- | 3.83E-17 | 9.28E-18 | 1.48E-17 | -- | 1.34E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 6.16E-14 | 2.65E-14 | 3.70E-15 | -- | 2.32E-14 | 5.61E-15 | 8.97E-15 | -- | 3.07E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.52E-13 | 6.52E-14 | 9.10E-15 | -- | 4.82E-14 | 1.17E-14 | 1.87E-14 | -- | 6.67E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.66E-11 | 2.43E-11 | 3.40E-12 | -- | 4.91E-12 | 1.19E-12 | 1.90E-12 | -- | 5.69E-10 |

**Incremental Lifetime Cancer Risk for an Oshawa Subdivision Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 5.95E-12 | 8.74E-13 | 7.43E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.72E-15 | 1.67E-15 | 3.08E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.57E-15 |
| Carbon Tetrachloride | 1.14E-15 | 1.52E-14 | 1.97E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-14 |
| Dichloromethane | 1.95E-13 | 1.33E-12 | 5.92E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 4.44E-13 | 4.39E-13 | 5.91E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-12 |
| Pentachlorophenol | 1.43E-12 | 6.94E-11 | 1.13E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 7.71E-11 | 1.27E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.51E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 1.12E-12 | 4.81E-13 | 6.71E-14 | -- | 6.46E-13 | 1.57E-13 | 2.50E-13 | -- | 4.53E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 2.19E-18 | 9.40E-19 | 1.31E-19 | -- | 6.95E-19 | 1.69E-19 | 2.69E-19 | -- | 5.31E-16 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.58E-18 | 1.11E-18 | 1.55E-19 | -- | 1.49E-18 | 3.61E-19 | 5.77E-19 | -- | 3.62E-16 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.98E-17 | 2.57E-17 | 3.59E-18 | -- | 1.73E-17 | 4.19E-18 | 6.70E-18 | -- | 6.07E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.78E-14 | 1.20E-14 | 1.67E-15 | -- | 1.05E-14 | 2.54E-15 | 4.05E-15 | -- | 1.40E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 6.85E-14 | 2.94E-14 | 4.11E-15 | -- | 2.18E-14 | 5.28E-15 | 8.43E-15 | -- | 4.77E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.03E-11 | 8.71E-12 | 1.22E-12 | -- | 1.76E-12 | 4.26E-13 | 6.80E-13 | -- | 2.18E-10 |

**Incremental Lifetime Cancer Risk for a Port Darlington Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.69E-12 | 3.95E-13 | 5.34E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 7.76E-16 | 7.53E-16 | 2.21E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-15 |
| Carbon Tetrachloride | 5.17E-16 | 6.87E-15 | 1.42E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.77E-15 |
| Dichloromethane | 8.83E-14 | 6.03E-13 | 4.25E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.52E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.01E-13 | 1.98E-13 | 4.25E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.02E-13 |
| Pentachlorophenol | 6.44E-13 | 3.14E-11 | 8.14E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 2.76E-11 | 4.54E-12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 3.82E-12 | 1.64E-12 | 2.29E-13 | -- | 2.21E-12 | 5.35E-13 | 8.54E-13 | -- | 8.62E-11 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 7.47E-18 | 3.21E-18 | 4.48E-19 | -- | 2.37E-18 | 5.76E-19 | 9.19E-19 | -- | 1.81E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 8.81E-18 | 3.79E-18 | 5.28E-19 | -- | 5.09E-18 | 1.23E-18 | 1.97E-18 | -- | 1.22E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 2.04E-16 | 8.78E-17 | 1.23E-17 | -- | 5.90E-17 | 1.43E-17 | 2.29E-17 | -- | 2.07E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 9.51E-14 | 4.09E-14 | 5.70E-15 | -- | 3.57E-14 | 8.66E-15 | 1.38E-14 | -- | 4.73E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 2.34E-13 | 1.01E-13 | 1.40E-14 | -- | 7.44E-14 | 1.80E-14 | 2.88E-14 | -- | 6.89E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 7.58E-11 | 3.26E-11 | 4.55E-12 | -- | 6.57E-12 | 1.59E-12 | 2.55E-12 | -- | 6.84E-10 |

**Incremental Lifetime Cancer Risk for a Solina Road Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 9.18E-12 | 1.35E-12 | 7.61E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 2.65E-15 | 2.57E-15 | 3.15E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.05E-15 |
| Carbon Tetrachloride | 1.77E-15 | 2.35E-14 | 2.02E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-14 |
| Dichloromethane | 3.01E-13 | 2.06E-12 | 6.06E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 6.85E-13 | 6.77E-13 | 6.06E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-12 |
| Pentachlorophenol | 2.20E-12 | 1.07E-10 | 1.16E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.03E-10 | 1.70E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.28E-10 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 6.81E-12 | 2.93E-12 | 4.09E-13 | -- | 3.94E-12 | 9.55E-13 | 1.53E-12 | -- | 1.19E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.33E-17 | 5.73E-18 | 8.00E-19 | -- | 4.24E-18 | 1.03E-18 | 1.64E-18 | -- | 3.24E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 1.57E-17 | 6.76E-18 | 9.44E-19 | -- | 9.09E-18 | 2.20E-18 | 3.52E-18 | -- | 2.17E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 3.65E-16 | 1.57E-16 | 2.19E-17 | -- | 1.05E-16 | 2.56E-17 | 4.08E-17 | -- | 3.69E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 1.70E-13 | 7.30E-14 | 1.02E-14 | -- | 6.38E-14 | 1.55E-14 | 2.47E-14 | -- | 8.42E-13 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 4.18E-13 | 1.80E-13 | 2.51E-14 | -- | 1.33E-13 | 3.22E-14 | 5.14E-14 | -- | 7.30E-11 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.40E-10 | 6.03E-11 | 8.41E-12 | -- | 1.22E-11 | 2.95E-12 | 4.71E-12 | -- | 1.23E-09 |

**Incremental Lifetime Cancer Risk for a Tooley Resident Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.64E-11 | 2.41E-12 | 7.94E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 4.73E-15 | 4.59E-15 | 3.29E-19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-14 |
| Carbon Tetrachloride | 3.15E-15 | 4.19E-14 | 2.10E-17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-14 |
| Dichloromethane | 5.39E-13 | 3.68E-12 | 6.33E-16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.59E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 1.22E-12 | 1.21E-12 | 6.32E-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-12 |
| Pentachlorophenol | 3.93E-12 | 1.91E-10 | 1.21E-10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.91E-10 | 3.14E-11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-09 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 9.19E-12 | 3.95E-12 | 5.51E-13 | -- | 5.31E-12 | 1.29E-12 | 2.06E-12 | -- | 2.68E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.80E-17 | 7.73E-18 | 1.08E-18 | -- | 5.72E-18 | 1.39E-18 | 2.21E-18 | -- | 7.88E-15 |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.12E-17 | 9.12E-18 | 1.27E-18 | -- | 1.23E-17 | 2.97E-18 | 4.75E-18 | -- | 5.27E-15 |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 4.92E-16 | 2.12E-16 | 2.95E-17 | -- | 1.42E-16 | 3.45E-17 | 5.51E-17 | -- | 8.97E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.29E-13 | 9.85E-14 | 1.37E-14 | -- | 8.61E-14 | 2.09E-14 | 3.33E-14 | -- | 2.05E-12 |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.64E-13 | 2.42E-13 | 3.38E-14 | -- | 1.79E-13 | 4.34E-14 | 6.94E-14 | -- | 1.58E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 2.06E-10 | 8.86E-11 | 1.24E-11 | -- | 1.79E-11 | 4.33E-12 | 6.92E-12 | -- | 3.24E-09 |

**Incremental Lifetime Cancer Risk for a Farmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 4.89E-11 | 5.30E-12 | 2.68E-10 | -- | -- | -- | -- | 1.32E-10 | 2.67E-10 | 2.69E-12 | 9.86E-13 | 9.10E-13 | -- | 1.02E-09 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | 1.41E-14 | 1.01E-14 | 1.11E-18 | -- | -- | -- | -- | 6.20E-11 | 8.31E-11 | 2.25E-12 | 2.90E-14 | 2.67E-14 | -- | 1.47E-10 |
| Carbon Tetrachloride | 9.41E-15 | 9.22E-14 | 7.11E-17 | -- | -- | -- | -- | 1.17E-11 | 1.57E-11 | 4.26E-13 | 5.48E-15 | 5.06E-15 | -- | 2.80E-11 |
| Dichloromethane | 1.61E-12 | 8.10E-12 | 2.14E-15 | -- | -- | -- | -- | 4.52E-11 | 6.05E-11 | 1.64E-12 | 2.11E-14 | 1.95E-14 | -- | 1.18E-10 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 3.65E-12 | 2.66E-12 | 2.14E-14 | -- | -- | -- | -- | 7.73E-11 | 1.05E-10 | 3.29E-12 | 4.99E-14 | 4.60E-14 | -- | 1.95E-10 |
| Pentachlorophenol | 1.17E-11 | 4.21E-10 | 4.09E-10 | -- | -- | -- | -- | 3.95E-11 | 8.00E-11 | 7.65E-13 | 2.24E-16 | 2.06E-16 | -- | 1.12E-09 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 6.21E-10 | 7.53E-11 | -- | -- | -- | -- | -- | 2.25E-09 | 6.18E-10 | 8.10E-11 | 1.25E-12 | 1.15E-12 | -- | 7.23E-09 |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 1.94E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.92E-13 | 1.26E-13 | -- | -- | 2.17E-13 | 5.19E-14 | 8.32E-14 | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 5.72E-19 | 2.46E-19 | -- | -- | 2.33E-19 | 5.58E-20 | 8.95E-20 | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 6.74E-19 | 2.90E-19 | -- | -- | 5.00E-19 | 1.20E-19 | 1.92E-19 | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.56E-17 | 6.72E-18 | -- | -- | 5.80E-18 | 1.39E-18 | 2.23E-18 | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 7.27E-15 | 3.13E-15 | -- | -- | 3.51E-15 | 8.40E-16 | 1.35E-15 | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.79E-14 | 7.69E-15 | -- | -- | 7.31E-15 | 1.75E-15 | 2.80E-15 | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 9.61E-01 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 9.27E-12 | 3.99E-12 | -- | -- | 1.03E-12 | 2.47E-13 | 3.96E-13 | -- | -- |

**Incremental Lifetime Cancer Risk for a Day Care Receptor Exposed to COPC from the Project - Adult**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.69E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-18 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-18 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.18E-17 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-14 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.74E-14 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-11 |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 9.53E-14 | -- | -- | -- | 5.51E-14 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 1.87E-19 | -- | -- | -- | 5.93E-20 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 2.20E-19 | -- | -- | -- | 1.27E-19 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 5.10E-18 | -- | -- | -- | 1.47E-18 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 2.37E-15 | -- | -- | -- | 8.92E-16 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 5.84E-15 | -- | -- | -- | 1.86E-15 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 1.83E-12 | -- | -- | -- | 1.58E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Sport Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.58E-18 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.27E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.70E-15 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-12 |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | 2.07E-13 | -- | -- | -- | 1.19E-13 | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | 4.05E-19 | -- | -- | -- | 1.29E-19 | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | 4.77E-19 | -- | -- | -- | 2.76E-19 | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | 1.11E-17 | -- | -- | -- | 3.20E-18 | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | 5.15E-15 | -- | -- | -- | 1.94E-15 | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | 1.27E-14 | -- | -- | -- | 4.03E-15 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | 5.22E-12 | -- | -- | -- | 4.52E-13 | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Recreation User - Camping Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-13 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.33E-19 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.53E-19 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-17 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09E-15 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-14 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.67E-12 |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Swimmer Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | -- | -- | -- | 6.39E-12 | -- | -- | -- | -- | -- | 2.69E-12 | 9.08E-12 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | -- | -- | -- | 9.92E-12 | -- | -- | -- | -- | -- | -- | 9.92E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | 1.13E-12 | -- | -- | -- | -- | -- | 1.07E-12 | 2.20E-12 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | 3.02E-11 | -- | -- | -- | -- | -- | -- | 3.02E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | 1.54E-12 | -- | -- | -- | -- | -- | -- | 1.54E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | 1.82E-10 | -- | -- | -- | -- | -- | 4.36E-14 | 1.83E-10 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | -- | -- | -- | 2.67E-09 | -- | -- | -- | -- | -- | 6.46E-11 | 2.74E-09 |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk = 1.00E-06**

| COPC | Cancer Slope Factor (mg/kg-day)-1 - inhalation | Cancer Slope Factor (mg/kg-day)-1 - oral | Cancer Slope Factor (mg/kg-day)-1 - dermal | Inhalation Absorption Factor | Oral Absorption Factor | Soil/Dust Ingestion- Summer - Outdoor ILCR | Soil/Dust Ingestion - Winter - Outdoor ILCR | Dust Ingestion - Summer - Indoor ILCR | Dust Ingestion - Winter - Indoor ILCR | Soil/Dust Dermal - Summer - Outdoor ILCR | Soil/Dust Dermal - Winter - Outdoor ILCR | Dust Dermal - Summer - Indoor ILCR | Dust Dermal - Winter - Indoor ILCR | Ingestion - Aboveground Garden Produce ILCR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | 2.12E+01 | 2.30E+00 | 2.30E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | 7.90E-03 | 7.90E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon Tetrachloride | 6.71E-02 | 1.30E-01 | 1.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichloromethane | 1.03E-04 | 7.50E-03 | 7.50E-03 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | 2.06E-03 | 8.30E-01 | 8.30E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | 1.20E-01 | 1.20E-01 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | 1.05E+00 | 1.50E+00 | 1.50E+00 | 1.00E+00 | 1.00E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Incremental Lifetime Cancer Risk for a Hunter/Angler Receptor Exposed to COPC from the Project - Composite**

**Process Upset Case - 400,000 tpy**

**Target Cancer Risk =** **1.00E-06**

| COPC | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Fish - River | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR | ILCR |
| **PAHs** | | | | | | | | | | | | | | |
| Benzo(a)pyrene TEQ | -- | -- | -- | 2.28E-11 | 1.97E-10 | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-10 |
| **VOCs** | | | | | | | | | | | | | | |
| Bromoform | -- | -- | -- | 3.44E-13 | 2.61E-12 | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-12 |
| Carbon Tetrachloride | -- | -- | -- | 6.47E-14 | 8.00E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 8.65E-13 |
| Dichloromethane | -- | -- | -- | 2.23E-13 | 6.76E-13 | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | | | | | |
| Hexachlorobenzene | -- | -- | -- | 1.34E-12 | 3.46E-10 | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-10 |
| Pentachlorophenol | -- | -- | -- | 5.84E-12 | 2.30E-08 | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-08 |
| **Inorganics** | | | | | | | | | | | | | | |
| Arsenic | -- | -- | -- | 6.00E-10 | 2.99E-08 | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-08 |

# APPENDIX I-10

Multi-Pathway Results – Total Chronic Daily Intake of Mother for Use in the Calculation of Infant Risk due to Consumption of Breast Milk

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Baseline Case**
**Resident**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 4.87E-08 | 2.37E-08 | 3.09E-09 | 2.80E-08 |
| Anthracene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 2.31E-08 | 5.60E-09 | 8.95E-09 | 4.87E-08 | 2.37E-08 | 3.09E-09 | 2.80E-08 |
| Fluorene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 5.36E-08 | 2.37E-08 | 3.09E-09 | 3.64E-08 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.12E-08 | 2.71E-09 | 4.32E-09 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.73E-13 | 4.18E-13 | 5.84E-14 | 8.43E-14 | 2.04E-14 | 3.27E-14 | 1.00E-10 | 3.16E-11 | 6.90E-12 | 7.28E-11 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.41E-09 | 1.90E-09 | 2.65E-10 | 2.55E-09 | 6.18E-10 | 9.88E-10 | 3.25E-06 | -- | -- | 2.80E-06 |
| Bromoform | 1.10E-08 | 4.74E-09 | 6.62E-10 | 3.51E-09 | 8.50E-10 | 1.36E-09 | 1.62E-05 | -- | -- | 1.40E-05 |
| Carbon Tetrachloride | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 8.12E-06 | -- | -- | 7.00E-06 |
| Chloroform | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-09 | 3.86E-10 | 6.17E-10 | 8.93E-06 | -- | -- | 8.39E-06 |
| Dichloromethane | 1.10E-07 | 4.74E-08 | 6.62E-09 | 3.19E-08 | 7.73E-09 | 1.23E-08 | 8.12E-05 | -- | -- | 7.00E-05 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 1.10E-08 | 4.74E-09 | 6.62E-10 | 6.38E-09 | 1.55E-09 | 2.47E-09 | 1.62E-05 | -- | -- | 1.40E-05 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-09 | 3.86E-10 | 6.17E-10 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| 1,2,4-Trichlorobenzene | 5.52E-08 | 2.37E-08 | 3.31E-09 | 1.28E-08 | 3.09E-09 | 4.94E-09 | 4.06E-05 | -- | -- | -- |
| 1,2-Dichlorobenzene | 1.10E-08 | 4.74E-09 | 6.62E-10 | 3.19E-09 | 7.73E-10 | 1.23E-09 | 1.62E-05 | -- | -- | 1.40E-05 |
| Hexachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 2.07E-09 | 5.02E-10 | 8.03E-10 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| Pentachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-10 | 3.86E-11 | 6.17E-11 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| Pentachlorophenol | 6.62E-10 | 2.85E-10 | 3.97E-11 | 2.10E-10 | 5.10E-11 | 8.15E-11 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | |
| Antimony | 5.52E-07 | 2.37E-07 | 3.31E-08 | 1.59E-07 | 3.86E-08 | 6.17E-08 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| Arsenic | 4.41E-06 | 1.90E-06 | 2.65E-07 | 3.83E-07 | 9.28E-08 | 1.48E-07 | 2.44E-06 | 1.19E-06 | 1.70E-07 | 1.40E-06 |
| Barium | 4.91E-05 | 2.11E-05 | 2.95E-06 | 1.42E-05 | 3.44E-06 | 5.50E-06 | 1.31E-04 | 3.77E-05 | 6.64E-05 | 1.23E-04 |
| Beryllium | 3.86E-07 | 1.66E-07 | 2.32E-08 | 3.35E-08 | 8.12E-09 | 1.30E-08 | 2.44E-05 | 1.19E-05 | 1.54E-06 | 1.40E-05 |
| Boron | 7.29E-06 | 3.14E-06 | 4.38E-07 | 2.11E-06 | 5.11E-07 | 8.16E-07 | 1.23E-03 | 3.68E-04 | 5.71E-05 | 8.39E-04 |
| Cadmium | 2.76E-07 | 1.19E-07 | 1.65E-08 | 1.12E-07 | 2.71E-08 | 4.32E-08 | 1.77E-06 | 7.48E-07 | 8.88E-07 | 7.00E-07 |
| Chromium (Total) | 1.22E-05 | 5.26E-06 | 7.34E-07 | 1.41E-06 | 3.43E-07 | 5.48E-07 | 2.44E-05 | 1.19E-05 | 1.54E-06 | 1.40E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 3.86E-06 | 1.66E-06 | 2.32E-07 | 1.12E-06 | 2.71E-07 | 4.32E-07 | 4.87E-06 | 2.37E-06 | 3.09E-07 | 2.80E-06 |
| Lead | 9.33E-06 | 4.01E-06 | 5.60E-07 | 1.62E-07 | 3.92E-08 | 6.26E-08 | 4.87E-06 | 2.37E-06 | 4.01E-07 | 2.80E-06 |
| Mercury - Inorganic | 3.86E-08 | 1.66E-08 | 2.32E-09 | 5.58E-09 | 1.35E-09 | 2.16E-09 | 2.92E-07 | 1.19E-07 | 1.54E-08 | 1.40E-07 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | 6.76E-06 | 2.91E-06 | 4.05E-07 | 6.84E-06 | 1.66E-06 | 2.65E-06 | 3.01E-05 | 1.19E-05 | 1.54E-06 | 2.38E-05 |
| Phosphorus | 4.15E-04 | 1.79E-04 | 2.49E-05 | 1.20E-04 | 2.91E-05 | 4.65E-05 | 1.76E-01 | 1.16E-01 | 8.07E-03 | 7.29E-02 |
| Selenium | 5.52E-07 | 2.37E-07 | 3.31E-08 | 3.19E-09 | 7.73E-10 | 1.23E-09 | 1.09E-05 | 6.41E-06 | 7.72E-07 | 5.60E-06 |
| Silver | 1.10E-07 | 4.74E-08 | 6.62E-09 | 7.97E-08 | 1.93E-08 | 3.09E-08 | 2.52E-06 | 1.31E-06 | 1.54E-07 | 1.40E-06 |
| Thallium | 5.52E-07 | 2.37E-07 | 3.31E-08 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 2.44E-06 | 1.19E-06 | 1.54E-07 | 1.40E-06 |
| Tin | 5.52E-06 | 2.37E-06 | 3.31E-07 | 1.59E-06 | 3.86E-07 | 6.17E-07 | 4.58E-05 | 7.36E-06 | 3.98E-06 | 5.32E-05 |
| Vanadium | 1.54E-05 | 6.61E-06 | 9.23E-07 | 4.45E-06 | 1.08E-06 | 1.72E-06 | 2.44E-05 | 1.19E-05 | 1.54E-06 | 1.40E-05 |
| Zinc | 4.36E-05 | 1.87E-05 | 2.61E-06 | 2.52E-06 | 6.11E-07 | 9.76E-07 | 1.32E-03 | 8.07E-04 | 5.91E-05 | 5.74E-04 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Baseline Case**
**Resident**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-07 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.82E-07 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-07 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.24E-06 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-10 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-06 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-05 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-05 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-05 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-04 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-05 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.19E-06 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-05 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-05 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.19E-06 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.19E-06 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.26E-06 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-05 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-04 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.24E-05 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-03 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.70E-06 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.23E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-05 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-05 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.33E-07 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.85E-05 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.74E-01 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-05 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.67E-06 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.02E-06 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-04 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.19E-05 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-03 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Baseline Case**
**Farmer**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 8.78E-08 | 5.25E-08 | 5.04E-09 | 7.91E-08 |
| Anthracene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 2.31E-08 | 5.60E-09 | 8.95E-09 | 8.78E-08 | 5.25E-08 | 5.04E-09 | 7.91E-08 |
| Fluorene | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 9.66E-08 | 5.25E-08 | 5.04E-09 | 1.03E-07 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.76E-08 | 1.19E-08 | 1.65E-09 | 1.12E-08 | 2.71E-09 | 4.32E-09 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.73E-13 | 4.18E-13 | 5.84E-14 | 8.43E-14 | 2.04E-14 | 3.27E-14 | 1.81E-10 | 7.00E-11 | 1.13E-11 | 2.06E-10 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.41E-09 | 1.90E-09 | 2.65E-10 | 2.55E-09 | 6.18E-10 | 9.88E-10 | 5.86E-06 | -- | -- | 7.91E-06 |
| Bromoform | 1.10E-08 | 4.74E-09 | 6.62E-10 | 3.51E-09 | 8.50E-10 | 1.36E-09 | 2.93E-05 | -- | -- | 3.96E-05 |
| Carbon Tetrachloride | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 1.46E-05 | -- | -- | 1.98E-05 |
| Chloroform | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-09 | 3.86E-10 | 6.17E-10 | 1.61E-05 | -- | -- | 2.37E-05 |
| Dichloromethane | 1.10E-07 | 4.74E-08 | 6.62E-09 | 3.19E-08 | 7.73E-09 | 1.23E-08 | 1.46E-04 | -- | -- | 1.98E-04 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | 1.10E-08 | 4.74E-09 | 6.62E-10 | 6.38E-09 | 1.55E-09 | 2.47E-09 | 2.93E-05 | -- | -- | 3.96E-05 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-09 | 3.86E-10 | 6.17E-10 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| 1,2,4-Trichlorobenzene | 5.52E-08 | 2.37E-08 | 3.31E-09 | 1.28E-08 | 3.09E-09 | 4.94E-09 | 7.32E-05 | -- | -- | -- |
| 1,2-Dichlorobenzene | 1.10E-08 | 4.74E-09 | 6.62E-10 | 3.19E-09 | 7.73E-10 | 1.23E-09 | 2.93E-05 | -- | -- | 3.96E-05 |
| Hexachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 2.07E-09 | 5.02E-10 | 8.03E-10 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| Pentachlorobenzene | 5.52E-09 | 2.37E-09 | 3.31E-10 | 1.59E-10 | 3.86E-11 | 6.17E-11 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| Pentachlorophenol | 6.62E-10 | 2.85E-10 | 3.97E-11 | 2.10E-10 | 5.10E-11 | 8.15E-11 | -- | -- | -- | -- |
| **Inorganics** | | | | | | | | | | |
| Antimony | 5.52E-07 | 2.37E-07 | 3.31E-08 | 1.59E-07 | 3.86E-08 | 6.17E-08 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| Arsenic | 4.41E-06 | 1.90E-06 | 2.65E-07 | 3.83E-07 | 9.28E-08 | 1.48E-07 | 4.39E-06 | 2.63E-06 | 2.77E-07 | 3.96E-06 |
| Barium | 4.91E-05 | 2.11E-05 | 2.95E-06 | 1.42E-05 | 3.44E-06 | 5.50E-06 | 2.37E-04 | 8.35E-05 | 1.08E-04 | 3.49E-04 |
| Beryllium | 3.86E-07 | 1.66E-07 | 2.32E-08 | 3.35E-08 | 8.12E-09 | 1.30E-08 | 4.39E-05 | 2.63E-05 | 2.52E-06 | 3.96E-05 |
| Boron | 7.29E-06 | 3.14E-06 | 4.38E-07 | 2.11E-06 | 5.11E-07 | 8.16E-07 | 2.21E-03 | 8.14E-04 | 9.32E-05 | 2.37E-03 |
| Cadmium | 2.76E-07 | 1.19E-07 | 1.65E-08 | 1.12E-07 | 2.71E-08 | 4.32E-08 | 3.19E-06 | 1.65E-06 | 1.45E-06 | 1.98E-06 |
| Chromium (Total) | 1.22E-05 | 5.26E-06 | 7.34E-07 | 1.41E-06 | 3.43E-07 | 5.48E-07 | 4.39E-05 | 2.63E-05 | 2.52E-06 | 3.96E-05 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | 3.86E-06 | 1.66E-06 | 2.32E-07 | 1.12E-06 | 2.71E-07 | 4.32E-07 | 8.78E-06 | 5.25E-06 | 5.04E-07 | 7.91E-06 |
| Lead | 9.33E-06 | 4.01E-06 | 5.60E-07 | 1.62E-07 | 3.92E-08 | 6.26E-08 | 8.78E-06 | 5.25E-06 | 6.55E-07 | 7.91E-06 |
| Mercury - Inorganic | 3.86E-08 | 1.66E-08 | 2.32E-09 | 5.58E-09 | 1.35E-09 | 2.16E-09 | 5.27E-07 | 2.63E-07 | 2.52E-08 | 3.96E-07 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | 6.76E-06 | 2.91E-06 | 4.05E-07 | 6.84E-06 | 1.66E-06 | 2.65E-06 | 5.42E-05 | 2.63E-05 | 2.52E-06 | 6.73E-05 |
| Phosphorus | 4.15E-04 | 1.79E-04 | 2.49E-05 | 1.20E-04 | 2.91E-05 | 4.65E-05 | 3.18E-01 | 2.56E-01 | 1.32E-02 | 2.06E-01 |
| Selenium | 5.52E-07 | 2.37E-07 | 3.31E-08 | 3.19E-09 | 7.73E-10 | 1.23E-09 | 1.96E-05 | 1.42E-05 | 1.26E-06 | 1.58E-05 |
| Silver | 1.10E-07 | 4.74E-08 | 6.62E-09 | 7.97E-08 | 1.93E-08 | 3.09E-08 | 4.54E-06 | 2.89E-06 | 2.52E-07 | 3.96E-06 |
| Thallium | 5.52E-07 | 2.37E-07 | 3.31E-08 | 1.59E-08 | 3.86E-09 | 6.17E-09 | 4.39E-06 | 2.63E-06 | 2.52E-07 | 3.96E-06 |
| Tin | 5.52E-06 | 2.37E-06 | 3.31E-07 | 1.59E-06 | 3.86E-07 | 6.17E-07 | 8.26E-05 | 1.63E-05 | 6.50E-06 | 1.50E-04 |
| Vanadium | 1.54E-05 | 6.61E-06 | 9.23E-07 | 4.45E-06 | 1.08E-06 | 1.72E-06 | 4.39E-05 | 2.63E-05 | 2.52E-06 | 3.96E-05 |
| Zinc | 4.36E-05 | 1.87E-05 | 2.61E-06 | 2.52E-06 | 6.11E-07 | 9.76E-07 | 2.39E-03 | 1.79E-03 | 9.65E-05 | 1.62E-03 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Baseline Case**
**Farmer**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | 1.14E-07 | 7.23E-07 | 3.88E-08 | 1.95E-08 | 3.15E-08 | -- | 1.22E-06 |
| Anthracene | -- | -- | -- | 1.14E-07 | 7.23E-07 | 3.88E-08 | 1.95E-08 | 3.15E-08 | -- | 1.23E-06 |
| Fluorene | -- | -- | -- | 1.14E-07 | 7.23E-07 | 6.47E-08 | 1.95E-08 | 3.15E-08 | -- | 1.28E-06 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.70E-05 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | 7.02E-11 | 5.03E-10 | 1.56E-11 | 2.62E-11 | 4.47E-11 | -- | 1.13E-09 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | 1.14E-05 | 7.23E-04 | 3.88E-05 | 5.85E-05 | 3.15E-05 | -- | 8.77E-04 |
| Bromoform | -- | -- | -- | 5.68E-05 | 3.62E-03 | 2.59E-04 | 3.90E-04 | 1.57E-04 | -- | 4.55E-03 |
| Carbon Tetrachloride | -- | -- | -- | 2.84E-05 | 1.81E-03 | 1.29E-04 | 1.95E-04 | 7.87E-05 | -- | 2.27E-03 |
| Chloroform | -- | -- | -- | 2.84E-05 | 1.81E-03 | 1.29E-04 | 1.95E-04 | 7.87E-05 | -- | 2.28E-03 |
| Dichloromethane | -- | -- | -- | 2.84E-04 | 1.81E-02 | 1.29E-03 | 1.95E-03 | 7.87E-04 | -- | 2.27E-02 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | 5.68E-05 | 3.62E-03 | 2.59E-04 | 3.90E-04 | 1.57E-04 | -- | 4.55E-03 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.69E-05 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | 2.84E-04 | 1.81E-02 | 1.29E-03 | 1.95E-03 | 7.87E-04 | -- | 2.25E-02 |
| 1,2-Dichlorobenzene | -- | -- | -- | 5.68E-05 | 3.62E-03 | 2.59E-04 | 3.90E-04 | 1.57E-04 | -- | 4.55E-03 |
| Hexachlorobenzene | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.69E-05 |
| Pentachlorobenzene | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.69E-05 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.80E-05 |
| Arsenic | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 1.07E-06 | 1.57E-06 | -- | 6.42E-05 |
| Barium | -- | -- | -- | 3.69E-05 | 1.81E-04 | 7.89E-06 | 3.92E-05 | 6.27E-05 | -- | 1.20E-03 |
| Beryllium | -- | -- | -- | 5.68E-05 | 3.62E-04 | 1.29E-05 | 9.75E-06 | 1.57E-05 | -- | 5.70E-04 |
| Boron | -- | -- | -- | 3.41E-03 | 7.23E-03 | 7.76E-04 | 1.95E-04 | 6.30E-04 | -- | 1.77E-02 |
| Cadmium | -- | -- | -- | 2.84E-06 | 1.81E-05 | 6.47E-07 | 4.88E-07 | 7.87E-07 | -- | 3.17E-05 |
| Chromium (Total) | -- | -- | -- | 5.68E-05 | 3.62E-04 | 1.29E-05 | 2.48E-04 | 1.57E-05 | -- | 8.28E-04 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | 1.14E-05 | 7.23E-05 | 6.60E-06 | 1.95E-06 | 3.15E-06 | -- | 1.25E-04 |
| Lead | -- | -- | -- | 1.14E-05 | 7.23E-05 | 2.59E-06 | 1.95E-06 | 3.15E-06 | -- | 1.28E-04 |
| Mercury - Inorganic | -- | -- | -- | 5.68E-07 | 3.62E-06 | 1.29E-07 | 9.75E-08 | 1.57E-07 | -- | 5.85E-06 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | 5.68E-05 | 3.62E-04 | 1.29E-05 | 1.17E-05 | 1.57E-05 | -- | 6.30E-04 |
| Phosphorus | -- | -- | -- | 6.59E-01 | 2.94E+00 | 1.69E-01 | 4.07E-01 | 2.74E-01 | -- | 5.25E+00 |
| Selenium | -- | -- | -- | 1.14E-04 | 1.45E-04 | 2.59E-05 | 2.73E-05 | 3.31E-05 | -- | 3.96E-04 |
| Silver | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.76E-05 |
| Thallium | -- | -- | -- | 5.68E-06 | 3.62E-05 | 1.29E-06 | 9.75E-07 | 1.57E-06 | -- | 5.78E-05 |
| Tin | -- | -- | -- | 2.84E-05 | 1.81E-04 | 6.47E-06 | 4.88E-06 | 7.87E-06 | -- | 4.95E-04 |
| Vanadium | -- | -- | -- | 5.68E-05 | 3.62E-04 | 1.29E-05 | 9.75E-06 | 1.57E-05 | -- | 5.99E-04 |
| Zinc | -- | -- | -- | 1.15E-02 | 1.26E-02 | 1.73E-03 | 1.49E-03 | 1.98E-03 | -- | 3.53E-02 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Bowmanville Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.85E-14 | 1.66E-14 | 2.31E-15 | 2.23E-14 | 5.40E-15 | 8.62E-15 | 1.23E-12 | 1.79E-12 | 2.29E-13 | 2.12E-12 |
| Anthracene | 3.80E-14 | 1.63E-14 | 2.28E-15 | 3.18E-14 | 7.72E-15 | 1.23E-14 | 5.45E-13 | 7.94E-13 | 1.60E-15 | 1.88E-16 |
| Fluorene | 3.83E-14 | 1.65E-14 | 2.30E-15 | 2.21E-14 | 5.37E-15 | 8.57E-15 | 8.18E-13 | 1.19E-12 | 2.03E-15 | 7.07E-16 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.19E-12 | 3.09E-12 | 4.32E-13 | 2.91E-12 | 7.06E-13 | 1.13E-12 | 7.24E-12 | 1.05E-11 | 1.93E-12 | 1.04E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 8.05E-15 | 3.46E-15 | 4.83E-16 | 6.98E-16 | 1.69E-16 | 2.70E-16 | 1.15E-14 | 7.88E-15 | 2.32E-15 | 2.27E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.20E-17 | 9.47E-18 | 1.32E-18 | 1.27E-17 | 3.09E-18 | 4.93E-18 | 4.62E-15 | 6.58E-15 | 5.46E-14 | 1.87E-16 |
| Bromoform | 8.35E-17 | 3.59E-17 | 5.01E-18 | 2.66E-17 | 6.44E-18 | 1.03E-17 | 2.03E-14 | 2.96E-14 | 2.88E-14 | 1.72E-17 |
| Carbon Tetrachloride | 5.99E-18 | 2.57E-18 | 3.59E-19 | 1.73E-17 | 4.19E-18 | 6.70E-18 | 8.61E-16 | 1.20E-15 | 1.59E-14 | 6.69E-17 |
| Chloroform | 9.86E-18 | 4.24E-18 | 5.91E-19 | 2.85E-18 | 6.91E-19 | 1.10E-18 | 3.97E-15 | 5.72E-15 | 2.78E-14 | 9.04E-17 |
| Dichloromethane | 1.77E-15 | 7.60E-16 | 1.06E-16 | 5.11E-16 | 1.24E-16 | 1.98E-16 | 1.79E-12 | 2.61E-12 | 1.78E-11 | 9.42E-15 |
| O-Terphenyl | 1.22E-13 | 5.24E-14 | 7.31E-15 | 7.04E-14 | 1.71E-14 | 2.73E-14 | 4.77E-13 | 6.55E-13 | 7.66E-14 | 4.92E-14 |
| Trichlorofluoromethane (FREON 11) | 4.55E-16 | 1.96E-16 | 2.73E-17 | 2.63E-16 | 6.38E-17 | 1.02E-16 | 9.55E-14 | 1.36E-13 | 1.04E-12 | 3.96E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.73E-14 | 7.44E-15 | 1.04E-15 | 5.00E-15 | 1.21E-15 | 1.94E-15 | 1.66E-13 | 2.42E-13 | 5.08E-13 | 1.24E-16 |
| 1,2,4-Trichlorobenzene | 4.08E-16 | 1.75E-16 | 2.45E-17 | 9.43E-17 | 2.29E-17 | 3.65E-17 | 1.14E-14 | 1.66E-14 | 8.85E-15 | 3.25E-17 |
| 1,2-Dichlorobenzene | 5.49E-15 | 2.36E-15 | 3.29E-16 | 1.59E-15 | 3.84E-16 | 6.14E-16 | 3.60E-13 | 5.09E-13 | 3.77E-12 | 2.08E-14 |
| Hexachlorobenzene | 7.43E-15 | 3.20E-15 | 4.46E-16 | 2.79E-15 | 6.77E-16 | 1.08E-15 | 3.72E-14 | 5.36E-14 | 5.29E-14 | 8.50E-16 |
| Pentachlorobenzene | 2.69E-13 | 1.16E-13 | 1.61E-14 | 7.77E-15 | 1.88E-15 | 3.01E-15 | 1.58E-12 | 2.30E-12 | 1.38E-13 | 2.96E-15 |
| Pentachlorophenol | 1.26E-13 | 5.44E-14 | 7.59E-15 | 4.02E-14 | 9.75E-15 | 1.56E-14 | 6.62E-11 | 1.19E-12 | 5.79E-11 | 1.13E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 9.75E-11 | 4.19E-11 | 5.85E-12 | 2.82E-11 | 6.83E-12 | 1.09E-11 | 1.11E-09 | 6.69E-10 | 8.19E-11 | -- |
| Arsenic | 9.67E-12 | 4.16E-12 | 5.80E-13 | 8.39E-13 | 2.03E-13 | 3.25E-13 | 1.09E-10 | 1.32E-11 | 2.17E-12 | -- |
| Barium | 6.87E-11 | 2.95E-11 | 4.12E-12 | 1.98E-11 | 4.81E-12 | 7.68E-12 | 8.30E-10 | 4.75E-10 | 2.88E-11 | -- |
| Beryllium | 6.15E-11 | 2.64E-11 | 3.69E-12 | 5.33E-12 | 1.29E-12 | 2.06E-12 | 1.03E-10 | 3.41E-11 | 2.58E-12 | -- |
| Boron | 3.79E-10 | 1.63E-10 | 2.28E-11 | 1.10E-10 | 2.66E-11 | 4.25E-11 | 1.62E-07 | 1.84E-07 | 2.12E-08 | -- |
| Cadmium | 4.05E-10 | 1.74E-10 | 2.43E-11 | 1.64E-10 | 3.97E-11 | 6.35E-11 | 9.12E-09 | 1.09E-08 | 7.25E-10 | -- |
| Chromium (Total) | 3.41E-11 | 1.46E-11 | 2.04E-12 | 3.94E-12 | 9.54E-13 | 1.52E-12 | 5.61E-10 | 3.57E-11 | 4.29E-12 | -- |
| Chromium VI | 4.84E-12 | 2.08E-12 | 2.91E-13 | 1.26E-12 | 3.05E-13 | 4.88E-13 | 7.98E-11 | 5.08E-12 | 6.10E-13 | -- |
| Cobalt | 2.06E-10 | 8.86E-11 | 1.24E-11 | 5.96E-11 | 1.44E-11 | 2.31E-11 | 1.65E-09 | 3.84E-10 | 4.04E-11 | -- |
| Lead | 9.42E-09 | 4.05E-09 | 5.65E-10 | 1.63E-10 | 3.96E-11 | 6.32E-11 | 3.08E-08 | 2.75E-08 | 2.37E-09 | -- |
| Mercury - Inorganic | 6.67E-10 | 2.87E-10 | 4.00E-11 | 9.64E-11 | 2.34E-11 | 3.73E-11 | 2.02E-09 | 2.08E-09 | 6.72E-10 | 7.46E-10 |
| Methyl Mercury | 2.46E-11 | 1.06E-11 | 1.48E-12 | 1.42E-11 | 3.45E-12 | 5.52E-12 | 2.74E-10 | 1.56E-10 | 6.83E-11 | 2.10E-10 |
| Nickel | 4.42E-09 | 1.90E-09 | 2.65E-10 | 4.47E-09 | 1.08E-09 | 1.73E-09 | 2.68E-08 | 8.85E-09 | 9.89E-10 | -- |
| Phosphorus | 1.32E-10 | 5.69E-11 | 7.94E-12 | 3.83E-11 | 9.28E-12 | 1.48E-11 | 7.92E-08 | 9.97E-08 | 1.30E-08 | -- |
| Selenium | 1.95E-12 | 8.38E-13 | 1.17E-13 | 1.13E-14 | 2.73E-15 | 4.36E-15 | 1.20E-10 | 8.18E-12 | 1.20E-12 | -- |
| Silver | 2.24E-11 | 9.62E-12 | 1.34E-12 | 1.62E-11 | 3.92E-12 | 6.26E-12 | 1.25E-09 | 6.64E-10 | 6.26E-11 | -- |
| Thallium | 2.15E-09 | 9.23E-10 | 1.29E-10 | 6.20E-11 | 1.50E-11 | 2.40E-11 | 9.58E-09 | 3.96E-10 | 2.40E-11 | -- |
| Tin | 2.33E-09 | 1.00E-09 | 1.40E-10 | 6.72E-10 | 1.63E-10 | 2.60E-10 | 7.30E-09 | 4.53E-09 | 3.91E-10 | -- |
| Vanadium | 2.22E-10 | 9.55E-11 | 1.33E-11 | 6.42E-11 | 1.56E-11 | 2.49E-11 | 3.86E-10 | 1.59E-10 | 1.87E-11 | -- |
| Zinc | 9.68E-09 | 4.16E-09 | 5.81E-10 | 5.60E-10 | 1.36E-10 | 2.17E-10 | 1.86E-07 | 2.02E-07 | 2.44E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Bowmanville Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.46E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.52E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.71E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.61E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.89E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.50E-13 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.44E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.40E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.59E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.48E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.50E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.67E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.69E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.05E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.99E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.47E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Courtice Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.89E-14 | 1.24E-14 | 1.73E-15 | 1.67E-14 | 4.05E-15 | 6.47E-15 | 9.22E-13 | 1.34E-12 | 1.72E-13 | 1.59E-12 |
| Anthracene | 2.85E-14 | 1.22E-14 | 1.71E-15 | 2.39E-14 | 5.79E-15 | 9.25E-15 | 4.08E-13 | 5.95E-13 | 1.20E-15 | 1.22E-16 |
| Fluorene | 2.87E-14 | 1.23E-14 | 1.72E-15 | 1.66E-14 | 4.02E-15 | 6.43E-15 | 6.13E-13 | 8.96E-13 | 1.52E-15 | 4.57E-16 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 5.38E-12 | 2.31E-12 | 3.23E-13 | 2.18E-12 | 5.27E-13 | 8.42E-13 | 5.41E-12 | 7.84E-12 | 1.44E-12 | 6.70E-14 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.81E-15 | 2.50E-15 | 3.48E-16 | 5.03E-16 | 1.22E-16 | 1.95E-16 | 8.09E-15 | 5.68E-15 | 1.67E-15 | 1.47E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.65E-17 | 7.10E-18 | 9.91E-19 | 9.54E-18 | 2.31E-18 | 3.70E-18 | 3.45E-15 | 4.94E-15 | 4.10E-14 | 1.21E-16 |
| Bromoform | 6.27E-17 | 2.69E-17 | 3.76E-18 | 1.99E-17 | 4.83E-18 | 7.71E-18 | 1.52E-14 | 2.22E-14 | 2.16E-14 | 1.11E-17 |
| Carbon Tetrachloride | 4.49E-18 | 1.93E-18 | 2.69E-19 | 1.30E-17 | 3.15E-18 | 5.03E-18 | 6.41E-16 | 9.00E-16 | 1.20E-14 | 4.33E-17 |
| Chloroform | 7.39E-18 | 3.18E-18 | 4.44E-19 | 2.14E-18 | 5.18E-19 | 8.27E-19 | 2.97E-15 | 4.29E-15 | 2.08E-14 | 5.85E-17 |
| Dichloromethane | 1.33E-15 | 5.70E-16 | 7.95E-17 | 3.83E-16 | 9.29E-17 | 1.48E-16 | 1.34E-12 | 1.96E-12 | 1.34E-11 | 6.09E-15 |
| O-Terphenyl | 9.14E-14 | 3.93E-14 | 5.48E-15 | 5.28E-14 | 1.28E-14 | 2.05E-14 | 3.55E-13 | 4.91E-13 | 5.75E-14 | 3.18E-14 |
| Trichlorofluoromethane (FREON 11) | 3.42E-16 | 1.47E-16 | 2.05E-17 | 1.97E-16 | 4.79E-17 | 7.65E-17 | 7.14E-14 | 1.02E-13 | 7.77E-13 | 2.56E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.30E-14 | 5.58E-15 | 7.79E-16 | 3.75E-15 | 9.09E-16 | 1.45E-15 | 1.24E-13 | 1.82E-13 | 3.81E-13 | 8.04E-17 |
| 1,2,4-Trichlorobenzene | 3.06E-16 | 1.32E-16 | 1.84E-17 | 7.08E-17 | 1.72E-17 | 2.74E-17 | 8.53E-15 | 1.24E-14 | 6.64E-15 | 2.10E-17 |
| 1,2-Dichlorobenzene | 4.12E-15 | 1.77E-15 | 2.47E-16 | 1.19E-15 | 2.88E-16 | 4.61E-16 | 2.69E-13 | 3.82E-13 | 2.83E-12 | 1.34E-14 |
| Hexachlorobenzene | 5.58E-15 | 2.40E-15 | 3.34E-16 | 2.09E-15 | 5.08E-16 | 8.11E-16 | 2.78E-14 | 4.02E-14 | 3.97E-14 | 5.50E-16 |
| Pentachlorobenzene | 2.02E-13 | 8.67E-14 | 1.21E-14 | 5.83E-15 | 1.41E-15 | 2.26E-15 | 1.18E-12 | 1.73E-12 | 1.04E-13 | 1.92E-15 |
| Pentachlorophenol | 9.49E-14 | 4.08E-14 | 5.69E-15 | 3.02E-14 | 7.31E-15 | 1.17E-14 | 4.29E-11 | 8.92E-13 | 4.34E-11 | 7.29E-11 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 7.05E-11 | 3.03E-11 | 4.23E-12 | 2.04E-11 | 4.94E-12 | 7.89E-12 | 7.86E-10 | 4.84E-10 | 5.92E-11 | -- |
| Arsenic | 7.00E-12 | 3.01E-12 | 4.20E-13 | 6.07E-13 | 1.47E-13 | 2.35E-13 | 7.63E-11 | 9.53E-12 | 1.57E-12 | -- |
| Barium | 4.97E-11 | 2.13E-11 | 2.98E-12 | 1.44E-11 | 3.48E-12 | 5.56E-12 | 5.87E-10 | 3.44E-10 | 2.08E-11 | -- |
| Beryllium | 4.44E-11 | 1.91E-11 | 2.66E-12 | 3.85E-12 | 9.34E-13 | 1.49E-12 | 7.22E-11 | 2.46E-11 | 1.86E-12 | -- |
| Boron | 2.75E-10 | 1.18E-10 | 1.65E-11 | 7.93E-11 | 1.92E-11 | 3.07E-11 | 1.17E-07 | 1.33E-07 | 1.54E-08 | -- |
| Cadmium | 2.93E-10 | 1.26E-10 | 1.76E-11 | 1.18E-10 | 2.87E-11 | 4.59E-11 | 6.55E-09 | 7.87E-09 | 5.25E-10 | -- |
| Chromium (Total) | 2.46E-11 | 1.06E-11 | 1.48E-12 | 2.85E-12 | 6.90E-13 | 1.10E-12 | 3.91E-10 | 2.59E-11 | 3.10E-12 | -- |
| Chromium VI | 3.50E-12 | 1.51E-12 | 2.10E-13 | 9.11E-13 | 2.21E-13 | 3.53E-13 | 5.57E-11 | 3.68E-12 | 4.41E-13 | -- |
| Cobalt | 1.49E-10 | 6.41E-11 | 8.95E-12 | 4.31E-11 | 1.04E-11 | 1.67E-11 | 1.15E-09 | 2.78E-10 | 2.92E-11 | -- |
| Lead | 6.80E-09 | 2.93E-09 | 4.08E-10 | 1.18E-10 | 2.86E-11 | 4.57E-11 | 2.19E-08 | 1.99E-08 | 1.71E-09 | -- |
| Mercury - Inorganic | 4.39E-10 | 1.89E-10 | 2.63E-11 | 6.34E-11 | 1.54E-11 | 2.46E-11 | 1.33E-09 | 1.37E-09 | 4.42E-10 | 4.83E-10 |
| Methyl Mercury | 1.78E-11 | 7.66E-12 | 1.07E-12 | 1.03E-11 | 2.50E-12 | 3.99E-12 | 1.88E-10 | 1.13E-10 | 4.93E-11 | 1.36E-10 |
| Nickel | 3.19E-09 | 1.37E-09 | 1.92E-10 | 3.23E-09 | 7.83E-10 | 1.25E-09 | 1.88E-08 | 6.40E-09 | 7.15E-10 | -- |
| Phosphorus | 9.58E-11 | 4.12E-11 | 5.75E-12 | 2.77E-11 | 6.71E-12 | 1.07E-11 | 5.70E-08 | 7.21E-08 | 9.38E-09 | -- |
| Selenium | 1.41E-12 | 6.07E-13 | 8.47E-14 | 8.16E-15 | 1.98E-15 | 3.16E-15 | 8.38E-11 | 5.92E-12 | 8.69E-13 | -- |
| Silver | 1.62E-11 | 6.96E-12 | 9.71E-13 | 1.17E-11 | 2.83E-12 | 4.53E-12 | 8.85E-10 | 4.80E-10 | 4.53E-11 | -- |
| Thallium | 1.55E-09 | 6.67E-10 | 9.31E-11 | 4.49E-11 | 1.09E-11 | 1.74E-11 | 6.67E-09 | 2.86E-10 | 1.74E-11 | -- |
| Tin | 1.68E-09 | 7.23E-10 | 1.01E-10 | 4.86E-10 | 1.18E-10 | 1.88E-10 | 5.16E-09 | 3.27E-09 | 2.82E-10 | -- |
| Vanadium | 1.61E-10 | 6.90E-11 | 9.63E-12 | 4.64E-11 | 1.13E-11 | 1.80E-11 | 2.72E-10 | 1.15E-10 | 1.35E-11 | -- |
| Zinc | 7.00E-09 | 3.01E-09 | 4.20E-10 | 4.05E-10 | 9.81E-11 | 1.57E-10 | 1.33E-07 | 1.46E-07 | 1.76E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Courtice Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.09E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.64E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.95E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.92E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13E-13 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.50E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.88E-11 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.71E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.56E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.62E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.38E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.29E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.27E-11 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.36E-09 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.15E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Courtice Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.24E-13 | 5.31E-14 | 7.42E-15 | 7.14E-14 | 1.73E-14 | 2.77E-14 | 3.94E-12 | 5.74E-12 | 7.36E-13 | 6.79E-12 |
| Anthracene | 1.22E-13 | 5.24E-14 | 7.32E-15 | 1.02E-13 | 2.48E-14 | 3.96E-14 | 1.75E-12 | 2.55E-12 | 5.14E-15 | 3.53E-16 |
| Fluorene | 1.23E-13 | 5.28E-14 | 7.37E-15 | 7.10E-14 | 1.72E-14 | 2.75E-14 | 2.62E-12 | 3.83E-12 | 6.52E-15 | 1.33E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.31E-11 | 9.91E-12 | 1.38E-12 | 9.33E-12 | 2.26E-12 | 3.61E-12 | 2.31E-11 | 3.36E-11 | 6.18E-12 | 1.95E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.77E-14 | 7.62E-15 | 1.06E-15 | 1.54E-15 | 3.73E-16 | 5.95E-16 | 2.30E-14 | 1.73E-14 | 5.10E-15 | 4.26E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 7.07E-17 | 3.04E-17 | 4.24E-18 | 4.08E-17 | 9.90E-18 | 1.58E-17 | 1.47E-14 | 2.11E-14 | 1.75E-13 | 3.52E-16 |
| Bromoform | 2.68E-16 | 1.15E-16 | 1.61E-17 | 8.52E-17 | 2.07E-17 | 3.30E-17 | 6.52E-14 | 9.51E-14 | 9.23E-14 | 3.23E-17 |
| Carbon Tetrachloride | 1.92E-17 | 8.26E-18 | 1.15E-18 | 5.55E-17 | 1.35E-17 | 2.15E-17 | 2.71E-15 | 3.85E-15 | 5.12E-14 | 1.26E-16 |
| Chloroform | 3.16E-17 | 1.36E-17 | 1.90E-18 | 9.14E-18 | 2.22E-18 | 3.54E-18 | 1.27E-14 | 1.84E-14 | 8.91E-14 | 1.70E-16 |
| Dichloromethane | 5.67E-15 | 2.44E-15 | 3.40E-16 | 1.64E-15 | 3.97E-16 | 6.35E-16 | 5.74E-12 | 8.37E-12 | 5.72E-11 | 1.77E-14 |
| O-Terphenyl | 3.91E-13 | 1.68E-13 | 2.35E-14 | 2.26E-13 | 5.48E-14 | 8.75E-14 | 1.49E-12 | 2.10E-12 | 2.46E-13 | 9.24E-14 |
| Trichlorofluoromethane (FREON 11) | 1.46E-15 | 6.28E-16 | 8.77E-17 | 8.45E-16 | 2.05E-16 | 3.27E-16 | 3.03E-13 | 4.37E-13 | 3.32E-12 | 7.45E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 5.55E-14 | 2.39E-14 | 3.33E-15 | 1.61E-14 | 3.89E-15 | 6.22E-15 | 5.33E-13 | 7.78E-13 | 1.63E-12 | 2.34E-16 |
| 1,2,4-Trichlorobenzene | 1.31E-15 | 5.63E-16 | 7.86E-17 | 3.03E-16 | 7.34E-17 | 1.17E-16 | 3.65E-14 | 5.32E-14 | 2.84E-14 | 6.11E-17 |
| 1,2-Dichlorobenzene | 1.76E-14 | 7.57E-15 | 1.06E-15 | 5.09E-15 | 1.23E-15 | 1.97E-15 | 1.14E-12 | 1.63E-12 | 1.21E-11 | 3.91E-14 |
| Hexachlorobenzene | 2.39E-14 | 1.03E-14 | 1.43E-15 | 8.96E-15 | 2.17E-15 | 3.47E-15 | 1.19E-13 | 1.72E-13 | 1.70E-13 | 1.60E-15 |
| Pentachlorobenzene | 8.63E-13 | 3.71E-13 | 5.18E-14 | 2.49E-14 | 6.05E-15 | 9.66E-15 | 5.06E-12 | 7.39E-12 | 4.44E-13 | 5.56E-15 |
| Pentachlorophenol | 4.06E-13 | 1.75E-13 | 2.44E-14 | 1.29E-13 | 3.13E-14 | 5.00E-14 | 1.25E-10 | 3.82E-12 | 1.86E-10 | 2.12E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.15E-10 | 9.24E-11 | 1.29E-11 | 6.21E-11 | 1.51E-11 | 2.41E-11 | 2.18E-09 | 1.47E-09 | 1.80E-10 | -- |
| Arsenic | 2.13E-11 | 9.17E-12 | 1.28E-12 | 1.85E-12 | 4.48E-13 | 7.16E-13 | 2.00E-10 | 2.90E-11 | 4.77E-12 | -- |
| Barium | 1.51E-10 | 6.50E-11 | 9.08E-12 | 4.37E-11 | 1.06E-11 | 1.69E-11 | 1.62E-09 | 1.05E-09 | 6.35E-11 | -- |
| Beryllium | 1.35E-10 | 5.82E-11 | 8.12E-12 | 1.17E-11 | 2.85E-12 | 4.55E-12 | 1.94E-10 | 7.51E-11 | 5.69E-12 | -- |
| Boron | 8.36E-10 | 3.60E-10 | 5.02E-11 | 2.42E-10 | 5.86E-11 | 9.36E-11 | 3.43E-07 | 4.06E-07 | 4.68E-08 | -- |
| Cadmium | 8.92E-10 | 3.84E-10 | 5.35E-11 | 3.61E-10 | 8.75E-11 | 1.40E-10 | 1.94E-08 | 2.40E-08 | 1.60E-09 | -- |
| Chromium (Total) | 7.51E-11 | 3.23E-11 | 4.50E-12 | 8.68E-12 | 2.10E-12 | 3.36E-12 | 1.02E-09 | 7.88E-11 | 9.45E-12 | -- |
| Chromium VI | 1.07E-11 | 4.59E-12 | 6.40E-13 | 2.78E-12 | 6.73E-13 | 1.08E-12 | 1.45E-10 | 1.12E-11 | 1.34E-12 | -- |
| Cobalt | 4.54E-10 | 1.95E-10 | 2.73E-11 | 1.31E-10 | 3.18E-11 | 5.09E-11 | 3.06E-09 | 8.46E-10 | 8.90E-11 | -- |
| Lead | 2.07E-08 | 8.92E-09 | 1.24E-09 | 3.60E-10 | 8.72E-11 | 1.39E-10 | 6.29E-08 | 6.07E-08 | 5.22E-09 | -- |
| Mercury - Inorganic | 1.62E-09 | 6.96E-10 | 9.71E-11 | 2.34E-10 | 5.67E-11 | 9.06E-11 | 4.56E-09 | 5.05E-09 | 1.63E-09 | 1.40E-09 |
| Methyl Mercury | 5.43E-11 | 2.33E-11 | 3.26E-12 | 3.14E-11 | 7.61E-12 | 1.22E-11 | 5.46E-10 | 3.43E-10 | 1.50E-10 | 3.95E-10 |
| Nickel | 9.74E-09 | 4.19E-09 | 5.84E-10 | 9.85E-09 | 2.39E-09 | 3.81E-09 | 5.06E-08 | 1.95E-08 | 2.18E-09 | -- |
| Phosphorus | 2.92E-10 | 1.25E-10 | 1.75E-11 | 8.43E-11 | 2.04E-11 | 3.27E-11 | 1.70E-07 | 2.20E-07 | 2.86E-08 | -- |
| Selenium | 4.30E-12 | 1.85E-12 | 2.58E-13 | 2.48E-14 | 6.02E-15 | 9.62E-15 | 2.18E-10 | 1.80E-11 | 2.65E-12 | -- |
| Silver | 4.93E-11 | 2.12E-11 | 2.96E-12 | 3.56E-11 | 8.63E-12 | 1.38E-11 | 2.44E-09 | 1.46E-09 | 1.38E-10 | -- |
| Thallium | 4.73E-09 | 2.03E-09 | 2.84E-10 | 1.37E-10 | 3.31E-11 | 5.29E-11 | 1.73E-08 | 8.73E-10 | 5.30E-11 | -- |
| Tin | 5.13E-09 | 2.20E-09 | 3.08E-10 | 1.48E-09 | 3.59E-10 | 5.74E-10 | 1.44E-08 | 9.98E-09 | 8.61E-10 | -- |
| Vanadium | 4.90E-10 | 2.10E-10 | 2.94E-11 | 1.41E-10 | 3.43E-11 | 5.48E-11 | 7.37E-10 | 3.49E-10 | 4.11E-11 | -- |
| Zinc | 2.13E-08 | 9.17E-09 | 1.28E-09 | 1.23E-09 | 2.99E-10 | 4.78E-10 | 3.90E-07 | 4.45E-07 | 5.37E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Courtice Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.65E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.76E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.86E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.80E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.28E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.26E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.96E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.97E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.69E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.45E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.17E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.53E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Maple Grove**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.45E-14 | 1.48E-14 | 2.07E-15 | 1.99E-14 | 4.83E-15 | 7.72E-15 | 1.10E-12 | 1.60E-12 | 2.05E-13 | 1.90E-12 |
| Anthracene | 3.40E-14 | 1.46E-14 | 2.04E-15 | 2.85E-14 | 6.91E-15 | 1.10E-14 | 4.88E-13 | 7.11E-13 | 1.43E-15 | 1.61E-16 |
| Fluorene | 3.43E-14 | 1.47E-14 | 2.06E-15 | 1.98E-14 | 4.81E-15 | 7.68E-15 | 7.33E-13 | 1.07E-12 | 1.82E-15 | 6.05E-16 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 6.43E-12 | 2.77E-12 | 3.86E-13 | 2.60E-12 | 6.31E-13 | 1.01E-12 | 6.47E-12 | 9.38E-12 | 1.72E-12 | 8.86E-14 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.32E-15 | 1.86E-15 | 2.59E-16 | 3.75E-16 | 9.08E-17 | 1.45E-16 | 6.14E-15 | 4.23E-15 | 1.24E-15 | 1.94E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.97E-17 | 8.48E-18 | 1.18E-18 | 1.14E-17 | 2.76E-18 | 4.41E-18 | 4.13E-15 | 5.90E-15 | 4.89E-14 | 1.60E-16 |
| Bromoform | 7.48E-17 | 3.22E-17 | 4.49E-18 | 2.38E-17 | 5.77E-18 | 9.21E-18 | 1.82E-14 | 2.66E-14 | 2.58E-14 | 1.47E-17 |
| Carbon Tetrachloride | 5.36E-18 | 2.31E-18 | 3.22E-19 | 1.55E-17 | 3.76E-18 | 6.00E-18 | 7.69E-16 | 1.08E-15 | 1.43E-14 | 5.73E-17 |
| Chloroform | 8.83E-18 | 3.80E-18 | 5.30E-19 | 2.55E-18 | 6.19E-19 | 9.88E-19 | 3.55E-15 | 5.13E-15 | 2.49E-14 | 7.73E-17 |
| Dichloromethane | 1.58E-15 | 6.81E-16 | 9.50E-17 | 4.57E-16 | 1.11E-16 | 1.77E-16 | 1.60E-12 | 2.34E-12 | 1.59E-11 | 8.06E-15 |
| O-Terphenyl | 1.09E-13 | 4.69E-14 | 6.55E-15 | 6.31E-14 | 1.53E-14 | 2.44E-14 | 4.26E-13 | 5.86E-13 | 6.86E-14 | 4.21E-14 |
| Trichlorofluoromethane (FREON 11) | 4.08E-16 | 1.75E-16 | 2.45E-17 | 2.36E-16 | 5.72E-17 | 9.13E-17 | 8.55E-14 | 1.22E-13 | 9.28E-13 | 3.39E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.55E-14 | 6.66E-15 | 9.30E-16 | 4.48E-15 | 1.09E-15 | 1.73E-15 | 1.49E-13 | 2.17E-13 | 4.55E-13 | 1.06E-16 |
| 1,2,4-Trichlorobenzene | 3.65E-16 | 1.57E-16 | 2.19E-17 | 8.45E-17 | 2.05E-17 | 3.27E-17 | 1.02E-14 | 1.49E-14 | 7.93E-15 | 2.78E-17 |
| 1,2-Dichlorobenzene | 4.92E-15 | 2.11E-15 | 2.95E-16 | 1.42E-15 | 3.44E-16 | 5.50E-16 | 3.22E-13 | 4.56E-13 | 3.38E-12 | 1.78E-14 |
| Hexachlorobenzene | 6.66E-15 | 2.86E-15 | 3.99E-16 | 2.50E-15 | 6.06E-16 | 9.69E-16 | 3.33E-14 | 4.80E-14 | 4.74E-14 | 7.27E-16 |
| Pentachlorobenzene | 2.41E-13 | 1.04E-13 | 1.45E-14 | 6.96E-15 | 1.69E-15 | 2.70E-15 | 1.41E-12 | 2.06E-12 | 1.24E-13 | 2.53E-15 |
| Pentachlorophenol | 1.13E-13 | 4.87E-14 | 6.80E-15 | 3.60E-14 | 8.73E-15 | 1.39E-14 | 5.67E-11 | 1.06E-12 | 5.19E-11 | 9.64E-11 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 5.24E-11 | 2.25E-11 | 3.14E-12 | 1.51E-11 | 3.67E-12 | 5.86E-12 | 5.35E-10 | 3.60E-10 | 4.40E-11 | -- |
| Arsenic | 5.20E-12 | 2.23E-12 | 3.12E-13 | 4.51E-13 | 1.09E-13 | 1.75E-13 | 4.91E-11 | 7.08E-12 | 1.16E-12 | -- |
| Barium | 3.69E-11 | 1.59E-11 | 2.21E-12 | 1.07E-11 | 2.58E-12 | 4.13E-12 | 3.98E-10 | 2.55E-10 | 1.55E-11 | -- |
| Beryllium | 3.30E-11 | 1.42E-11 | 1.98E-12 | 2.86E-12 | 6.94E-13 | 1.11E-12 | 4.76E-11 | 1.83E-11 | 1.39E-12 | -- |
| Boron | 2.04E-10 | 8.77E-11 | 1.22E-11 | 5.89E-11 | 1.43E-11 | 2.28E-11 | 8.38E-08 | 9.89E-08 | 1.14E-08 | -- |
| Cadmium | 2.18E-10 | 9.35E-11 | 1.31E-11 | 8.80E-11 | 2.13E-11 | 3.41E-11 | 4.74E-09 | 5.85E-09 | 3.90E-10 | -- |
| Chromium (Total) | 1.83E-11 | 7.87E-12 | 1.10E-12 | 2.12E-12 | 5.13E-13 | 8.19E-13 | 2.50E-10 | 1.92E-11 | 2.30E-12 | -- |
| Chromium VI | 2.60E-12 | 1.12E-12 | 1.56E-13 | 6.77E-13 | 1.64E-13 | 2.62E-13 | 3.56E-11 | 2.73E-12 | 3.28E-13 | -- |
| Cobalt | 1.11E-10 | 4.76E-11 | 6.65E-12 | 3.20E-11 | 7.76E-12 | 1.24E-11 | 7.52E-10 | 2.06E-10 | 2.17E-11 | -- |
| Lead | 5.06E-09 | 2.17E-09 | 3.03E-10 | 8.77E-11 | 2.13E-11 | 3.40E-11 | 1.54E-08 | 1.48E-08 | 1.27E-09 | -- |
| Mercury - Inorganic | 5.06E-10 | 2.18E-10 | 3.04E-11 | 7.32E-11 | 1.77E-11 | 2.83E-11 | 1.52E-09 | 1.58E-09 | 5.10E-10 | 6.39E-10 |
| Methyl Mercury | 1.32E-11 | 5.69E-12 | 7.94E-13 | 7.65E-12 | 1.85E-12 | 2.96E-12 | 1.82E-10 | 8.37E-11 | 3.67E-11 | 1.80E-10 |
| Nickel | 2.37E-09 | 1.02E-09 | 1.42E-10 | 2.40E-09 | 5.82E-10 | 9.30E-10 | 1.24E-08 | 4.75E-09 | 5.31E-10 | -- |
| Phosphorus | 7.12E-11 | 3.06E-11 | 4.27E-12 | 2.06E-11 | 4.99E-12 | 7.96E-12 | 4.15E-08 | 5.36E-08 | 6.97E-09 | -- |
| Selenium | 1.05E-12 | 4.51E-13 | 6.29E-14 | 6.06E-15 | 1.47E-15 | 2.35E-15 | 5.36E-11 | 4.40E-12 | 6.45E-13 | -- |
| Silver | 1.20E-11 | 5.17E-12 | 7.21E-13 | 8.68E-12 | 2.11E-12 | 3.36E-12 | 5.97E-10 | 3.57E-10 | 3.36E-11 | -- |
| Thallium | 1.15E-09 | 4.96E-10 | 6.92E-11 | 3.33E-11 | 8.08E-12 | 1.29E-11 | 4.26E-09 | 2.13E-10 | 1.29E-11 | -- |
| Tin | 1.25E-09 | 5.37E-10 | 7.50E-11 | 3.61E-10 | 8.76E-11 | 1.40E-10 | 3.52E-09 | 2.43E-09 | 2.10E-10 | -- |
| Vanadium | 1.19E-10 | 5.13E-11 | 7.16E-12 | 3.45E-11 | 8.36E-12 | 1.34E-11 | 1.81E-10 | 8.52E-11 | 1.00E-11 | -- |
| Zinc | 5.20E-09 | 2.24E-09 | 3.12E-10 | 3.01E-10 | 7.29E-11 | 1.16E-10 | 9.53E-08 | 1.09E-07 | 1.31E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Maple Grove**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.92E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.07E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.99E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.51E-13 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.18E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.58E-11 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.41E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.91E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.15E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.02E-11 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.25E-09 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.61E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Oshawa Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 5.24E-14 | 2.25E-14 | 3.14E-15 | 3.03E-14 | 7.34E-15 | 1.17E-14 | 1.67E-12 | 2.43E-12 | 3.12E-13 | 2.88E-12 |
| Anthracene | 5.17E-14 | 2.22E-14 | 3.10E-15 | 4.33E-14 | 1.05E-14 | 1.68E-14 | 7.41E-13 | 1.08E-12 | 2.18E-15 | 2.46E-16 |
| Fluorene | 5.21E-14 | 2.24E-14 | 3.13E-15 | 3.01E-14 | 7.30E-15 | 1.17E-14 | 1.11E-12 | 1.62E-12 | 2.76E-15 | 9.24E-16 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 9.75E-12 | 4.19E-12 | 5.85E-13 | 3.95E-12 | 9.57E-13 | 1.53E-12 | 9.82E-12 | 1.42E-11 | 2.61E-12 | 1.35E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 8.11E-15 | 3.48E-15 | 4.86E-16 | 7.03E-16 | 1.70E-16 | 2.72E-16 | 1.15E-14 | 7.93E-15 | 2.33E-15 | 2.96E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.00E-17 | 1.29E-17 | 1.80E-18 | 1.73E-17 | 4.20E-18 | 6.71E-18 | 6.27E-15 | 8.96E-15 | 7.43E-14 | 2.45E-16 |
| Bromoform | 1.14E-16 | 4.89E-17 | 6.82E-18 | 3.61E-17 | 8.76E-18 | 1.40E-17 | 2.76E-14 | 4.03E-14 | 3.91E-14 | 2.25E-17 |
| Carbon Tetrachloride | 8.15E-18 | 3.50E-18 | 4.89E-19 | 2.35E-17 | 5.71E-18 | 9.12E-18 | 1.17E-15 | 1.63E-15 | 2.17E-14 | 8.75E-17 |
| Chloroform | 1.34E-17 | 5.77E-18 | 8.05E-19 | 3.88E-18 | 9.40E-19 | 1.50E-18 | 5.40E-15 | 7.79E-15 | 3.78E-14 | 1.18E-16 |
| Dichloromethane | 2.41E-15 | 1.03E-15 | 1.44E-16 | 6.95E-16 | 1.69E-16 | 2.69E-16 | 2.44E-12 | 3.55E-12 | 2.42E-11 | 1.23E-14 |
| O-Terphenyl | 1.66E-13 | 7.13E-14 | 9.95E-15 | 9.58E-14 | 2.32E-14 | 3.71E-14 | 6.47E-13 | 8.91E-13 | 1.04E-13 | 6.43E-14 |
| Trichlorofluoromethane (FREON 11) | 6.20E-16 | 2.66E-16 | 3.72E-17 | 3.58E-16 | 8.68E-17 | 1.39E-16 | 1.30E-13 | 1.85E-13 | 1.41E-12 | 5.18E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.36E-14 | 1.01E-14 | 1.41E-15 | 6.81E-15 | 1.65E-15 | 2.64E-15 | 2.26E-13 | 3.30E-13 | 6.91E-13 | 1.62E-16 |
| 1,2,4-Trichlorobenzene | 5.55E-16 | 2.39E-16 | 3.33E-17 | 1.28E-16 | 3.11E-17 | 4.97E-17 | 1.55E-14 | 2.26E-14 | 1.20E-14 | 4.25E-17 |
| 1,2-Dichlorobenzene | 7.47E-15 | 3.21E-15 | 4.48E-16 | 2.16E-15 | 5.23E-16 | 8.36E-16 | 4.90E-13 | 6.92E-13 | 5.13E-12 | 2.72E-14 |
| Hexachlorobenzene | 1.01E-14 | 4.35E-15 | 6.07E-16 | 3.80E-15 | 9.21E-16 | 1.47E-15 | 5.05E-14 | 7.29E-14 | 7.20E-14 | 1.11E-15 |
| Pentachlorobenzene | 3.66E-13 | 1.57E-13 | 2.20E-14 | 1.06E-14 | 2.56E-15 | 4.10E-15 | 2.15E-12 | 3.13E-12 | 1.88E-13 | 3.87E-15 |
| Pentachlorophenol | 1.72E-13 | 7.40E-14 | 1.03E-14 | 5.47E-14 | 1.33E-14 | 2.12E-14 | 8.66E-11 | 1.62E-12 | 7.88E-11 | 1.47E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 9.85E-11 | 4.23E-11 | 5.91E-12 | 2.85E-11 | 6.90E-12 | 1.10E-11 | 1.05E-09 | 6.76E-10 | 8.27E-11 | -- |
| Arsenic | 9.77E-12 | 4.20E-12 | 5.86E-13 | 8.47E-13 | 2.05E-13 | 3.28E-13 | 9.87E-11 | 1.33E-11 | 2.19E-12 | -- |
| Barium | 6.93E-11 | 2.98E-11 | 4.16E-12 | 2.00E-11 | 4.86E-12 | 7.76E-12 | 7.80E-10 | 4.80E-10 | 2.91E-11 | -- |
| Beryllium | 6.20E-11 | 2.67E-11 | 3.72E-12 | 5.38E-12 | 1.30E-12 | 2.08E-12 | 9.46E-11 | 3.44E-11 | 2.60E-12 | -- |
| Boron | 3.83E-10 | 1.65E-10 | 2.30E-11 | 1.11E-10 | 2.69E-11 | 4.29E-11 | 1.60E-07 | 1.86E-07 | 2.15E-08 | -- |
| Cadmium | 4.09E-10 | 1.76E-10 | 2.45E-11 | 1.65E-10 | 4.01E-11 | 6.41E-11 | 9.02E-09 | 1.10E-08 | 7.32E-10 | -- |
| Chromium (Total) | 3.44E-11 | 1.48E-11 | 2.06E-12 | 3.98E-12 | 9.64E-13 | 1.54E-12 | 5.05E-10 | 3.61E-11 | 4.33E-12 | -- |
| Chromium VI | 4.89E-12 | 2.10E-12 | 2.93E-13 | 1.27E-12 | 3.08E-13 | 4.93E-13 | 7.18E-11 | 5.13E-12 | 6.16E-13 | -- |
| Cobalt | 2.08E-10 | 8.95E-11 | 1.25E-11 | 6.02E-11 | 1.46E-11 | 2.33E-11 | 1.50E-09 | 3.87E-10 | 4.08E-11 | -- |
| Lead | 9.50E-09 | 4.08E-09 | 5.70E-10 | 1.65E-10 | 3.99E-11 | 6.38E-11 | 2.97E-08 | 2.78E-08 | 2.39E-09 | -- |
| Mercury - Inorganic | 7.71E-10 | 3.32E-10 | 4.63E-11 | 1.11E-10 | 2.70E-11 | 4.32E-11 | 2.36E-09 | 2.41E-09 | 7.77E-10 | 9.75E-10 |
| Methyl Mercury | 2.49E-11 | 1.07E-11 | 1.49E-12 | 1.44E-11 | 3.48E-12 | 5.56E-12 | 3.08E-10 | 1.57E-10 | 6.89E-11 | 2.75E-10 |
| Nickel | 4.46E-09 | 1.92E-09 | 2.68E-10 | 4.51E-09 | 1.09E-09 | 1.75E-09 | 2.47E-08 | 8.93E-09 | 9.99E-10 | -- |
| Phosphorus | 1.34E-10 | 5.75E-11 | 8.02E-12 | 3.87E-11 | 9.37E-12 | 1.50E-11 | 7.88E-08 | 1.01E-07 | 1.31E-08 | -- |
| Selenium | 1.97E-12 | 8.47E-13 | 1.18E-13 | 1.14E-14 | 2.76E-15 | 4.41E-15 | 1.08E-10 | 8.26E-12 | 1.21E-12 | -- |
| Silver | 2.26E-11 | 9.71E-12 | 1.36E-12 | 1.63E-11 | 3.96E-12 | 6.32E-12 | 1.17E-09 | 6.71E-10 | 6.32E-11 | -- |
| Thallium | 2.17E-09 | 9.32E-10 | 1.30E-10 | 6.26E-11 | 1.52E-11 | 2.43E-11 | 8.59E-09 | 4.00E-10 | 2.43E-11 | -- |
| Tin | 2.35E-09 | 1.01E-09 | 1.41E-10 | 6.79E-10 | 1.65E-10 | 2.63E-10 | 6.88E-09 | 4.57E-09 | 3.94E-10 | -- |
| Vanadium | 2.24E-10 | 9.64E-11 | 1.35E-11 | 6.48E-11 | 1.57E-11 | 2.51E-11 | 3.58E-10 | 1.60E-10 | 1.88E-11 | -- |
| Zinc | 9.77E-09 | 4.20E-09 | 5.86E-10 | 5.65E-10 | 1.37E-10 | 2.19E-10 | 1.82E-07 | 2.04E-07 | 2.46E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Oshawa Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.43E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.78E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.79E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.11E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.02E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.35E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.04E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.16E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.03E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.43E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.85E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.69E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.86E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.97E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.76E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Port Darlington**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.39E-14 | 1.03E-14 | 1.43E-15 | 1.38E-14 | 3.35E-15 | 5.35E-15 | 7.64E-13 | 1.11E-12 | 1.42E-13 | 1.32E-12 |
| Anthracene | 2.36E-14 | 1.01E-14 | 1.41E-15 | 1.98E-14 | 4.79E-15 | 7.65E-15 | 3.38E-13 | 4.92E-13 | 9.94E-16 | 1.72E-16 |
| Fluorene | 2.38E-14 | 1.02E-14 | 1.43E-15 | 1.37E-14 | 3.33E-15 | 5.32E-15 | 5.08E-13 | 7.41E-13 | 1.26E-15 | 6.45E-16 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.46E-12 | 1.92E-12 | 2.68E-13 | 1.81E-12 | 4.38E-13 | 6.99E-13 | 4.51E-12 | 6.51E-12 | 1.20E-12 | 9.45E-14 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.81E-15 | 1.21E-15 | 1.68E-16 | 2.43E-16 | 5.90E-17 | 9.43E-17 | 4.69E-15 | 2.75E-15 | 8.08E-16 | 2.07E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.37E-17 | 5.87E-18 | 8.19E-19 | 7.89E-18 | 1.91E-18 | 3.06E-18 | 2.89E-15 | 4.08E-15 | 3.39E-14 | 1.71E-16 |
| Bromoform | 5.18E-17 | 2.23E-17 | 3.11E-18 | 1.65E-17 | 3.99E-18 | 6.38E-18 | 1.26E-14 | 1.84E-14 | 1.78E-14 | 1.57E-17 |
| Carbon Tetrachloride | 3.71E-18 | 1.60E-18 | 2.23E-19 | 1.07E-17 | 2.60E-18 | 4.16E-18 | 5.45E-16 | 7.45E-16 | 9.89E-15 | 6.11E-17 |
| Chloroform | 6.12E-18 | 2.63E-18 | 3.67E-19 | 1.77E-18 | 4.28E-19 | 6.84E-19 | 2.48E-15 | 3.55E-15 | 1.72E-14 | 8.24E-17 |
| Dichloromethane | 1.10E-15 | 4.71E-16 | 6.58E-17 | 3.17E-16 | 7.68E-17 | 1.23E-16 | 1.11E-12 | 1.62E-12 | 1.10E-11 | 8.59E-15 |
| O-Terphenyl | 7.56E-14 | 3.25E-14 | 4.54E-15 | 4.37E-14 | 1.06E-14 | 1.69E-14 | 3.04E-13 | 4.06E-13 | 4.75E-14 | 4.49E-14 |
| Trichlorofluoromethane (FREON 11) | 2.83E-16 | 1.21E-16 | 1.69E-17 | 1.63E-16 | 3.96E-17 | 6.32E-17 | 5.99E-14 | 8.45E-14 | 6.42E-13 | 3.62E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.07E-14 | 4.62E-15 | 6.44E-16 | 3.10E-15 | 7.52E-16 | 1.20E-15 | 1.03E-13 | 1.50E-13 | 3.15E-13 | 1.13E-16 |
| 1,2,4-Trichlorobenzene | 2.53E-16 | 1.09E-16 | 1.52E-17 | 5.85E-17 | 1.42E-17 | 2.27E-17 | 7.06E-15 | 1.03E-14 | 5.49E-15 | 2.97E-17 |
| 1,2-Dichlorobenzene | 3.40E-15 | 1.46E-15 | 2.04E-16 | 9.84E-16 | 2.39E-16 | 3.81E-16 | 2.27E-13 | 3.16E-13 | 2.34E-12 | 1.90E-14 |
| Hexachlorobenzene | 4.61E-15 | 1.98E-15 | 2.77E-16 | 1.73E-15 | 4.20E-16 | 6.71E-16 | 2.32E-14 | 3.32E-14 | 3.28E-14 | 7.75E-16 |
| Pentachlorobenzene | 1.67E-13 | 7.17E-14 | 1.00E-14 | 4.82E-15 | 1.17E-15 | 1.87E-15 | 9.80E-13 | 1.43E-12 | 8.59E-14 | 2.70E-15 |
| Pentachlorophenol | 7.85E-14 | 3.37E-14 | 4.71E-15 | 2.49E-14 | 6.05E-15 | 9.66E-15 | 6.02E-11 | 7.37E-13 | 3.59E-11 | 1.03E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.40E-11 | 1.46E-11 | 2.04E-12 | 9.83E-12 | 2.38E-12 | 3.81E-12 | 3.78E-10 | 2.33E-10 | 2.85E-11 | -- |
| Arsenic | 3.37E-12 | 1.45E-12 | 2.02E-13 | 2.92E-13 | 7.09E-14 | 1.13E-13 | 3.67E-11 | 4.59E-12 | 7.55E-13 | -- |
| Barium | 2.39E-11 | 1.03E-11 | 1.44E-12 | 6.92E-12 | 1.68E-12 | 2.68E-12 | 2.82E-10 | 1.66E-10 | 1.00E-11 | -- |
| Beryllium | 2.14E-11 | 9.21E-12 | 1.29E-12 | 1.86E-12 | 4.50E-13 | 7.20E-13 | 3.47E-11 | 1.19E-11 | 9.00E-13 | -- |
| Boron | 1.32E-10 | 5.69E-11 | 7.94E-12 | 3.82E-11 | 9.27E-12 | 1.48E-11 | 5.61E-08 | 6.41E-08 | 7.41E-09 | -- |
| Cadmium | 1.41E-10 | 6.07E-11 | 8.47E-12 | 5.71E-11 | 1.38E-11 | 2.21E-11 | 3.16E-09 | 3.80E-09 | 2.53E-10 | -- |
| Chromium (Total) | 1.19E-11 | 5.10E-12 | 7.12E-13 | 1.37E-12 | 3.33E-13 | 5.32E-13 | 1.88E-10 | 1.25E-11 | 1.50E-12 | -- |
| Chromium VI | 1.69E-12 | 7.26E-13 | 1.01E-13 | 4.39E-13 | 1.06E-13 | 1.70E-13 | 2.68E-11 | 1.77E-12 | 2.13E-13 | -- |
| Cobalt | 7.19E-11 | 3.09E-11 | 4.31E-12 | 2.08E-11 | 5.04E-12 | 8.05E-12 | 5.54E-10 | 1.34E-10 | 1.41E-11 | -- |
| Lead | 3.28E-09 | 1.41E-09 | 1.97E-10 | 5.69E-11 | 1.38E-11 | 2.20E-11 | 1.06E-08 | 9.60E-09 | 8.27E-10 | -- |
| Mercury - Inorganic | 4.75E-10 | 2.04E-10 | 2.85E-11 | 6.87E-11 | 1.66E-11 | 2.66E-11 | 1.46E-09 | 1.48E-09 | 4.79E-10 | 6.81E-10 |
| Methyl Mercury | 8.59E-12 | 3.69E-12 | 5.15E-13 | 4.97E-12 | 1.20E-12 | 1.92E-12 | 1.64E-10 | 5.43E-11 | 2.38E-11 | 1.92E-10 |
| Nickel | 1.54E-09 | 6.62E-10 | 9.24E-11 | 1.56E-09 | 3.78E-10 | 6.03E-10 | 9.06E-09 | 3.08E-09 | 3.45E-10 | -- |
| Phosphorus | 4.62E-11 | 1.98E-11 | 2.77E-12 | 1.33E-11 | 3.23E-12 | 5.17E-12 | 2.75E-08 | 3.47E-08 | 4.52E-09 | -- |
| Selenium | 6.80E-13 | 2.92E-13 | 4.08E-14 | 3.93E-15 | 9.53E-16 | 1.52E-15 | 4.03E-11 | 2.85E-12 | 4.19E-13 | -- |
| Silver | 7.80E-12 | 3.35E-12 | 4.68E-13 | 5.63E-12 | 1.37E-12 | 2.18E-12 | 4.26E-10 | 2.31E-10 | 2.18E-11 | -- |
| Thallium | 7.48E-10 | 3.22E-10 | 4.49E-11 | 2.16E-11 | 5.24E-12 | 8.38E-12 | 3.21E-09 | 1.38E-10 | 8.38E-12 | -- |
| Tin | 8.11E-10 | 3.49E-10 | 4.87E-11 | 2.34E-10 | 5.68E-11 | 9.08E-11 | 2.49E-09 | 1.58E-09 | 1.36E-10 | -- |
| Vanadium | 7.75E-11 | 3.33E-11 | 4.65E-12 | 2.24E-11 | 5.43E-12 | 8.67E-12 | 1.31E-10 | 5.53E-11 | 6.51E-12 | -- |
| Zinc | 3.38E-09 | 1.45E-09 | 2.02E-10 | 1.95E-10 | 4.73E-11 | 7.55E-11 | 6.41E-08 | 7.04E-08 | 8.50E-08 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Port Darlington**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.99E-13 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-14 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.86E-13 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.91E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.89E-13 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.91E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.97E-14 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.07E-10 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.75E-11 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.05E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.25E-11 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.51E-09 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.20E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.43E-10 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.93E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.73E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.68E-08 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.45E-11 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.00E-10 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-09 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.79E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Solina Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 7.77E-14 | 3.34E-14 | 4.66E-15 | 4.49E-14 | 1.09E-14 | 1.74E-14 | 2.48E-12 | 3.61E-12 | 4.63E-13 | 4.27E-12 |
| Anthracene | 7.67E-14 | 3.30E-14 | 4.60E-15 | 6.42E-14 | 1.56E-14 | 2.49E-14 | 1.10E-12 | 1.60E-12 | 3.23E-15 | 2.97E-16 |
| Fluorene | 7.73E-14 | 3.32E-14 | 4.64E-15 | 4.47E-14 | 1.08E-14 | 1.73E-14 | 1.65E-12 | 2.41E-12 | 4.10E-15 | 1.12E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.45E-11 | 6.23E-12 | 8.69E-13 | 5.86E-12 | 1.42E-12 | 2.27E-12 | 1.46E-11 | 2.11E-11 | 3.88E-12 | 1.64E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 9.83E-15 | 4.22E-15 | 5.89E-16 | 8.52E-16 | 2.07E-16 | 3.30E-16 | 1.33E-14 | 9.62E-15 | 2.83E-15 | 3.58E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.44E-17 | 1.91E-17 | 2.67E-18 | 2.57E-17 | 6.23E-18 | 9.95E-18 | 9.27E-15 | 1.33E-14 | 1.10E-13 | 2.96E-16 |
| Bromoform | 1.69E-16 | 7.25E-17 | 1.01E-17 | 5.36E-17 | 1.30E-17 | 2.08E-17 | 4.10E-14 | 5.98E-14 | 5.80E-14 | 2.72E-17 |
| Carbon Tetrachloride | 1.21E-17 | 5.19E-18 | 7.25E-19 | 3.49E-17 | 8.47E-18 | 1.35E-17 | 1.72E-15 | 2.42E-15 | 3.22E-14 | 1.06E-16 |
| Chloroform | 1.99E-17 | 8.55E-18 | 1.19E-18 | 5.75E-18 | 1.39E-18 | 2.23E-18 | 7.99E-15 | 1.16E-14 | 5.60E-14 | 1.43E-16 |
| Dichloromethane | 3.57E-15 | 1.53E-15 | 2.14E-16 | 1.03E-15 | 2.50E-16 | 3.99E-16 | 3.61E-12 | 5.26E-12 | 3.59E-11 | 1.49E-14 |
| O-Terphenyl | 2.46E-13 | 1.06E-13 | 1.48E-14 | 1.42E-13 | 3.45E-14 | 5.50E-14 | 9.49E-13 | 1.32E-12 | 1.55E-13 | 7.78E-14 |
| Trichlorofluoromethane (FREON 11) | 9.19E-16 | 3.95E-16 | 5.51E-17 | 5.31E-16 | 1.29E-16 | 2.06E-16 | 1.92E-13 | 2.75E-13 | 2.09E-12 | 6.27E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.49E-14 | 1.50E-14 | 2.10E-15 | 1.01E-14 | 2.45E-15 | 3.91E-15 | 3.35E-13 | 4.89E-13 | 1.02E-12 | 1.97E-16 |
| 1,2,4-Trichlorobenzene | 8.23E-16 | 3.54E-16 | 4.94E-17 | 1.90E-16 | 4.61E-17 | 7.37E-17 | 2.29E-14 | 3.35E-14 | 1.79E-14 | 5.14E-17 |
| 1,2-Dichlorobenzene | 1.11E-14 | 4.76E-15 | 6.64E-16 | 3.20E-15 | 7.76E-16 | 1.24E-15 | 7.22E-13 | 1.03E-12 | 7.61E-12 | 3.29E-14 |
| Hexachlorobenzene | 1.50E-14 | 6.45E-15 | 9.00E-16 | 5.64E-15 | 1.37E-15 | 2.18E-15 | 7.48E-14 | 1.08E-13 | 1.07E-13 | 1.34E-15 |
| Pentachlorobenzene | 5.43E-13 | 2.33E-13 | 3.26E-14 | 1.57E-14 | 3.80E-15 | 6.08E-15 | 3.18E-12 | 4.65E-12 | 2.79E-13 | 4.68E-15 |
| Pentachlorophenol | 2.55E-13 | 1.10E-13 | 1.53E-14 | 8.11E-14 | 1.97E-14 | 3.14E-14 | 1.05E-10 | 2.40E-12 | 1.17E-10 | 1.78E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.19E-10 | 5.12E-11 | 7.15E-12 | 3.44E-11 | 8.35E-12 | 1.33E-11 | 1.19E-09 | 8.18E-10 | 1.00E-10 | -- |
| Arsenic | 1.18E-11 | 5.08E-12 | 7.09E-13 | 1.02E-12 | 2.48E-13 | 3.97E-13 | 1.07E-10 | 1.61E-11 | 2.65E-12 | -- |
| Barium | 8.39E-11 | 3.61E-11 | 5.03E-12 | 2.42E-11 | 5.88E-12 | 9.39E-12 | 8.83E-10 | 5.81E-10 | 3.52E-11 | -- |
| Beryllium | 7.51E-11 | 3.23E-11 | 4.50E-12 | 6.51E-12 | 1.58E-12 | 2.52E-12 | 1.05E-10 | 4.17E-11 | 3.15E-12 | -- |
| Boron | 4.64E-10 | 1.99E-10 | 2.78E-11 | 1.34E-10 | 3.25E-11 | 5.19E-11 | 1.89E-07 | 2.25E-07 | 2.60E-08 | -- |
| Cadmium | 4.95E-10 | 2.13E-10 | 2.97E-11 | 2.00E-10 | 4.85E-11 | 7.75E-11 | 1.07E-08 | 1.33E-08 | 8.86E-10 | -- |
| Chromium (Total) | 4.16E-11 | 1.79E-11 | 2.50E-12 | 4.81E-12 | 1.17E-12 | 1.86E-12 | 5.46E-10 | 4.37E-11 | 5.24E-12 | -- |
| Chromium VI | 5.92E-12 | 2.54E-12 | 3.55E-13 | 1.54E-12 | 3.73E-13 | 5.96E-13 | 7.77E-11 | 6.21E-12 | 7.45E-13 | -- |
| Cobalt | 2.52E-10 | 1.08E-10 | 1.51E-11 | 7.28E-11 | 1.77E-11 | 2.82E-11 | 1.65E-09 | 4.69E-10 | 4.94E-11 | -- |
| Lead | 1.15E-08 | 4.94E-09 | 6.90E-10 | 1.99E-10 | 4.83E-11 | 7.72E-11 | 3.45E-08 | 3.36E-08 | 2.90E-09 | -- |
| Mercury - Inorganic | 1.07E-09 | 4.61E-10 | 6.43E-11 | 1.55E-10 | 3.76E-11 | 6.00E-11 | 3.13E-09 | 3.34E-09 | 1.08E-09 | 1.18E-09 |
| Methyl Mercury | 3.01E-11 | 1.29E-11 | 1.81E-12 | 1.74E-11 | 4.22E-12 | 6.74E-12 | 3.67E-10 | 1.90E-10 | 8.34E-11 | 3.33E-10 |
| Nickel | 5.40E-09 | 2.32E-09 | 3.24E-10 | 5.46E-09 | 1.32E-09 | 2.11E-09 | 2.74E-08 | 1.08E-08 | 1.21E-09 | -- |
| Phosphorus | 1.62E-10 | 6.96E-11 | 9.71E-12 | 4.68E-11 | 1.13E-11 | 1.81E-11 | 9.40E-08 | 1.22E-07 | 1.59E-08 | -- |
| Selenium | 2.38E-12 | 1.02E-12 | 1.43E-13 | 1.38E-14 | 3.34E-15 | 5.33E-15 | 1.17E-10 | 1.00E-11 | 1.47E-12 | -- |
| Silver | 2.73E-11 | 1.18E-11 | 1.64E-12 | 1.97E-11 | 4.79E-12 | 7.65E-12 | 1.32E-09 | 8.11E-10 | 7.65E-11 | -- |
| Thallium | 2.62E-09 | 1.13E-09 | 1.57E-10 | 7.58E-11 | 1.84E-11 | 2.94E-11 | 9.28E-09 | 4.84E-10 | 2.94E-11 | -- |
| Tin | 2.84E-09 | 1.22E-09 | 1.71E-10 | 8.21E-10 | 1.99E-10 | 3.18E-10 | 7.83E-09 | 5.53E-09 | 4.77E-10 | -- |
| Vanadium | 2.71E-10 | 1.17E-10 | 1.63E-11 | 7.84E-11 | 1.90E-11 | 3.04E-11 | 3.99E-10 | 1.94E-10 | 2.28E-11 | -- |
| Zinc | 1.18E-08 | 5.08E-09 | 7.10E-10 | 6.84E-10 | 1.66E-10 | 2.65E-10 | 2.15E-07 | 2.47E-07 | 2.98E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Solina Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.92E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.25E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.53E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.10E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.41E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.23E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.95E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.03E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.72E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.41E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.65E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.60E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.85E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.63E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.38E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.94E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.78E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Tooley**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.38E-13 | 5.94E-14 | 8.29E-15 | 7.99E-14 | 1.94E-14 | 3.09E-14 | 4.40E-12 | 6.42E-12 | 8.23E-13 | 7.58E-12 |
| Anthracene | 1.36E-13 | 5.86E-14 | 8.17E-15 | 1.14E-13 | 2.77E-14 | 4.42E-14 | 1.95E-12 | 2.85E-12 | 5.74E-15 | 3.27E-16 |
| Fluorene | 1.37E-13 | 5.91E-14 | 8.24E-15 | 7.94E-14 | 1.92E-14 | 3.07E-14 | 2.93E-12 | 4.28E-12 | 7.29E-15 | 1.23E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.57E-11 | 1.10E-11 | 1.54E-12 | 1.04E-11 | 2.52E-12 | 4.02E-12 | 2.57E-11 | 3.74E-11 | 6.88E-12 | 1.80E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.83E-14 | 7.85E-15 | 1.10E-15 | 1.58E-15 | 3.84E-16 | 6.13E-16 | 2.29E-14 | 1.79E-14 | 5.26E-15 | 3.94E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 7.90E-17 | 3.40E-17 | 4.74E-18 | 4.57E-17 | 1.11E-17 | 1.77E-17 | 1.64E-14 | 2.36E-14 | 1.96E-13 | 3.26E-16 |
| Bromoform | 3.00E-16 | 1.29E-16 | 1.80E-17 | 9.53E-17 | 2.31E-17 | 3.69E-17 | 7.28E-14 | 1.06E-13 | 1.03E-13 | 2.99E-17 |
| Carbon Tetrachloride | 2.15E-17 | 9.24E-18 | 1.29E-18 | 6.21E-17 | 1.51E-17 | 2.40E-17 | 3.02E-15 | 4.31E-15 | 5.72E-14 | 1.16E-16 |
| Chloroform | 3.54E-17 | 1.52E-17 | 2.12E-18 | 1.02E-17 | 2.48E-18 | 3.96E-18 | 1.42E-14 | 2.05E-14 | 9.96E-14 | 1.57E-16 |
| Dichloromethane | 6.34E-15 | 2.73E-15 | 3.80E-16 | 1.83E-15 | 4.44E-16 | 7.10E-16 | 6.41E-12 | 9.36E-12 | 6.39E-11 | 1.64E-14 |
| O-Terphenyl | 4.37E-13 | 1.88E-13 | 2.62E-14 | 2.53E-13 | 6.13E-14 | 9.79E-14 | 1.66E-12 | 2.35E-12 | 2.75E-13 | 8.56E-14 |
| Trichlorofluoromethane (FREON 11) | 1.63E-15 | 7.02E-16 | 9.80E-17 | 9.44E-16 | 2.29E-16 | 3.66E-16 | 3.38E-13 | 4.89E-13 | 3.72E-12 | 6.89E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.21E-14 | 2.67E-14 | 3.73E-15 | 1.79E-14 | 4.35E-15 | 6.95E-15 | 5.95E-13 | 8.69E-13 | 1.82E-12 | 2.16E-16 |
| 1,2,4-Trichlorobenzene | 1.46E-15 | 6.29E-16 | 8.78E-17 | 3.38E-16 | 8.21E-17 | 1.31E-16 | 4.08E-14 | 5.95E-14 | 3.18E-14 | 5.66E-17 |
| 1,2-Dichlorobenzene | 1.97E-14 | 8.46E-15 | 1.18E-15 | 5.69E-15 | 1.38E-15 | 2.20E-15 | 1.27E-12 | 1.83E-12 | 1.35E-11 | 3.62E-14 |
| Hexachlorobenzene | 2.67E-14 | 1.15E-14 | 1.60E-15 | 1.00E-14 | 2.43E-15 | 3.88E-15 | 1.32E-13 | 1.92E-13 | 1.90E-13 | 1.48E-15 |
| Pentachlorobenzene | 9.65E-13 | 4.15E-13 | 5.79E-14 | 2.79E-14 | 6.76E-15 | 1.08E-14 | 5.66E-12 | 8.26E-12 | 4.97E-13 | 5.15E-15 |
| Pentachlorophenol | 4.54E-13 | 1.95E-13 | 2.72E-14 | 1.44E-13 | 3.50E-14 | 5.59E-14 | 1.17E-10 | 4.27E-12 | 2.08E-10 | 1.96E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.22E-10 | 9.56E-11 | 1.33E-11 | 6.42E-11 | 1.56E-11 | 2.49E-11 | 2.18E-09 | 1.53E-09 | 1.87E-10 | -- |
| Arsenic | 2.21E-11 | 9.48E-12 | 1.32E-12 | 1.91E-12 | 4.64E-13 | 7.41E-13 | 1.95E-10 | 3.00E-11 | 4.94E-12 | -- |
| Barium | 1.57E-10 | 6.73E-11 | 9.39E-12 | 4.52E-11 | 1.10E-11 | 1.75E-11 | 1.62E-09 | 1.08E-09 | 6.57E-11 | -- |
| Beryllium | 1.40E-10 | 6.02E-11 | 8.40E-12 | 1.21E-11 | 2.94E-12 | 4.70E-12 | 1.92E-10 | 7.77E-11 | 5.87E-12 | -- |
| Boron | 8.66E-10 | 3.72E-10 | 5.19E-11 | 2.50E-10 | 6.06E-11 | 9.69E-11 | 3.51E-07 | 4.20E-07 | 4.85E-08 | -- |
| Cadmium | 9.23E-10 | 3.97E-10 | 5.54E-11 | 3.73E-10 | 9.05E-11 | 1.45E-10 | 1.99E-08 | 2.48E-08 | 1.65E-09 | -- |
| Chromium (Total) | 7.77E-11 | 3.34E-11 | 4.66E-12 | 8.98E-12 | 2.18E-12 | 3.48E-12 | 9.92E-10 | 8.15E-11 | 9.78E-12 | -- |
| Chromium VI | 1.10E-11 | 4.75E-12 | 6.63E-13 | 2.87E-12 | 6.96E-13 | 1.11E-12 | 1.41E-10 | 1.16E-11 | 1.39E-12 | -- |
| Cobalt | 4.70E-10 | 2.02E-10 | 2.82E-11 | 1.36E-10 | 3.29E-11 | 5.26E-11 | 3.01E-09 | 8.75E-10 | 9.21E-11 | -- |
| Lead | 2.14E-08 | 9.21E-09 | 1.29E-09 | 3.72E-10 | 9.01E-11 | 1.44E-10 | 6.37E-08 | 6.27E-08 | 5.40E-09 | -- |
| Mercury - Inorganic | 1.71E-09 | 7.34E-10 | 1.02E-10 | 2.47E-10 | 5.98E-11 | 9.55E-11 | 4.68E-09 | 5.32E-09 | 1.72E-09 | 1.30E-09 |
| Methyl Mercury | 5.61E-11 | 2.41E-11 | 3.37E-12 | 3.24E-11 | 7.86E-12 | 1.26E-11 | 5.34E-10 | 3.55E-10 | 1.55E-10 | 3.66E-10 |
| Nickel | 1.01E-08 | 4.33E-09 | 6.04E-10 | 1.02E-08 | 2.47E-09 | 3.94E-09 | 5.00E-08 | 2.02E-08 | 2.25E-09 | -- |
| Phosphorus | 3.02E-10 | 1.30E-10 | 1.81E-11 | 8.73E-11 | 2.12E-11 | 3.38E-11 | 1.75E-07 | 2.27E-07 | 2.96E-08 | -- |
| Selenium | 4.45E-12 | 1.91E-12 | 2.67E-13 | 2.57E-14 | 6.23E-15 | 9.96E-15 | 2.12E-10 | 1.87E-11 | 2.74E-12 | -- |
| Silver | 5.10E-11 | 2.19E-11 | 3.06E-12 | 3.69E-11 | 8.94E-12 | 1.43E-11 | 2.43E-09 | 1.51E-09 | 1.43E-10 | -- |
| Thallium | 4.89E-09 | 2.10E-09 | 2.93E-10 | 1.41E-10 | 3.43E-11 | 5.47E-11 | 1.68E-08 | 9.03E-10 | 5.48E-11 | -- |
| Tin | 5.30E-09 | 2.28E-09 | 3.18E-10 | 1.53E-09 | 3.71E-10 | 5.93E-10 | 1.44E-08 | 1.03E-08 | 8.90E-10 | -- |
| Vanadium | 5.06E-10 | 2.17E-10 | 3.04E-11 | 1.46E-10 | 3.54E-11 | 5.66E-11 | 7.31E-10 | 3.61E-10 | 4.25E-11 | -- |
| Zinc | 2.21E-08 | 9.49E-09 | 1.32E-09 | 1.28E-09 | 3.09E-10 | 4.94E-10 | 3.98E-07 | 4.60E-07 | 5.56E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Tooley**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.19E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.56E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.98E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.97E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.43E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.41E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.67E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.72E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.33E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.04E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.21E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.83E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.32E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.22E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.60E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Farmer**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.72E-13 | 7.41E-14 | 1.03E-14 | 9.96E-14 | 2.41E-14 | 3.86E-14 | 9.89E-12 | 1.77E-11 | 1.67E-12 | 2.67E-11 |
| Anthracene | 1.70E-13 | 7.30E-14 | 1.02E-14 | 1.42E-13 | 3.45E-14 | 5.51E-14 | 4.39E-12 | 7.85E-12 | 1.17E-14 | 1.04E-15 |
| Fluorene | 1.71E-13 | 7.37E-14 | 1.03E-14 | 9.90E-14 | 2.40E-14 | 3.83E-14 | 6.59E-12 | 1.18E-11 | 1.48E-14 | 3.92E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 3.20E-11 | 1.38E-11 | 1.92E-12 | 1.29E-11 | 3.14E-12 | 5.02E-12 | 5.78E-11 | 1.03E-10 | 1.40E-11 | 5.74E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.53E-14 | 1.09E-14 | 1.52E-15 | 2.19E-15 | 5.32E-16 | 8.50E-16 | 5.59E-14 | 5.48E-14 | 1.19E-14 | 1.26E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 9.85E-17 | 4.24E-17 | 5.91E-18 | 5.69E-17 | 1.38E-17 | 2.21E-17 | 3.67E-14 | 6.52E-14 | 3.99E-13 | 1.04E-15 |
| Bromoform | 3.74E-16 | 1.61E-16 | 2.24E-17 | 1.19E-16 | 2.88E-17 | 4.60E-17 | 1.64E-13 | 2.94E-13 | 2.10E-13 | 9.54E-17 |
| Carbon Tetrachloride | 2.68E-17 | 1.15E-17 | 1.61E-18 | 7.74E-17 | 1.88E-17 | 3.00E-17 | 6.76E-15 | 1.19E-14 | 1.16E-13 | 3.71E-16 |
| Chloroform | 4.41E-17 | 1.90E-17 | 2.65E-18 | 1.27E-17 | 3.09E-18 | 4.94E-18 | 3.18E-14 | 5.67E-14 | 2.03E-13 | 5.01E-16 |
| Dichloromethane | 7.91E-15 | 3.40E-15 | 4.74E-16 | 2.29E-15 | 5.54E-16 | 8.85E-16 | 1.44E-11 | 2.58E-11 | 1.30E-10 | 5.22E-14 |
| O-Terphenyl | 5.45E-13 | 2.34E-13 | 3.27E-14 | 3.15E-13 | 7.64E-14 | 1.22E-13 | 3.71E-12 | 6.48E-12 | 5.59E-13 | 2.72E-13 |
| Trichlorofluoromethane (FREON 11) | 2.04E-15 | 8.76E-16 | 1.22E-16 | 1.18E-15 | 2.86E-16 | 4.56E-16 | 7.60E-13 | 1.35E-12 | 7.56E-12 | 2.20E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 7.74E-14 | 3.33E-14 | 4.65E-15 | 2.24E-14 | 5.43E-15 | 8.67E-15 | 1.34E-12 | 2.40E-12 | 3.71E-12 | 6.89E-16 |
| 1,2,4-Trichlorobenzene | 1.83E-15 | 7.85E-16 | 1.10E-16 | 4.22E-16 | 1.02E-16 | 1.63E-16 | 9.16E-14 | 1.64E-13 | 6.46E-14 | 1.80E-16 |
| 1,2-Dichlorobenzene | 2.46E-14 | 1.06E-14 | 1.47E-15 | 7.10E-15 | 1.72E-15 | 2.75E-15 | 2.85E-12 | 5.04E-12 | 2.75E-11 | 1.15E-13 |
| Hexachlorobenzene | 3.33E-14 | 1.43E-14 | 2.00E-15 | 1.25E-14 | 3.03E-15 | 4.84E-15 | 2.97E-13 | 5.30E-13 | 3.87E-13 | 4.71E-15 |
| Pentachlorobenzene | 1.20E-12 | 5.17E-13 | 7.22E-14 | 3.48E-14 | 8.43E-15 | 1.35E-14 | 1.27E-11 | 2.28E-11 | 1.01E-12 | 1.64E-14 |
| Pentachlorophenol | 5.66E-13 | 2.43E-13 | 3.40E-14 | 1.80E-13 | 4.36E-14 | 6.97E-14 | 2.38E-10 | 1.18E-11 | 4.23E-10 | 6.24E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.08E-10 | 1.32E-10 | 1.85E-11 | 8.90E-11 | 2.16E-11 | 3.45E-11 | 5.43E-09 | 4.68E-09 | 4.22E-10 | -- |
| Arsenic | 3.06E-11 | 1.31E-11 | 1.83E-12 | 2.65E-12 | 6.42E-13 | 1.03E-12 | 4.83E-10 | 9.21E-11 | 1.12E-11 | -- |
| Barium | 2.17E-10 | 9.32E-11 | 1.30E-11 | 6.27E-11 | 1.52E-11 | 2.43E-11 | 4.03E-09 | 3.32E-09 | 1.49E-10 | -- |
| Beryllium | 1.94E-10 | 8.34E-11 | 1.16E-11 | 1.68E-11 | 4.08E-12 | 6.51E-12 | 4.75E-10 | 2.38E-10 | 1.33E-11 | -- |
| Boron | 1.20E-09 | 5.16E-10 | 7.20E-11 | 3.47E-10 | 8.40E-11 | 1.34E-10 | 8.75E-07 | 1.29E-06 | 1.10E-07 | -- |
| Cadmium | 1.28E-09 | 5.50E-10 | 7.67E-11 | 5.17E-10 | 1.25E-10 | 2.00E-10 | 4.96E-08 | 7.61E-08 | 3.74E-09 | -- |
| Chromium (Total) | 1.08E-10 | 4.63E-11 | 6.46E-12 | 1.24E-11 | 3.02E-12 | 4.82E-12 | 2.45E-09 | 2.50E-10 | 2.21E-11 | -- |
| Chromium VI | 1.53E-11 | 6.58E-12 | 9.18E-13 | 3.98E-12 | 9.65E-13 | 1.54E-12 | 3.49E-10 | 3.56E-11 | 3.15E-12 | -- |
| Cobalt | 6.51E-10 | 2.80E-10 | 3.91E-11 | 1.88E-10 | 4.56E-11 | 7.29E-11 | 7.45E-09 | 2.68E-09 | 2.08E-10 | -- |
| Lead | 2.97E-08 | 1.28E-08 | 1.78E-09 | 5.15E-10 | 1.25E-10 | 1.99E-10 | 1.59E-07 | 1.92E-07 | 1.22E-08 | -- |
| Mercury - Inorganic | 1.79E-09 | 7.68E-10 | 1.07E-10 | 2.58E-10 | 6.25E-11 | 9.99E-11 | 9.09E-09 | 1.23E-08 | 2.94E-09 | 4.13E-09 |
| Methyl Mercury | 7.77E-11 | 3.34E-11 | 4.66E-12 | 4.49E-11 | 1.09E-11 | 1.74E-11 | 1.23E-09 | 1.09E-09 | 3.51E-10 | 1.17E-09 |
| Nickel | 1.40E-08 | 6.00E-09 | 8.37E-10 | 1.41E-08 | 3.42E-09 | 5.46E-09 | 1.24E-07 | 6.18E-08 | 5.10E-09 | -- |
| Phosphorus | 4.18E-10 | 1.80E-10 | 2.51E-11 | 1.21E-10 | 2.93E-11 | 4.68E-11 | 4.36E-07 | 6.97E-07 | 6.69E-08 | -- |
| Selenium | 6.16E-12 | 2.65E-12 | 3.70E-13 | 3.56E-14 | 8.64E-15 | 1.38E-14 | 5.26E-10 | 5.72E-11 | 6.19E-12 | -- |
| Silver | 7.07E-11 | 3.04E-11 | 4.24E-12 | 5.11E-11 | 1.24E-11 | 1.98E-11 | 6.04E-09 | 4.64E-09 | 3.23E-10 | -- |
| Thallium | 6.78E-09 | 2.91E-09 | 4.07E-10 | 1.96E-10 | 4.75E-11 | 7.59E-11 | 4.17E-08 | 2.77E-09 | 1.24E-10 | -- |
| Tin | 7.34E-09 | 3.16E-09 | 4.40E-10 | 2.12E-09 | 5.14E-10 | 8.22E-10 | 3.57E-08 | 3.16E-08 | 2.01E-09 | -- |
| Vanadium | 7.01E-10 | 3.01E-10 | 4.21E-11 | 2.03E-10 | 4.91E-11 | 7.85E-11 | 1.81E-09 | 1.11E-09 | 9.61E-11 | -- |
| Zinc | 3.06E-08 | 1.31E-08 | 1.83E-09 | 1.77E-09 | 4.28E-10 | 6.84E-10 | 9.92E-07 | 1.41E-06 | 1.26E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 140,000 tpy**
**Farmer**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | 1.33E-13 | 2.79E-13 | 1.65E-14 | 3.57E-14 | 3.29E-14 | -- | 5.69E-11 |
| Anthracene | -- | -- | -- | 9.91E-14 | 1.91E-13 | 1.35E-14 | 3.10E-14 | 2.86E-14 | -- | 1.31E-11 |
| Fluorene | -- | -- | -- | 1.19E-13 | 2.39E-13 | 1.51E-14 | 3.35E-14 | 3.09E-14 | -- | 1.93E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | 6.07E-10 | 7.65E-10 | 1.13E-10 | 3.02E-12 | 2.78E-12 | -- | 1.74E-09 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | 8.04E-13 | 1.42E-12 | 8.11E-14 | 1.97E-15 | 1.82E-15 | -- | 2.49E-12 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | 3.62E-11 | 4.85E-11 | 1.31E-12 | 1.69E-14 | 1.56E-14 | -- | 8.65E-11 |
| Bromoform | -- | -- | -- | 1.36E-09 | 1.82E-09 | 4.93E-11 | 6.34E-13 | 5.85E-13 | -- | 3.23E-09 |
| Carbon Tetrachloride | -- | -- | -- | 1.56E-11 | 2.09E-11 | 5.67E-13 | 7.29E-15 | 6.73E-15 | -- | 3.72E-11 |
| Chloroform | -- | -- | -- | 6.95E-12 | 9.31E-12 | 2.52E-13 | 3.25E-15 | 3.00E-15 | -- | 1.68E-11 |
| Dichloromethane | -- | -- | -- | 7.65E-10 | 1.02E-09 | 2.78E-11 | 3.58E-13 | 3.30E-13 | -- | 1.99E-09 |
| O-Terphenyl | -- | -- | -- | 3.93E-11 | 6.15E-11 | 3.28E-12 | 7.86E-14 | 7.25E-14 | -- | 1.17E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | 4.13E-09 | 5.53E-09 | 1.50E-10 | 1.93E-12 | 1.78E-12 | -- | 9.82E-09 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | 1.19E-11 | 1.69E-11 | 6.35E-13 | 1.37E-14 | 1.26E-14 | -- | 3.70E-11 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | 7.29E-12 | 9.82E-12 | 2.70E-13 | 3.55E-15 | 3.28E-15 | -- | 1.77E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | 1.71E-10 | 2.30E-10 | 6.30E-12 | 8.21E-14 | 7.57E-14 | -- | 4.43E-10 |
| Hexachlorobenzene | -- | -- | -- | 1.19E-11 | 1.62E-11 | 5.05E-13 | 7.64E-15 | 7.05E-15 | -- | 2.99E-11 |
| Pentachlorobenzene | -- | -- | -- | 5.42E-11 | 8.43E-11 | 7.73E-12 | 1.90E-13 | 1.75E-13 | -- | 1.85E-10 |
| Pentachlorophenol | -- | -- | -- | 6.00E-11 | 1.22E-10 | 1.16E-12 | 2.50E-16 | 2.30E-16 | -- | 1.48E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | 1.79E-09 | 1.66E-09 | 8.02E-11 | 1.13E-12 | 1.05E-12 | -- | 1.47E-08 |
| Arsenic | -- | -- | -- | 3.35E-10 | 9.21E-11 | 1.20E-11 | 1.85E-13 | 1.70E-13 | -- | 1.08E-09 |
| Barium | -- | -- | -- | 1.79E-10 | 3.85E-09 | 7.51E-12 | 1.07E-13 | 9.89E-14 | -- | 1.20E-08 |
| Beryllium | -- | -- | -- | 2.31E-10 | 1.60E-12 | 2.31E-11 | 5.64E-13 | 5.20E-13 | -- | 1.30E-09 |
| Boron | -- | -- | -- | 8.66E-08 | 1.82E-07 | 4.08E-09 | 5.32E-11 | 4.91E-11 | -- | 2.55E-06 |
| Cadmium | -- | -- | -- | 1.01E-09 | 5.19E-10 | 6.82E-11 | 8.30E-10 | 3.15E-11 | -- | 1.35E-07 |
| Chromium (Total) | -- | -- | -- | 4.45E-09 | 1.12E-08 | 1.33E-10 | 1.81E-12 | 1.67E-12 | -- | 1.87E-08 |
| Chromium VI | -- | -- | -- | 6.33E-10 | 1.60E-09 | 1.89E-11 | 2.58E-13 | 2.38E-13 | -- | 2.67E-09 |
| Cobalt | -- | -- | -- | 4.81E-08 | 9.09E-08 | 2.18E-09 | 4.02E-11 | 3.70E-11 | -- | 1.53E-07 |
| Lead | -- | -- | -- | 1.42E-08 | 9.77E-08 | 1.25E-09 | 2.76E-11 | 2.55E-11 | -- | 5.21E-07 |
| Mercury - Inorganic | -- | -- | -- | 6.15E-09 | 1.68E-08 | 5.81E-12 | 1.80E-10 | 2.91E-10 | -- | 5.50E-08 |
| Methyl Mercury | -- | -- | -- | 8.67E-11 | 3.08E-10 | 4.47E-14 | 1.27E-12 | 2.05E-12 | -- | 4.43E-09 |
| Nickel | -- | -- | -- | 2.47E-07 | 3.64E-07 | 1.31E-08 | 2.55E-10 | 2.35E-10 | -- | 8.60E-07 |
| Phosphorus | -- | -- | -- | 1.83E-06 | 3.95E-06 | 1.23E-07 | 2.17E-09 | 2.01E-09 | -- | 7.11E-06 |
| Selenium | -- | -- | -- | 3.69E-10 | 9.05E-09 | 5.07E-10 | 3.03E-11 | 4.89E-11 | -- | 1.06E-08 |
| Silver | -- | -- | -- | 4.43E-09 | 2.82E-07 | 1.30E-10 | 1.20E-12 | 1.11E-12 | -- | 2.98E-07 |
| Thallium | -- | -- | -- | 6.68E-07 | 2.88E-07 | 3.74E-08 | 7.86E-10 | 7.25E-10 | -- | 1.05E-06 |
| Tin | -- | -- | -- | 9.71E-07 | 1.69E-06 | 7.94E-08 | 1.78E-09 | 1.64E-09 | -- | 2.83E-06 |
| Vanadium | -- | -- | -- | 1.96E-09 | 3.13E-09 | 2.08E-10 | 5.16E-12 | 4.76E-12 | -- | 9.70E-09 |
| Zinc | -- | -- | -- | 1.54E-08 | 5.23E-08 | 9.35E-10 | 1.56E-09 | 2.52E-09 | -- | 3.78E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Bowmanville Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.08E-13 | 4.64E-14 | 6.47E-15 | 6.23E-14 | 1.51E-14 | 2.41E-14 | 3.44E-12 | 5.01E-12 | 6.42E-13 | 5.93E-12 |
| Anthracene | 1.06E-13 | 4.57E-14 | 6.38E-15 | 8.92E-14 | 2.16E-14 | 3.45E-14 | 1.52E-12 | 2.22E-12 | 4.49E-15 | 5.26E-16 |
| Fluorene | 1.07E-13 | 4.61E-14 | 6.43E-15 | 6.20E-14 | 1.50E-14 | 2.40E-14 | 2.29E-12 | 3.34E-12 | 5.69E-15 | 1.98E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.01E-11 | 8.66E-12 | 1.21E-12 | 8.15E-12 | 1.98E-12 | 3.16E-12 | 2.03E-11 | 2.94E-11 | 5.40E-12 | 2.90E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.25E-14 | 9.69E-15 | 1.35E-15 | 1.95E-15 | 4.74E-16 | 7.57E-16 | 3.23E-14 | 2.21E-14 | 6.49E-15 | 6.35E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.17E-17 | 2.65E-17 | 3.70E-18 | 3.56E-17 | 8.64E-18 | 1.38E-17 | 1.29E-14 | 1.84E-14 | 1.53E-13 | 5.24E-16 |
| Bromoform | 2.34E-16 | 1.01E-16 | 1.40E-17 | 7.44E-17 | 1.80E-17 | 2.88E-17 | 5.69E-14 | 8.30E-14 | 8.05E-14 | 4.82E-17 |
| Carbon Tetrachloride | 1.68E-17 | 7.21E-18 | 1.01E-18 | 4.84E-17 | 1.17E-17 | 1.88E-17 | 2.41E-15 | 3.36E-15 | 4.46E-14 | 1.87E-16 |
| Chloroform | 2.76E-17 | 1.19E-17 | 1.66E-18 | 7.98E-18 | 1.93E-18 | 3.09E-18 | 1.11E-14 | 1.60E-14 | 7.77E-14 | 2.53E-16 |
| Dichloromethane | 4.95E-15 | 2.13E-15 | 2.97E-16 | 1.43E-15 | 3.47E-16 | 5.54E-16 | 5.01E-12 | 7.30E-12 | 4.99E-11 | 2.64E-14 |
| O-Terphenyl | 3.41E-13 | 1.47E-13 | 2.05E-14 | 1.97E-13 | 4.78E-14 | 7.64E-14 | 1.33E-12 | 1.83E-12 | 2.15E-13 | 1.38E-13 |
| Trichlorofluoromethane (FREON 11) | 1.28E-15 | 5.48E-16 | 7.65E-17 | 7.37E-16 | 1.79E-16 | 2.85E-16 | 2.67E-13 | 3.81E-13 | 2.90E-12 | 1.11E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.85E-14 | 2.08E-14 | 2.91E-15 | 1.40E-14 | 3.40E-15 | 5.42E-15 | 4.65E-13 | 6.79E-13 | 1.42E-12 | 3.48E-16 |
| 1,2,4-Trichlorobenzene | 1.14E-15 | 4.91E-16 | 6.85E-17 | 2.64E-16 | 6.40E-17 | 1.02E-16 | 3.18E-14 | 4.64E-14 | 2.48E-14 | 9.10E-17 |
| 1,2-Dichlorobenzene | 1.54E-14 | 6.61E-15 | 9.22E-16 | 4.44E-15 | 1.08E-15 | 1.72E-15 | 1.01E-12 | 1.42E-12 | 1.06E-11 | 5.82E-14 |
| Hexachlorobenzene | 2.08E-14 | 8.95E-15 | 1.25E-15 | 7.82E-15 | 1.90E-15 | 3.03E-15 | 1.04E-13 | 1.50E-13 | 1.48E-13 | 2.38E-15 |
| Pentachlorobenzene | 7.53E-13 | 3.24E-13 | 4.52E-14 | 2.18E-14 | 5.28E-15 | 8.43E-15 | 4.42E-12 | 6.45E-12 | 3.88E-13 | 8.29E-15 |
| Pentachlorophenol | 3.54E-13 | 1.52E-13 | 2.12E-14 | 1.13E-13 | 2.73E-14 | 4.36E-14 | 1.85E-10 | 3.33E-12 | 1.62E-10 | 3.15E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.41E-10 | 6.08E-11 | 8.48E-12 | 4.09E-11 | 9.91E-12 | 1.58E-11 | 1.61E-09 | 9.70E-10 | 1.19E-10 | -- |
| Arsenic | 1.40E-11 | 6.03E-12 | 8.42E-13 | 1.22E-12 | 2.95E-13 | 4.71E-13 | 1.58E-10 | 1.91E-11 | 3.14E-12 | -- |
| Barium | 9.95E-11 | 4.28E-11 | 5.97E-12 | 2.88E-11 | 6.97E-12 | 1.11E-11 | 1.20E-09 | 6.89E-10 | 4.18E-11 | -- |
| Beryllium | 8.91E-11 | 3.83E-11 | 5.35E-12 | 7.73E-12 | 1.87E-12 | 2.99E-12 | 1.49E-10 | 4.95E-11 | 3.74E-12 | -- |
| Boron | 5.50E-10 | 2.37E-10 | 3.30E-11 | 1.59E-10 | 3.85E-11 | 6.16E-11 | 2.36E-07 | 2.67E-07 | 3.08E-08 | -- |
| Cadmium | 5.87E-10 | 2.52E-10 | 3.52E-11 | 2.38E-10 | 5.76E-11 | 9.20E-11 | 1.32E-08 | 1.58E-08 | 1.05E-09 | -- |
| Chromium (Total) | 4.94E-11 | 2.12E-11 | 2.96E-12 | 5.71E-12 | 1.38E-12 | 2.21E-12 | 8.14E-10 | 5.18E-11 | 6.22E-12 | -- |
| Chromium VI | 7.02E-12 | 3.02E-12 | 4.21E-13 | 1.83E-12 | 4.43E-13 | 7.07E-13 | 1.16E-10 | 7.37E-12 | 8.84E-13 | -- |
| Cobalt | 2.99E-10 | 1.29E-10 | 1.79E-11 | 8.64E-11 | 2.09E-11 | 3.35E-11 | 2.39E-09 | 5.56E-10 | 5.86E-11 | -- |
| Lead | 1.37E-08 | 5.87E-09 | 8.19E-10 | 2.37E-10 | 5.74E-11 | 9.17E-11 | 4.46E-08 | 3.99E-08 | 3.44E-09 | -- |
| Mercury - Inorganic | 9.67E-10 | 4.16E-10 | 5.80E-11 | 1.40E-10 | 3.39E-11 | 5.41E-11 | 2.93E-09 | 3.02E-09 | 9.75E-10 | 1.08E-09 |
| Methyl Mercury | 3.57E-11 | 1.54E-11 | 2.14E-12 | 2.07E-11 | 5.01E-12 | 8.00E-12 | 3.98E-10 | 2.26E-10 | 9.90E-11 | 3.05E-10 |
| Nickel | 6.41E-09 | 2.75E-09 | 3.84E-10 | 6.48E-09 | 1.57E-09 | 2.51E-09 | 3.89E-08 | 1.28E-08 | 1.43E-09 | -- |
| Phosphorus | 1.92E-10 | 8.25E-11 | 1.15E-11 | 5.55E-11 | 1.35E-11 | 2.15E-11 | 1.15E-07 | 1.45E-07 | 1.88E-08 | -- |
| Selenium | 2.83E-12 | 1.22E-12 | 1.70E-13 | 1.63E-14 | 3.96E-15 | 6.33E-15 | 1.74E-10 | 1.19E-11 | 1.74E-12 | -- |
| Silver | 3.24E-11 | 1.39E-11 | 1.95E-12 | 2.34E-11 | 5.68E-12 | 9.07E-12 | 1.82E-09 | 9.63E-10 | 9.08E-11 | -- |
| Thallium | 3.11E-09 | 1.34E-09 | 1.87E-10 | 8.99E-11 | 2.18E-11 | 3.48E-11 | 1.39E-08 | 5.74E-10 | 3.48E-11 | -- |
| Tin | 3.37E-09 | 1.45E-09 | 2.02E-10 | 9.75E-10 | 2.36E-10 | 3.78E-10 | 1.06E-08 | 6.57E-09 | 5.67E-10 | -- |
| Vanadium | 3.22E-10 | 1.39E-10 | 1.93E-11 | 9.31E-11 | 2.26E-11 | 3.61E-11 | 5.60E-10 | 2.30E-10 | 2.71E-11 | -- |
| Zinc | 1.40E-08 | 6.03E-09 | 8.42E-10 | 8.11E-10 | 1.97E-10 | 3.14E-10 | 2.70E-07 | 2.93E-07 | 3.54E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Bowmanville Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.86E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.21E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.07E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.22E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.56E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.66E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.48E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.67E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.98E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.34E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.13E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.55E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.59E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.67E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.33E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.96E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.43E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.38E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Courtice Subdivision**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 8.09E-14 | 3.48E-14 | 4.85E-15 | 4.67E-14 | 1.13E-14 | 1.81E-14 | 2.58E-12 | 3.76E-12 | 4.81E-13 | 4.45E-12 |
| Anthracene | 7.98E-14 | 3.43E-14 | 4.79E-15 | 6.68E-14 | 1.62E-14 | 2.59E-14 | 1.14E-12 | 1.67E-12 | 3.36E-15 | 3.41E-16 |
| Fluorene | 8.04E-14 | 3.46E-14 | 4.82E-15 | 4.65E-14 | 1.13E-14 | 1.80E-14 | 1.72E-12 | 2.51E-12 | 4.27E-15 | 1.28E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.51E-11 | 6.47E-12 | 9.03E-13 | 6.09E-12 | 1.48E-12 | 2.36E-12 | 1.51E-11 | 2.20E-11 | 4.04E-12 | 1.88E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.63E-14 | 6.99E-15 | 9.75E-16 | 1.41E-15 | 3.42E-16 | 5.46E-16 | 2.26E-14 | 1.59E-14 | 4.68E-15 | 4.11E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.62E-17 | 1.99E-17 | 2.77E-18 | 2.67E-17 | 6.48E-18 | 1.04E-17 | 9.66E-15 | 1.38E-14 | 1.15E-13 | 3.39E-16 |
| Bromoform | 1.75E-16 | 7.54E-17 | 1.05E-17 | 5.58E-17 | 1.35E-17 | 2.16E-17 | 4.26E-14 | 6.23E-14 | 6.04E-14 | 3.12E-17 |
| Carbon Tetrachloride | 1.26E-17 | 5.41E-18 | 7.54E-19 | 3.63E-17 | 8.81E-18 | 1.41E-17 | 1.80E-15 | 2.52E-15 | 3.35E-14 | 1.21E-16 |
| Chloroform | 2.07E-17 | 8.90E-18 | 1.24E-18 | 5.98E-18 | 1.45E-18 | 2.32E-18 | 8.32E-15 | 1.20E-14 | 5.83E-14 | 1.64E-16 |
| Dichloromethane | 3.71E-15 | 1.60E-15 | 2.23E-16 | 1.07E-15 | 2.60E-16 | 4.15E-16 | 3.76E-12 | 5.48E-12 | 3.74E-11 | 1.71E-14 |
| O-Terphenyl | 2.56E-13 | 1.10E-13 | 1.54E-14 | 1.48E-13 | 3.59E-14 | 5.73E-14 | 9.93E-13 | 1.37E-12 | 1.61E-13 | 8.91E-14 |
| Trichlorofluoromethane (FREON 11) | 9.56E-16 | 4.11E-16 | 5.74E-17 | 5.53E-16 | 1.34E-16 | 2.14E-16 | 2.00E-13 | 2.86E-13 | 2.17E-12 | 7.18E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.63E-14 | 1.56E-14 | 2.18E-15 | 1.05E-14 | 2.55E-15 | 4.07E-15 | 3.49E-13 | 5.09E-13 | 1.07E-12 | 2.25E-16 |
| 1,2,4-Trichlorobenzene | 8.57E-16 | 3.68E-16 | 5.14E-17 | 1.98E-16 | 4.80E-17 | 7.67E-17 | 2.39E-14 | 3.48E-14 | 1.86E-14 | 5.89E-17 |
| 1,2-Dichlorobenzene | 1.15E-14 | 4.95E-15 | 6.91E-16 | 3.33E-15 | 8.07E-16 | 1.29E-15 | 7.53E-13 | 1.07E-12 | 7.92E-12 | 3.77E-14 |
| Hexachlorobenzene | 1.56E-14 | 6.71E-15 | 9.37E-16 | 5.86E-15 | 1.42E-15 | 2.27E-15 | 7.79E-14 | 1.12E-13 | 1.11E-13 | 1.54E-15 |
| Pentachlorobenzene | 5.65E-13 | 2.43E-13 | 3.39E-14 | 1.63E-14 | 3.96E-15 | 6.32E-15 | 3.31E-12 | 4.84E-12 | 2.91E-13 | 5.36E-15 |
| Pentachlorophenol | 2.66E-13 | 1.14E-13 | 1.59E-14 | 8.44E-14 | 2.05E-14 | 3.27E-14 | 1.20E-10 | 2.50E-12 | 1.22E-10 | 2.04E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.02E-10 | 4.40E-11 | 6.14E-12 | 2.96E-11 | 7.17E-12 | 1.14E-11 | 1.14E-09 | 7.02E-10 | 8.59E-11 | -- |
| Arsenic | 1.01E-11 | 4.36E-12 | 6.09E-13 | 8.80E-13 | 2.13E-13 | 3.41E-13 | 1.11E-10 | 1.38E-11 | 2.27E-12 | -- |
| Barium | 7.20E-11 | 3.10E-11 | 4.32E-12 | 2.08E-11 | 5.04E-12 | 8.06E-12 | 8.50E-10 | 4.99E-10 | 3.02E-11 | -- |
| Beryllium | 6.44E-11 | 2.77E-11 | 3.86E-12 | 5.58E-12 | 1.35E-12 | 2.16E-12 | 1.05E-10 | 3.57E-11 | 2.70E-12 | -- |
| Boron | 3.98E-10 | 1.71E-10 | 2.39E-11 | 1.15E-10 | 2.79E-11 | 4.46E-11 | 1.69E-07 | 1.93E-07 | 2.23E-08 | -- |
| Cadmium | 4.25E-10 | 1.83E-10 | 2.55E-11 | 1.72E-10 | 4.16E-11 | 6.65E-11 | 9.50E-09 | 1.14E-08 | 7.61E-10 | -- |
| Chromium (Total) | 3.57E-11 | 1.54E-11 | 2.14E-12 | 4.13E-12 | 1.00E-12 | 1.60E-12 | 5.67E-10 | 3.75E-11 | 4.50E-12 | -- |
| Chromium VI | 5.08E-12 | 2.18E-12 | 3.05E-13 | 1.32E-12 | 3.20E-13 | 5.12E-13 | 8.07E-11 | 5.33E-12 | 6.40E-13 | -- |
| Cobalt | 2.16E-10 | 9.30E-11 | 1.30E-11 | 6.25E-11 | 1.52E-11 | 2.42E-11 | 1.67E-09 | 4.02E-10 | 4.24E-11 | -- |
| Lead | 9.87E-09 | 4.24E-09 | 5.92E-10 | 1.71E-10 | 4.15E-11 | 6.63E-11 | 3.18E-08 | 2.89E-08 | 2.49E-09 | -- |
| Mercury - Inorganic | 6.36E-10 | 2.74E-10 | 3.82E-11 | 9.20E-11 | 2.23E-11 | 3.56E-11 | 1.93E-09 | 1.98E-09 | 6.41E-10 | 7.00E-10 |
| Methyl Mercury | 2.58E-11 | 1.11E-11 | 1.55E-12 | 1.49E-11 | 3.62E-12 | 5.78E-12 | 2.72E-10 | 1.63E-10 | 7.15E-11 | 1.97E-10 |
| Nickel | 4.63E-09 | 1.99E-09 | 2.78E-10 | 4.69E-09 | 1.14E-09 | 1.81E-09 | 2.73E-08 | 9.28E-09 | 1.04E-09 | -- |
| Phosphorus | 1.39E-10 | 5.97E-11 | 8.33E-12 | 4.01E-11 | 9.73E-12 | 1.55E-11 | 8.27E-08 | 1.05E-07 | 1.36E-08 | -- |
| Selenium | 2.05E-12 | 8.80E-13 | 1.23E-13 | 1.18E-14 | 2.87E-15 | 4.58E-15 | 1.21E-10 | 8.58E-12 | 1.26E-12 | -- |
| Silver | 2.35E-11 | 1.01E-11 | 1.41E-12 | 1.70E-11 | 4.11E-12 | 6.57E-12 | 1.28E-09 | 6.96E-10 | 6.57E-11 | -- |
| Thallium | 2.25E-09 | 9.68E-10 | 1.35E-10 | 6.50E-11 | 1.58E-11 | 2.52E-11 | 9.67E-09 | 4.15E-10 | 2.52E-11 | -- |
| Tin | 2.44E-09 | 1.05E-09 | 1.46E-10 | 7.05E-10 | 1.71E-10 | 2.73E-10 | 7.49E-09 | 4.75E-09 | 4.10E-10 | -- |
| Vanadium | 2.33E-10 | 1.00E-10 | 1.40E-11 | 6.73E-11 | 1.63E-11 | 2.61E-11 | 3.94E-10 | 1.66E-10 | 1.96E-11 | -- |
| Zinc | 1.02E-08 | 4.36E-09 | 6.09E-10 | 5.87E-10 | 1.42E-10 | 2.27E-10 | 1.93E-07 | 2.12E-07 | 2.56E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Courtice Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.04E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.43E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.37E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.39E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.80E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.89E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.24E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.90E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.80E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.31E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.49E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.48E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.26E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.69E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.81E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.35E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.67E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.22E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.77E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Courtice Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.46E-13 | 1.49E-13 | 2.08E-14 | 2.00E-13 | 4.85E-14 | 7.75E-14 | 1.10E-11 | 1.61E-11 | 2.06E-12 | 1.90E-11 |
| Anthracene | 3.41E-13 | 1.47E-13 | 2.05E-14 | 2.86E-13 | 6.94E-14 | 1.11E-13 | 4.89E-12 | 7.13E-12 | 1.44E-14 | 9.89E-16 |
| Fluorene | 3.44E-13 | 1.48E-13 | 2.06E-14 | 1.99E-13 | 4.82E-14 | 7.70E-14 | 7.35E-12 | 1.07E-11 | 1.83E-14 | 3.72E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 6.46E-11 | 2.78E-11 | 3.87E-12 | 2.61E-11 | 6.33E-12 | 1.01E-11 | 6.48E-11 | 9.41E-11 | 1.73E-11 | 5.45E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.96E-14 | 2.13E-14 | 2.98E-15 | 4.30E-15 | 1.04E-15 | 1.67E-15 | 6.43E-14 | 4.86E-14 | 1.43E-14 | 1.19E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.98E-16 | 8.51E-17 | 1.19E-17 | 1.14E-16 | 2.77E-17 | 4.43E-17 | 4.11E-14 | 5.92E-14 | 4.91E-13 | 9.85E-16 |
| Bromoform | 7.51E-16 | 3.23E-16 | 4.50E-17 | 2.39E-16 | 5.79E-17 | 9.24E-17 | 1.82E-13 | 2.66E-13 | 2.58E-13 | 9.06E-17 |
| Carbon Tetrachloride | 5.38E-17 | 2.31E-17 | 3.23E-18 | 1.55E-16 | 3.77E-17 | 6.02E-17 | 7.59E-15 | 1.08E-14 | 1.43E-13 | 3.52E-16 |
| Chloroform | 8.86E-17 | 3.81E-17 | 5.31E-18 | 2.56E-17 | 6.21E-18 | 9.91E-18 | 3.55E-14 | 5.14E-14 | 2.49E-13 | 4.75E-16 |
| Dichloromethane | 1.59E-14 | 6.83E-15 | 9.53E-16 | 4.59E-15 | 1.11E-15 | 1.78E-15 | 1.61E-11 | 2.34E-11 | 1.60E-10 | 4.95E-14 |
| O-Terphenyl | 1.10E-12 | 4.71E-13 | 6.57E-14 | 6.33E-13 | 1.53E-13 | 2.45E-13 | 4.18E-12 | 5.88E-12 | 6.88E-13 | 2.59E-13 |
| Trichlorofluoromethane (FREON 11) | 4.09E-15 | 1.76E-15 | 2.46E-16 | 2.37E-15 | 5.73E-16 | 9.16E-16 | 8.50E-13 | 1.22E-12 | 9.31E-12 | 2.09E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.56E-13 | 6.69E-14 | 9.33E-15 | 4.49E-14 | 1.09E-14 | 1.74E-14 | 1.49E-12 | 2.18E-12 | 4.56E-12 | 6.54E-16 |
| 1,2,4-Trichlorobenzene | 3.67E-15 | 1.58E-15 | 2.20E-16 | 8.48E-16 | 2.06E-16 | 3.28E-16 | 1.02E-13 | 1.49E-13 | 7.95E-14 | 1.71E-16 |
| 1,2-Dichlorobenzene | 4.93E-14 | 2.12E-14 | 2.96E-15 | 1.43E-14 | 3.46E-15 | 5.52E-15 | 3.19E-12 | 4.57E-12 | 3.39E-11 | 1.09E-13 |
| Hexachlorobenzene | 6.68E-14 | 2.87E-14 | 4.01E-15 | 2.51E-14 | 6.08E-15 | 9.72E-15 | 3.32E-13 | 4.81E-13 | 4.76E-13 | 4.47E-15 |
| Pentachlorobenzene | 2.42E-12 | 1.04E-12 | 1.45E-13 | 6.99E-14 | 1.69E-14 | 2.71E-14 | 1.42E-11 | 2.07E-11 | 1.24E-12 | 1.56E-14 |
| Pentachlorophenol | 1.14E-12 | 4.89E-13 | 6.82E-14 | 3.61E-13 | 8.76E-14 | 1.40E-13 | 3.51E-10 | 1.07E-11 | 5.20E-10 | 5.93E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.12E-10 | 1.34E-10 | 1.87E-11 | 9.01E-11 | 2.18E-11 | 3.49E-11 | 3.16E-09 | 2.14E-09 | 2.62E-10 | -- |
| Arsenic | 3.09E-11 | 1.33E-11 | 1.85E-12 | 2.68E-12 | 6.50E-13 | 1.04E-12 | 2.89E-10 | 4.21E-11 | 6.92E-12 | -- |
| Barium | 2.19E-10 | 9.43E-11 | 1.32E-11 | 6.34E-11 | 1.54E-11 | 2.46E-11 | 2.35E-09 | 1.52E-09 | 9.21E-11 | -- |
| Beryllium | 1.96E-10 | 8.44E-11 | 1.18E-11 | 1.70E-11 | 4.13E-12 | 6.59E-12 | 2.81E-10 | 1.09E-10 | 8.24E-12 | -- |
| Boron | 1.21E-09 | 5.21E-10 | 7.28E-11 | 3.50E-10 | 8.50E-11 | 1.36E-10 | 4.97E-07 | 5.88E-07 | 6.79E-08 | -- |
| Cadmium | 1.29E-09 | 5.56E-10 | 7.76E-11 | 5.23E-10 | 1.27E-10 | 2.03E-10 | 2.82E-08 | 3.48E-08 | 2.32E-09 | -- |
| Chromium (Total) | 1.09E-10 | 4.68E-11 | 6.53E-12 | 1.26E-11 | 3.05E-12 | 4.87E-12 | 1.47E-09 | 1.14E-10 | 1.37E-11 | -- |
| Chromium VI | 1.55E-11 | 6.65E-12 | 9.29E-13 | 4.03E-12 | 9.76E-13 | 1.56E-12 | 2.10E-10 | 1.62E-11 | 1.95E-12 | -- |
| Cobalt | 6.59E-10 | 2.83E-10 | 3.95E-11 | 1.90E-10 | 4.62E-11 | 7.37E-11 | 4.43E-09 | 1.23E-09 | 1.29E-10 | -- |
| Lead | 3.01E-08 | 1.29E-08 | 1.80E-09 | 5.22E-10 | 1.26E-10 | 2.02E-10 | 9.12E-08 | 8.80E-08 | 7.58E-09 | -- |
| Mercury - Inorganic | 2.35E-09 | 1.01E-09 | 1.41E-10 | 3.39E-10 | 8.22E-11 | 1.31E-10 | 6.61E-09 | 7.32E-09 | 2.37E-09 | 2.03E-09 |
| Methyl Mercury | 7.87E-11 | 3.38E-11 | 4.72E-12 | 4.55E-11 | 1.10E-11 | 1.76E-11 | 7.92E-10 | 4.98E-10 | 2.18E-10 | 5.73E-10 |
| Nickel | 1.41E-08 | 6.07E-09 | 8.47E-10 | 1.43E-08 | 3.46E-09 | 5.53E-09 | 7.34E-08 | 2.83E-08 | 3.16E-09 | -- |
| Phosphorus | 4.23E-10 | 1.82E-10 | 2.54E-11 | 1.22E-10 | 2.96E-11 | 4.74E-11 | 2.47E-07 | 3.19E-07 | 4.15E-08 | -- |
| Selenium | 6.23E-12 | 2.68E-12 | 3.74E-13 | 3.60E-14 | 8.73E-15 | 1.40E-14 | 3.16E-10 | 2.61E-11 | 3.84E-12 | -- |
| Silver | 7.15E-11 | 3.07E-11 | 4.29E-12 | 5.16E-11 | 1.25E-11 | 2.00E-11 | 3.53E-09 | 2.12E-09 | 2.00E-10 | -- |
| Thallium | 6.86E-09 | 2.95E-09 | 4.11E-10 | 1.98E-10 | 4.81E-11 | 7.68E-11 | 2.51E-08 | 1.27E-09 | 7.68E-11 | -- |
| Tin | 7.43E-09 | 3.20E-09 | 4.46E-10 | 2.15E-09 | 5.21E-10 | 8.32E-10 | 2.08E-08 | 1.45E-08 | 1.25E-09 | -- |
| Vanadium | 7.10E-10 | 3.05E-10 | 4.26E-11 | 2.05E-10 | 4.97E-11 | 7.95E-11 | 1.07E-09 | 5.07E-10 | 5.96E-11 | -- |
| Zinc | 3.09E-08 | 1.33E-08 | 1.86E-09 | 1.79E-09 | 4.33E-10 | 6.92E-10 | 5.66E-07 | 6.45E-07 | 7.79E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Courtice Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.93E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.54E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.38E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.18E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.17E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.89E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.39E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.19E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.80E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.57E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.49E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.07E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.55E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.04E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.11E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Maple Grove**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 9.66E-14 | 4.15E-14 | 5.79E-15 | 5.58E-14 | 1.35E-14 | 2.16E-14 | 3.08E-12 | 4.49E-12 | 5.75E-13 | 5.31E-12 |
| Anthracene | 9.53E-14 | 4.10E-14 | 5.72E-15 | 7.98E-14 | 1.94E-14 | 3.09E-14 | 1.37E-12 | 1.99E-12 | 4.02E-15 | 4.50E-16 |
| Fluorene | 9.60E-14 | 4.13E-14 | 5.76E-15 | 5.55E-14 | 1.35E-14 | 2.15E-14 | 2.05E-12 | 2.99E-12 | 5.09E-15 | 1.69E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.80E-11 | 7.74E-12 | 1.08E-12 | 7.29E-12 | 1.77E-12 | 2.82E-12 | 1.81E-11 | 2.63E-11 | 4.83E-12 | 2.48E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.21E-14 | 5.20E-15 | 7.26E-16 | 1.05E-15 | 2.54E-16 | 4.06E-16 | 1.72E-14 | 1.18E-14 | 3.48E-15 | 5.43E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.52E-17 | 2.37E-17 | 3.31E-18 | 3.19E-17 | 7.74E-18 | 1.24E-17 | 1.16E-14 | 1.65E-14 | 1.37E-13 | 4.48E-16 |
| Bromoform | 2.09E-16 | 9.01E-17 | 1.26E-17 | 6.66E-17 | 1.61E-17 | 2.58E-17 | 5.09E-14 | 7.43E-14 | 7.21E-14 | 4.12E-17 |
| Carbon Tetrachloride | 1.50E-17 | 6.46E-18 | 9.01E-19 | 4.34E-17 | 1.05E-17 | 1.68E-17 | 2.15E-15 | 3.01E-15 | 4.00E-14 | 1.60E-16 |
| Chloroform | 2.47E-17 | 1.06E-17 | 1.48E-18 | 7.14E-18 | 1.73E-18 | 2.77E-18 | 9.95E-15 | 1.44E-14 | 6.96E-14 | 2.16E-16 |
| Dichloromethane | 4.43E-15 | 1.91E-15 | 2.66E-16 | 1.28E-15 | 3.11E-16 | 4.96E-16 | 4.49E-12 | 6.54E-12 | 4.47E-11 | 2.26E-14 |
| O-Terphenyl | 3.06E-13 | 1.31E-13 | 1.83E-14 | 1.77E-13 | 4.28E-14 | 6.84E-14 | 1.19E-12 | 1.64E-12 | 1.92E-13 | 1.18E-13 |
| Trichlorofluoromethane (FREON 11) | 1.14E-15 | 4.91E-16 | 6.85E-17 | 6.60E-16 | 1.60E-16 | 2.56E-16 | 2.39E-13 | 3.41E-13 | 2.60E-12 | 9.50E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.34E-14 | 1.87E-14 | 2.60E-15 | 1.25E-14 | 3.04E-15 | 4.86E-15 | 4.16E-13 | 6.08E-13 | 1.27E-12 | 2.98E-16 |
| 1,2,4-Trichlorobenzene | 1.02E-15 | 4.40E-16 | 6.14E-17 | 2.37E-16 | 5.74E-17 | 9.16E-17 | 2.85E-14 | 4.16E-14 | 2.22E-14 | 7.79E-17 |
| 1,2-Dichlorobenzene | 1.38E-14 | 5.92E-15 | 8.26E-16 | 3.98E-15 | 9.64E-16 | 1.54E-15 | 9.02E-13 | 1.28E-12 | 9.45E-12 | 4.98E-14 |
| Hexachlorobenzene | 1.86E-14 | 8.01E-15 | 1.12E-15 | 7.00E-15 | 1.70E-15 | 2.71E-15 | 9.31E-14 | 1.34E-13 | 1.33E-13 | 2.04E-15 |
| Pentachlorobenzene | 6.75E-13 | 2.90E-13 | 4.05E-14 | 1.95E-14 | 4.73E-15 | 7.55E-15 | 3.96E-12 | 5.78E-12 | 3.47E-13 | 7.09E-15 |
| Pentachlorophenol | 3.17E-13 | 1.36E-13 | 1.90E-14 | 1.01E-13 | 2.44E-14 | 3.91E-14 | 1.59E-10 | 2.98E-12 | 1.45E-10 | 2.70E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 7.60E-11 | 3.27E-11 | 4.56E-12 | 2.20E-11 | 5.32E-12 | 8.50E-12 | 7.76E-10 | 5.21E-10 | 6.38E-11 | -- |
| Arsenic | 7.54E-12 | 3.24E-12 | 4.52E-13 | 6.54E-13 | 1.58E-13 | 2.53E-13 | 7.12E-11 | 1.03E-11 | 1.69E-12 | -- |
| Barium | 5.35E-11 | 2.30E-11 | 3.21E-12 | 1.55E-11 | 3.75E-12 | 5.99E-12 | 5.77E-10 | 3.70E-10 | 2.25E-11 | -- |
| Beryllium | 4.79E-11 | 2.06E-11 | 2.87E-12 | 4.15E-12 | 1.01E-12 | 1.61E-12 | 6.91E-11 | 2.66E-11 | 2.01E-12 | -- |
| Boron | 2.96E-10 | 1.27E-10 | 1.77E-11 | 8.54E-11 | 2.07E-11 | 3.31E-11 | 1.22E-07 | 1.43E-07 | 1.66E-08 | -- |
| Cadmium | 3.15E-10 | 1.36E-10 | 1.89E-11 | 1.28E-10 | 3.09E-11 | 4.94E-11 | 6.88E-09 | 8.48E-09 | 5.65E-10 | -- |
| Chromium (Total) | 2.65E-11 | 1.14E-11 | 1.59E-12 | 3.07E-12 | 7.44E-13 | 1.19E-12 | 3.63E-10 | 2.79E-11 | 3.34E-12 | -- |
| Chromium VI | 3.77E-12 | 1.62E-12 | 2.26E-13 | 9.82E-13 | 2.38E-13 | 3.80E-13 | 5.16E-11 | 3.96E-12 | 4.75E-13 | -- |
| Cobalt | 1.61E-10 | 6.91E-11 | 9.64E-12 | 4.64E-11 | 1.13E-11 | 1.80E-11 | 1.09E-09 | 2.99E-10 | 3.15E-11 | -- |
| Lead | 7.33E-09 | 3.15E-09 | 4.40E-10 | 1.27E-10 | 3.08E-11 | 4.92E-11 | 2.23E-08 | 2.15E-08 | 1.85E-09 | -- |
| Mercury - Inorganic | 7.34E-10 | 3.16E-10 | 4.41E-11 | 1.06E-10 | 2.57E-11 | 4.11E-11 | 2.21E-09 | 2.29E-09 | 7.40E-10 | 9.26E-10 |
| Methyl Mercury | 1.92E-11 | 8.25E-12 | 1.15E-12 | 1.11E-11 | 2.69E-12 | 4.30E-12 | 2.64E-10 | 1.21E-10 | 5.32E-11 | 2.61E-10 |
| Nickel | 3.44E-09 | 1.48E-09 | 2.07E-10 | 3.48E-09 | 8.44E-10 | 1.35E-09 | 1.80E-08 | 6.89E-09 | 7.71E-10 | -- |
| Phosphorus | 1.03E-10 | 4.44E-11 | 6.19E-12 | 2.98E-11 | 7.23E-12 | 1.15E-11 | 6.02E-08 | 7.77E-08 | 1.01E-08 | -- |
| Selenium | 1.52E-12 | 6.53E-13 | 9.12E-14 | 8.78E-15 | 2.13E-15 | 3.40E-15 | 7.77E-11 | 6.37E-12 | 9.36E-13 | -- |
| Silver | 1.74E-11 | 7.49E-12 | 1.05E-12 | 1.26E-11 | 3.05E-12 | 4.88E-12 | 8.66E-10 | 5.17E-10 | 4.88E-11 | -- |
| Thallium | 1.67E-09 | 7.19E-10 | 1.00E-10 | 4.83E-11 | 1.17E-11 | 1.87E-11 | 6.17E-09 | 3.09E-10 | 1.87E-11 | -- |
| Tin | 1.81E-09 | 7.79E-10 | 1.09E-10 | 5.24E-10 | 1.27E-10 | 2.03E-10 | 5.10E-09 | 3.53E-09 | 3.04E-10 | -- |
| Vanadium | 1.73E-10 | 7.44E-11 | 1.04E-11 | 5.00E-11 | 1.21E-11 | 1.94E-11 | 2.62E-10 | 1.24E-10 | 1.45E-11 | -- |
| Zinc | 7.54E-09 | 3.24E-09 | 4.52E-10 | 4.36E-10 | 1.06E-10 | 1.69E-10 | 1.38E-07 | 1.57E-07 | 1.90E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Maple Grove**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.63E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.29E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.82E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.42E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.89E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.43E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.01E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.77E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.55E-11 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.39E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.33E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.68E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.43E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.46E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.65E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.73E-11 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.07E-09 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.40E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.97E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Oshawa Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.47E-13 | 6.31E-14 | 8.80E-15 | 8.48E-14 | 2.06E-14 | 3.28E-14 | 4.68E-12 | 6.82E-12 | 8.74E-13 | 8.07E-12 |
| Anthracene | 1.45E-13 | 6.22E-14 | 8.68E-15 | 1.21E-13 | 2.94E-14 | 4.70E-14 | 2.07E-12 | 3.02E-12 | 6.10E-15 | 6.88E-16 |
| Fluorene | 1.46E-13 | 6.27E-14 | 8.75E-15 | 8.43E-14 | 2.04E-14 | 3.27E-14 | 3.12E-12 | 4.55E-12 | 7.74E-15 | 2.59E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.73E-11 | 1.17E-11 | 1.64E-12 | 1.10E-11 | 2.68E-12 | 4.28E-12 | 2.75E-11 | 3.98E-11 | 7.32E-12 | 3.79E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.27E-14 | 9.76E-15 | 1.36E-15 | 1.97E-15 | 4.77E-16 | 7.62E-16 | 3.21E-14 | 2.22E-14 | 6.53E-15 | 8.29E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 8.39E-17 | 3.61E-17 | 5.03E-18 | 4.85E-17 | 1.18E-17 | 1.88E-17 | 1.76E-14 | 2.51E-14 | 2.08E-13 | 6.85E-16 |
| Bromoform | 3.18E-16 | 1.37E-16 | 1.91E-17 | 1.01E-16 | 2.45E-17 | 3.92E-17 | 7.74E-14 | 1.13E-13 | 1.10E-13 | 6.30E-17 |
| Carbon Tetrachloride | 2.28E-17 | 9.81E-18 | 1.37E-18 | 6.59E-17 | 1.60E-17 | 2.55E-17 | 3.27E-15 | 4.57E-15 | 6.07E-14 | 2.45E-16 |
| Chloroform | 3.76E-17 | 1.61E-17 | 2.25E-18 | 1.09E-17 | 2.63E-18 | 4.20E-18 | 1.51E-14 | 2.18E-14 | 1.06E-13 | 3.31E-16 |
| Dichloromethane | 6.73E-15 | 2.90E-15 | 4.04E-16 | 1.95E-15 | 4.72E-16 | 7.54E-16 | 6.82E-12 | 9.94E-12 | 6.79E-11 | 3.45E-14 |
| O-Terphenyl | 4.64E-13 | 2.00E-13 | 2.79E-14 | 2.68E-13 | 6.51E-14 | 1.04E-13 | 1.81E-12 | 2.49E-12 | 2.92E-13 | 1.80E-13 |
| Trichlorofluoromethane (FREON 11) | 1.74E-15 | 7.46E-16 | 1.04E-16 | 1.00E-15 | 2.43E-16 | 3.88E-16 | 3.64E-13 | 5.19E-13 | 3.95E-12 | 1.45E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.59E-14 | 2.83E-14 | 3.96E-15 | 1.91E-14 | 4.62E-15 | 7.38E-15 | 6.32E-13 | 9.23E-13 | 1.93E-12 | 4.55E-16 |
| 1,2,4-Trichlorobenzene | 1.55E-15 | 6.68E-16 | 9.33E-17 | 3.59E-16 | 8.71E-17 | 1.39E-16 | 4.33E-14 | 6.32E-14 | 3.37E-14 | 1.19E-16 |
| 1,2-Dichlorobenzene | 2.09E-14 | 8.99E-15 | 1.25E-15 | 6.04E-15 | 1.46E-15 | 2.34E-15 | 1.37E-12 | 1.94E-12 | 1.44E-11 | 7.60E-14 |
| Hexachlorobenzene | 2.83E-14 | 1.22E-14 | 1.70E-15 | 1.06E-14 | 2.58E-15 | 4.12E-15 | 1.42E-13 | 2.04E-13 | 2.02E-13 | 3.11E-15 |
| Pentachlorobenzene | 1.02E-12 | 4.41E-13 | 6.15E-14 | 2.96E-14 | 7.18E-15 | 1.15E-14 | 6.01E-12 | 8.77E-12 | 5.27E-13 | 1.08E-14 |
| Pentachlorophenol | 4.82E-13 | 2.07E-13 | 2.89E-14 | 1.53E-13 | 3.71E-14 | 5.93E-14 | 2.42E-10 | 4.53E-12 | 2.21E-10 | 4.12E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.43E-10 | 6.14E-11 | 8.57E-12 | 4.13E-11 | 1.00E-11 | 1.60E-11 | 1.52E-09 | 9.80E-10 | 1.20E-10 | -- |
| Arsenic | 1.42E-11 | 6.09E-12 | 8.50E-13 | 1.23E-12 | 2.98E-13 | 4.76E-13 | 1.43E-10 | 1.93E-11 | 3.17E-12 | -- |
| Barium | 1.01E-10 | 4.32E-11 | 6.03E-12 | 2.91E-11 | 7.04E-12 | 1.13E-11 | 1.13E-09 | 6.96E-10 | 4.22E-11 | -- |
| Beryllium | 8.99E-11 | 3.87E-11 | 5.40E-12 | 7.80E-12 | 1.89E-12 | 3.02E-12 | 1.37E-10 | 4.99E-11 | 3.78E-12 | -- |
| Boron | 5.56E-10 | 2.39E-10 | 3.33E-11 | 1.61E-10 | 3.89E-11 | 6.22E-11 | 2.32E-07 | 2.69E-07 | 3.11E-08 | -- |
| Cadmium | 5.93E-10 | 2.55E-10 | 3.56E-11 | 2.40E-10 | 5.81E-11 | 9.29E-11 | 1.31E-08 | 1.59E-08 | 1.06E-09 | -- |
| Chromium (Total) | 4.99E-11 | 2.14E-11 | 2.99E-12 | 5.77E-12 | 1.40E-12 | 2.23E-12 | 7.32E-10 | 5.23E-11 | 6.28E-12 | -- |
| Chromium VI | 7.09E-12 | 3.05E-12 | 4.26E-13 | 1.84E-12 | 4.47E-13 | 7.14E-13 | 1.04E-10 | 7.45E-12 | 8.93E-13 | -- |
| Cobalt | 3.02E-10 | 1.30E-10 | 1.81E-11 | 8.72E-11 | 2.12E-11 | 3.38E-11 | 2.18E-09 | 5.62E-10 | 5.91E-11 | -- |
| Lead | 1.38E-08 | 5.92E-09 | 8.26E-10 | 2.39E-10 | 5.79E-11 | 9.25E-11 | 4.31E-08 | 4.03E-08 | 3.47E-09 | -- |
| Mercury - Inorganic | 1.12E-09 | 4.81E-10 | 6.71E-11 | 1.62E-10 | 3.92E-11 | 6.26E-11 | 3.42E-09 | 3.49E-09 | 1.13E-09 | 1.41E-09 |
| Methyl Mercury | 3.60E-11 | 1.55E-11 | 2.16E-12 | 2.08E-11 | 5.05E-12 | 8.07E-12 | 4.46E-10 | 2.28E-10 | 9.99E-11 | 3.99E-10 |
| Nickel | 6.47E-09 | 2.78E-09 | 3.88E-10 | 6.54E-09 | 1.59E-09 | 2.53E-09 | 3.58E-08 | 1.30E-08 | 1.45E-09 | -- |
| Phosphorus | 1.94E-10 | 8.34E-11 | 1.16E-11 | 5.60E-11 | 1.36E-11 | 2.17E-11 | 1.14E-07 | 1.46E-07 | 1.90E-08 | -- |
| Selenium | 2.86E-12 | 1.23E-12 | 1.71E-13 | 1.65E-14 | 4.00E-15 | 6.39E-15 | 1.57E-10 | 1.20E-11 | 1.76E-12 | -- |
| Silver | 3.28E-11 | 1.41E-11 | 1.97E-12 | 2.37E-11 | 5.74E-12 | 9.17E-12 | 1.70E-09 | 9.72E-10 | 9.17E-11 | -- |
| Thallium | 3.14E-09 | 1.35E-09 | 1.89E-10 | 9.08E-11 | 2.20E-11 | 3.52E-11 | 1.25E-08 | 5.80E-10 | 3.52E-11 | -- |
| Tin | 3.40E-09 | 1.46E-09 | 2.04E-10 | 9.84E-10 | 2.39E-10 | 3.81E-10 | 9.98E-09 | 6.63E-09 | 5.72E-10 | -- |
| Vanadium | 3.25E-10 | 1.40E-10 | 1.95E-11 | 9.40E-11 | 2.28E-11 | 3.64E-11 | 5.19E-10 | 2.32E-10 | 2.73E-11 | -- |
| Zinc | 1.42E-08 | 6.09E-09 | 8.50E-10 | 8.19E-10 | 1.99E-10 | 3.17E-10 | 2.64E-07 | 2.96E-07 | 3.57E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Oshawa Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.08E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.52E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.03E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.01E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.90E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.47E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.91E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.85E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.62E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.10E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.38E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.34E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.14E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.74E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.05E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.80E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.75E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.39E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.39E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Port Darlington**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 6.69E-14 | 2.88E-14 | 4.01E-15 | 3.87E-14 | 9.37E-15 | 1.50E-14 | 2.14E-12 | 3.11E-12 | 3.98E-13 | 3.69E-12 |
| Anthracene | 6.60E-14 | 2.84E-14 | 3.96E-15 | 5.53E-14 | 1.34E-14 | 2.14E-14 | 9.46E-13 | 1.38E-12 | 2.78E-15 | 4.80E-16 |
| Fluorene | 6.65E-14 | 2.86E-14 | 3.99E-15 | 3.84E-14 | 9.32E-15 | 1.49E-14 | 1.42E-12 | 2.07E-12 | 3.53E-15 | 1.81E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.25E-11 | 5.37E-12 | 7.50E-13 | 5.06E-12 | 1.23E-12 | 1.96E-12 | 1.26E-11 | 1.82E-11 | 3.35E-12 | 2.65E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.86E-15 | 3.38E-15 | 4.72E-16 | 6.81E-16 | 1.65E-16 | 2.64E-16 | 1.31E-14 | 7.69E-15 | 2.26E-15 | 5.79E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.82E-17 | 1.64E-17 | 2.29E-18 | 2.21E-17 | 5.36E-18 | 8.56E-18 | 8.11E-15 | 1.14E-14 | 9.49E-14 | 4.78E-16 |
| Bromoform | 1.45E-16 | 6.24E-17 | 8.71E-18 | 4.61E-17 | 1.12E-17 | 1.79E-17 | 3.53E-14 | 5.15E-14 | 5.00E-14 | 4.40E-17 |
| Carbon Tetrachloride | 1.04E-17 | 4.47E-18 | 6.24E-19 | 3.01E-17 | 7.29E-18 | 1.16E-17 | 1.53E-15 | 2.08E-15 | 2.77E-14 | 1.71E-16 |
| Chloroform | 1.71E-17 | 7.36E-18 | 1.03E-18 | 4.95E-18 | 1.20E-18 | 1.92E-18 | 6.94E-15 | 9.94E-15 | 4.82E-14 | 2.31E-16 |
| Dichloromethane | 3.07E-15 | 1.32E-15 | 1.84E-16 | 8.87E-16 | 2.15E-16 | 3.44E-16 | 3.11E-12 | 4.53E-12 | 3.09E-11 | 2.41E-14 |
| O-Terphenyl | 2.12E-13 | 9.10E-14 | 1.27E-14 | 1.22E-13 | 2.97E-14 | 4.74E-14 | 8.51E-13 | 1.14E-12 | 1.33E-13 | 1.26E-13 |
| Trichlorofluoromethane (FREON 11) | 7.91E-16 | 3.40E-16 | 4.75E-17 | 4.57E-16 | 1.11E-16 | 1.77E-16 | 1.68E-13 | 2.37E-13 | 1.80E-12 | 1.01E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.01E-14 | 1.29E-14 | 1.80E-15 | 8.69E-15 | 2.11E-15 | 3.36E-15 | 2.88E-13 | 4.21E-13 | 8.82E-13 | 3.18E-16 |
| 1,2,4-Trichlorobenzene | 7.09E-16 | 3.05E-16 | 4.25E-17 | 1.64E-16 | 3.97E-17 | 6.35E-17 | 1.98E-14 | 2.88E-14 | 1.54E-14 | 8.31E-17 |
| 1,2-Dichlorobenzene | 9.53E-15 | 4.10E-15 | 5.72E-16 | 2.75E-15 | 6.68E-16 | 1.07E-15 | 6.36E-13 | 8.84E-13 | 6.55E-12 | 5.31E-14 |
| Hexachlorobenzene | 1.29E-14 | 5.55E-15 | 7.75E-16 | 4.85E-15 | 1.18E-15 | 1.88E-15 | 6.49E-14 | 9.30E-14 | 9.20E-14 | 2.17E-15 |
| Pentachlorobenzene | 4.67E-13 | 2.01E-13 | 2.80E-14 | 1.35E-14 | 3.27E-15 | 5.23E-15 | 2.74E-12 | 4.00E-12 | 2.40E-13 | 7.56E-15 |
| Pentachlorophenol | 2.20E-13 | 9.44E-14 | 1.32E-14 | 6.98E-14 | 1.69E-14 | 2.70E-14 | 1.68E-10 | 2.06E-12 | 1.01E-10 | 2.88E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 4.93E-11 | 2.12E-11 | 2.96E-12 | 1.42E-11 | 3.45E-12 | 5.52E-12 | 5.49E-10 | 3.38E-10 | 4.14E-11 | -- |
| Arsenic | 4.89E-12 | 2.10E-12 | 2.93E-13 | 4.24E-13 | 1.03E-13 | 1.64E-13 | 5.32E-11 | 6.66E-12 | 1.10E-12 | -- |
| Barium | 3.47E-11 | 1.49E-11 | 2.08E-12 | 1.00E-11 | 2.43E-12 | 3.88E-12 | 4.09E-10 | 2.40E-10 | 1.46E-11 | -- |
| Beryllium | 3.11E-11 | 1.34E-11 | 1.86E-12 | 2.69E-12 | 6.53E-13 | 1.04E-12 | 5.04E-11 | 1.72E-11 | 1.30E-12 | -- |
| Boron | 1.92E-10 | 8.25E-11 | 1.15E-11 | 5.54E-11 | 1.34E-11 | 2.15E-11 | 8.14E-08 | 9.30E-08 | 1.07E-08 | -- |
| Cadmium | 2.05E-10 | 8.80E-11 | 1.23E-11 | 8.28E-11 | 2.01E-11 | 3.21E-11 | 4.58E-09 | 5.50E-09 | 3.67E-10 | -- |
| Chromium (Total) | 1.72E-11 | 7.40E-12 | 1.03E-12 | 1.99E-12 | 4.82E-13 | 7.71E-13 | 2.73E-10 | 1.81E-11 | 2.17E-12 | -- |
| Chromium VI | 2.45E-12 | 1.05E-12 | 1.47E-13 | 6.37E-13 | 1.54E-13 | 2.47E-13 | 3.88E-11 | 2.57E-12 | 3.08E-13 | -- |
| Cobalt | 1.04E-10 | 4.48E-11 | 6.25E-12 | 3.01E-11 | 7.30E-12 | 1.17E-11 | 8.03E-10 | 1.94E-10 | 2.04E-11 | -- |
| Lead | 4.76E-09 | 2.05E-09 | 2.86E-10 | 8.25E-11 | 2.00E-11 | 3.20E-11 | 1.53E-08 | 1.39E-08 | 1.20E-09 | -- |
| Mercury - Inorganic | 6.89E-10 | 2.96E-10 | 4.13E-11 | 9.96E-11 | 2.41E-11 | 3.86E-11 | 2.12E-09 | 2.15E-09 | 6.94E-10 | 9.87E-10 |
| Methyl Mercury | 1.25E-11 | 5.36E-12 | 7.47E-13 | 7.20E-12 | 1.75E-12 | 2.79E-12 | 2.38E-10 | 7.88E-11 | 3.45E-11 | 2.78E-10 |
| Nickel | 2.23E-09 | 9.60E-10 | 1.34E-10 | 2.26E-09 | 5.48E-10 | 8.75E-10 | 1.31E-08 | 4.47E-09 | 5.00E-10 | -- |
| Phosphorus | 6.69E-11 | 2.88E-11 | 4.02E-12 | 1.93E-11 | 4.69E-12 | 7.49E-12 | 3.98E-08 | 5.04E-08 | 6.56E-09 | -- |
| Selenium | 9.86E-13 | 4.24E-13 | 5.91E-14 | 5.70E-15 | 1.38E-15 | 2.21E-15 | 5.84E-11 | 4.13E-12 | 6.07E-13 | -- |
| Silver | 1.13E-11 | 4.86E-12 | 6.78E-13 | 8.17E-12 | 1.98E-12 | 3.16E-12 | 6.18E-10 | 3.36E-10 | 3.16E-11 | -- |
| Thallium | 1.09E-09 | 4.67E-10 | 6.51E-11 | 3.14E-11 | 7.60E-12 | 1.21E-11 | 4.65E-09 | 2.00E-10 | 1.21E-11 | -- |
| Tin | 1.18E-09 | 5.06E-10 | 7.06E-11 | 3.40E-10 | 8.24E-11 | 1.32E-10 | 3.60E-09 | 2.29E-09 | 1.98E-10 | -- |
| Vanadium | 1.12E-10 | 4.83E-11 | 6.74E-12 | 3.25E-11 | 7.87E-12 | 1.26E-11 | 1.89E-10 | 8.02E-11 | 9.43E-12 | -- |
| Zinc | 4.89E-09 | 2.10E-09 | 2.94E-10 | 2.83E-10 | 6.86E-11 | 1.10E-10 | 9.30E-08 | 1.02E-07 | 1.23E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Port Darlington**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.49E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.52E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.66E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.13E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.17E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.15E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.54E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.76E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.54E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.14E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.71E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.89E-11 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.32E-10 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.22E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.64E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.14E-09 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.60E-10 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.69E-08 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.46E-11 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.53E-09 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.40E-09 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.99E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Solina Road**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.18E-13 | 9.35E-14 | 1.31E-14 | 1.26E-13 | 3.05E-14 | 4.87E-14 | 6.94E-12 | 1.01E-11 | 1.30E-12 | 1.20E-11 |
| Anthracene | 2.15E-13 | 9.23E-14 | 1.29E-14 | 1.80E-13 | 4.36E-14 | 6.97E-14 | 3.08E-12 | 4.48E-12 | 9.05E-15 | 8.33E-16 |
| Fluorene | 2.16E-13 | 9.30E-14 | 1.30E-14 | 1.25E-13 | 3.03E-14 | 4.84E-14 | 4.62E-12 | 6.75E-12 | 1.15E-14 | 3.13E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.06E-11 | 1.74E-11 | 2.43E-12 | 1.64E-11 | 3.98E-12 | 6.36E-12 | 4.08E-11 | 5.92E-11 | 1.09E-11 | 4.59E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.75E-14 | 1.18E-14 | 1.65E-15 | 2.39E-15 | 5.78E-16 | 9.24E-16 | 3.72E-14 | 2.69E-14 | 7.92E-15 | 1.00E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.24E-16 | 5.35E-17 | 7.46E-18 | 7.19E-17 | 1.74E-17 | 2.78E-17 | 2.59E-14 | 3.72E-14 | 3.09E-13 | 8.29E-16 |
| Bromoform | 4.72E-16 | 2.03E-16 | 2.83E-17 | 1.50E-16 | 3.64E-17 | 5.81E-17 | 1.15E-13 | 1.68E-13 | 1.63E-13 | 7.62E-17 |
| Carbon Tetrachloride | 3.38E-17 | 1.45E-17 | 2.03E-18 | 9.78E-17 | 2.37E-17 | 3.79E-17 | 4.81E-15 | 6.78E-15 | 9.01E-14 | 2.96E-16 |
| Chloroform | 5.57E-17 | 2.39E-17 | 3.34E-18 | 1.61E-17 | 3.90E-18 | 6.23E-18 | 2.24E-14 | 3.23E-14 | 1.57E-13 | 4.00E-16 |
| Dichloromethane | 9.99E-15 | 4.29E-15 | 5.99E-16 | 2.89E-15 | 7.00E-16 | 1.12E-15 | 1.01E-11 | 1.47E-11 | 1.01E-10 | 4.17E-14 |
| O-Terphenyl | 6.89E-13 | 2.96E-13 | 4.13E-14 | 3.98E-13 | 9.65E-14 | 1.54E-13 | 2.66E-12 | 3.70E-12 | 4.33E-13 | 2.18E-13 |
| Trichlorofluoromethane (FREON 11) | 2.57E-15 | 1.11E-15 | 1.54E-16 | 1.49E-15 | 3.61E-16 | 5.76E-16 | 5.37E-13 | 7.69E-13 | 5.85E-12 | 1.75E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 9.78E-14 | 4.20E-14 | 5.87E-15 | 2.83E-14 | 6.85E-15 | 1.09E-14 | 9.38E-13 | 1.37E-12 | 2.87E-12 | 5.51E-16 |
| 1,2,4-Trichlorobenzene | 2.31E-15 | 9.91E-16 | 1.38E-16 | 5.33E-16 | 1.29E-16 | 2.06E-16 | 6.42E-14 | 9.37E-14 | 5.00E-14 | 1.44E-16 |
| 1,2-Dichlorobenzene | 3.10E-14 | 1.33E-14 | 1.86E-15 | 8.96E-15 | 2.17E-15 | 3.47E-15 | 2.02E-12 | 2.87E-12 | 2.13E-11 | 9.20E-14 |
| Hexachlorobenzene | 4.20E-14 | 1.81E-14 | 2.52E-15 | 1.58E-14 | 3.83E-15 | 6.11E-15 | 2.09E-13 | 3.03E-13 | 2.99E-13 | 3.76E-15 |
| Pentachlorobenzene | 1.52E-12 | 6.53E-13 | 9.12E-14 | 4.39E-14 | 1.06E-14 | 1.70E-14 | 8.91E-12 | 1.30E-11 | 7.82E-13 | 1.31E-14 |
| Pentachlorophenol | 7.15E-13 | 3.07E-13 | 4.29E-14 | 2.27E-13 | 5.51E-14 | 8.80E-14 | 2.94E-10 | 6.72E-12 | 3.27E-10 | 4.99E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.73E-10 | 7.43E-11 | 1.04E-11 | 4.99E-11 | 1.21E-11 | 1.93E-11 | 1.72E-09 | 1.19E-09 | 1.45E-10 | -- |
| Arsenic | 1.71E-11 | 7.37E-12 | 1.03E-12 | 1.49E-12 | 3.60E-13 | 5.76E-13 | 1.56E-10 | 2.33E-11 | 3.84E-12 | -- |
| Barium | 1.22E-10 | 5.23E-11 | 7.30E-12 | 3.52E-11 | 8.52E-12 | 1.36E-11 | 1.28E-09 | 8.42E-10 | 5.11E-11 | -- |
| Beryllium | 1.09E-10 | 4.68E-11 | 6.53E-12 | 9.44E-12 | 2.29E-12 | 3.66E-12 | 1.52E-10 | 6.04E-11 | 4.57E-12 | -- |
| Boron | 6.72E-10 | 2.89E-10 | 4.03E-11 | 1.94E-10 | 4.71E-11 | 7.53E-11 | 2.74E-07 | 3.26E-07 | 3.76E-08 | -- |
| Cadmium | 7.17E-10 | 3.08E-10 | 4.30E-11 | 2.90E-10 | 7.04E-11 | 1.12E-10 | 1.55E-08 | 1.93E-08 | 1.29E-09 | -- |
| Chromium (Total) | 6.03E-11 | 2.59E-11 | 3.62E-12 | 6.97E-12 | 1.69E-12 | 2.70E-12 | 7.92E-10 | 6.33E-11 | 7.60E-12 | -- |
| Chromium VI | 8.58E-12 | 3.69E-12 | 5.15E-13 | 2.23E-12 | 5.41E-13 | 8.64E-13 | 1.13E-10 | 9.01E-12 | 1.08E-12 | -- |
| Cobalt | 3.65E-10 | 1.57E-10 | 2.19E-11 | 1.06E-10 | 2.56E-11 | 4.09E-11 | 2.39E-09 | 6.80E-10 | 7.16E-11 | -- |
| Lead | 1.67E-08 | 7.17E-09 | 1.00E-09 | 2.89E-10 | 7.01E-11 | 1.12E-10 | 5.00E-08 | 4.88E-08 | 4.20E-09 | -- |
| Mercury - Inorganic | 1.55E-09 | 6.68E-10 | 9.33E-11 | 2.25E-10 | 5.45E-11 | 8.70E-11 | 4.54E-09 | 4.85E-09 | 1.57E-09 | 1.71E-09 |
| Methyl Mercury | 4.36E-11 | 1.88E-11 | 2.62E-12 | 2.52E-11 | 6.12E-12 | 9.77E-12 | 5.32E-10 | 2.76E-10 | 1.21E-10 | 4.83E-10 |
| Nickel | 7.83E-09 | 3.36E-09 | 4.70E-10 | 7.92E-09 | 1.92E-09 | 3.07E-09 | 3.97E-08 | 1.57E-08 | 1.75E-09 | -- |
| Phosphorus | 2.35E-10 | 1.01E-10 | 1.41E-11 | 6.78E-11 | 1.64E-11 | 2.63E-11 | 1.36E-07 | 1.77E-07 | 2.30E-08 | -- |
| Selenium | 3.46E-12 | 1.49E-12 | 2.07E-13 | 2.00E-14 | 4.84E-15 | 7.74E-15 | 1.70E-10 | 1.45E-11 | 2.13E-12 | -- |
| Silver | 3.96E-11 | 1.70E-11 | 2.38E-12 | 2.86E-11 | 6.94E-12 | 1.11E-11 | 1.92E-09 | 1.18E-09 | 1.11E-10 | -- |
| Thallium | 3.80E-09 | 1.63E-09 | 2.28E-10 | 1.10E-10 | 2.66E-11 | 4.26E-11 | 1.35E-08 | 7.02E-10 | 4.26E-11 | -- |
| Tin | 4.12E-09 | 1.77E-09 | 2.47E-10 | 1.19E-09 | 2.89E-10 | 4.61E-10 | 1.13E-08 | 8.02E-09 | 6.92E-10 | -- |
| Vanadium | 3.94E-10 | 1.69E-10 | 2.36E-11 | 1.14E-10 | 2.76E-11 | 4.40E-11 | 5.79E-10 | 2.81E-10 | 3.30E-11 | -- |
| Zinc | 1.72E-08 | 7.37E-09 | 1.03E-09 | 9.91E-10 | 2.40E-10 | 3.84E-10 | 3.11E-07 | 3.58E-07 | 4.32E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Solina Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.18E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.68E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.18E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.37E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.63E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.03E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.51E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.41E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.95E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.39E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.64E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.17E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.36E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.31E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Tooley**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.87E-13 | 1.66E-13 | 2.32E-14 | 2.24E-13 | 5.42E-14 | 8.66E-14 | 1.23E-11 | 1.80E-11 | 2.30E-12 | 2.12E-11 |
| Anthracene | 3.81E-13 | 1.64E-13 | 2.29E-14 | 3.20E-13 | 7.75E-14 | 1.24E-13 | 5.47E-12 | 7.97E-12 | 1.61E-14 | 9.16E-16 |
| Fluorene | 3.85E-13 | 1.65E-13 | 2.31E-14 | 2.22E-13 | 5.39E-14 | 8.61E-14 | 8.21E-12 | 1.20E-11 | 2.04E-14 | 3.44E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.19E-11 | 3.09E-11 | 4.31E-12 | 2.91E-11 | 7.05E-12 | 1.13E-11 | 7.20E-11 | 1.05E-10 | 1.93E-11 | 5.05E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.12E-14 | 2.20E-14 | 3.07E-15 | 4.43E-15 | 1.08E-15 | 1.72E-15 | 6.42E-14 | 5.01E-14 | 1.47E-14 | 1.10E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.21E-16 | 9.51E-17 | 1.33E-17 | 1.28E-16 | 3.10E-17 | 4.95E-17 | 4.58E-14 | 6.61E-14 | 5.49E-13 | 9.12E-16 |
| Bromoform | 8.39E-16 | 3.61E-16 | 5.03E-17 | 2.67E-16 | 6.47E-17 | 1.03E-16 | 2.04E-13 | 2.98E-13 | 2.89E-13 | 8.38E-17 |
| Carbon Tetrachloride | 6.02E-17 | 2.59E-17 | 3.61E-18 | 1.74E-16 | 4.21E-17 | 6.73E-17 | 8.44E-15 | 1.21E-14 | 1.60E-13 | 3.26E-16 |
| Chloroform | 9.90E-17 | 4.26E-17 | 5.94E-18 | 2.86E-17 | 6.94E-18 | 1.11E-17 | 3.96E-14 | 5.75E-14 | 2.79E-13 | 4.40E-16 |
| Dichloromethane | 1.78E-14 | 7.63E-15 | 1.07E-15 | 5.13E-15 | 1.24E-15 | 1.99E-15 | 1.80E-11 | 2.62E-11 | 1.79E-10 | 4.59E-14 |
| O-Terphenyl | 1.22E-12 | 5.26E-13 | 7.34E-14 | 7.08E-13 | 1.72E-13 | 2.74E-13 | 4.64E-12 | 6.58E-12 | 7.70E-13 | 2.40E-13 |
| Trichlorofluoromethane (FREON 11) | 4.58E-15 | 1.97E-15 | 2.74E-16 | 2.64E-15 | 6.41E-16 | 1.02E-15 | 9.48E-13 | 1.37E-12 | 1.04E-11 | 1.93E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.74E-13 | 7.47E-14 | 1.04E-14 | 5.02E-14 | 1.22E-14 | 1.95E-14 | 1.67E-12 | 2.43E-12 | 5.10E-12 | 6.06E-16 |
| 1,2,4-Trichlorobenzene | 4.10E-15 | 1.76E-15 | 2.46E-16 | 9.48E-16 | 2.30E-16 | 3.67E-16 | 1.14E-13 | 1.67E-13 | 8.89E-14 | 1.58E-16 |
| 1,2-Dichlorobenzene | 5.51E-14 | 2.37E-14 | 3.31E-15 | 1.59E-14 | 3.86E-15 | 6.17E-15 | 3.56E-12 | 5.11E-12 | 3.79E-11 | 1.01E-13 |
| Hexachlorobenzene | 7.47E-14 | 3.21E-14 | 4.48E-15 | 2.81E-14 | 6.80E-15 | 1.09E-14 | 3.71E-13 | 5.38E-13 | 5.32E-13 | 4.14E-15 |
| Pentachlorobenzene | 2.70E-12 | 1.16E-12 | 1.62E-13 | 7.81E-14 | 1.89E-14 | 3.02E-14 | 1.58E-11 | 2.31E-11 | 1.39E-12 | 1.44E-14 |
| Pentachlorophenol | 1.27E-12 | 5.46E-13 | 7.62E-14 | 4.04E-13 | 9.79E-14 | 1.56E-13 | 3.27E-10 | 1.19E-11 | 5.82E-10 | 5.49E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.22E-10 | 1.39E-10 | 1.93E-11 | 9.32E-11 | 2.26E-11 | 3.61E-11 | 3.17E-09 | 2.21E-09 | 2.71E-10 | -- |
| Arsenic | 3.20E-11 | 1.38E-11 | 1.92E-12 | 2.77E-12 | 6.72E-13 | 1.07E-12 | 2.83E-10 | 4.35E-11 | 7.16E-12 | -- |
| Barium | 2.27E-10 | 9.76E-11 | 1.36E-11 | 6.56E-11 | 1.59E-11 | 2.54E-11 | 2.35E-09 | 1.57E-09 | 9.53E-11 | -- |
| Beryllium | 2.03E-10 | 8.72E-11 | 1.22E-11 | 1.76E-11 | 4.26E-12 | 6.81E-12 | 2.78E-10 | 1.13E-10 | 8.52E-12 | -- |
| Boron | 1.26E-09 | 5.40E-10 | 7.53E-11 | 3.63E-10 | 8.79E-11 | 1.40E-10 | 5.09E-07 | 6.09E-07 | 7.03E-08 | -- |
| Cadmium | 1.34E-09 | 5.75E-10 | 8.03E-11 | 5.41E-10 | 1.31E-10 | 2.10E-10 | 2.89E-08 | 3.60E-08 | 2.40E-09 | -- |
| Chromium (Total) | 1.13E-10 | 4.84E-11 | 6.76E-12 | 1.30E-11 | 3.16E-12 | 5.04E-12 | 1.44E-09 | 1.18E-10 | 1.42E-11 | -- |
| Chromium VI | 1.60E-11 | 6.89E-12 | 9.61E-13 | 4.17E-12 | 1.01E-12 | 1.61E-12 | 2.05E-10 | 1.68E-11 | 2.02E-12 | -- |
| Cobalt | 6.82E-10 | 2.93E-10 | 4.09E-11 | 1.97E-10 | 4.78E-11 | 7.63E-11 | 4.36E-09 | 1.27E-09 | 1.34E-10 | -- |
| Lead | 3.11E-08 | 1.34E-08 | 1.86E-09 | 5.39E-10 | 1.31E-10 | 2.09E-10 | 9.24E-08 | 9.09E-08 | 7.83E-09 | -- |
| Mercury - Inorganic | 2.48E-09 | 1.06E-09 | 1.49E-10 | 3.58E-10 | 8.67E-11 | 1.39E-10 | 6.78E-09 | 7.72E-09 | 2.49E-09 | 1.88E-09 |
| Methyl Mercury | 8.13E-11 | 3.50E-11 | 4.88E-12 | 4.70E-11 | 1.14E-11 | 1.82E-11 | 7.75E-10 | 5.14E-10 | 2.25E-10 | 5.31E-10 |
| Nickel | 1.46E-08 | 6.28E-09 | 8.76E-10 | 1.48E-08 | 3.58E-09 | 5.72E-09 | 7.26E-08 | 2.92E-08 | 3.27E-09 | -- |
| Phosphorus | 4.38E-10 | 1.88E-10 | 2.63E-11 | 1.27E-10 | 3.07E-11 | 4.90E-11 | 2.53E-07 | 3.30E-07 | 4.29E-08 | -- |
| Selenium | 6.45E-12 | 2.77E-12 | 3.87E-13 | 3.73E-14 | 9.04E-15 | 1.44E-14 | 3.08E-10 | 2.71E-11 | 3.97E-12 | -- |
| Silver | 7.40E-11 | 3.18E-11 | 4.44E-12 | 5.34E-11 | 1.30E-11 | 2.07E-11 | 3.53E-09 | 2.20E-09 | 2.07E-10 | -- |
| Thallium | 7.09E-09 | 3.05E-09 | 4.26E-10 | 2.05E-10 | 4.97E-11 | 7.94E-11 | 2.44E-08 | 1.31E-09 | 7.94E-11 | -- |
| Tin | 7.68E-09 | 3.30E-09 | 4.61E-10 | 2.22E-09 | 5.38E-10 | 8.60E-10 | 2.09E-08 | 1.50E-08 | 1.29E-09 | -- |
| Vanadium | 7.34E-10 | 3.15E-10 | 4.40E-11 | 2.12E-10 | 5.14E-11 | 8.21E-11 | 1.06E-09 | 5.23E-10 | 6.16E-11 | -- |
| Zinc | 3.20E-08 | 1.38E-08 | 1.92E-09 | 1.85E-09 | 4.48E-10 | 7.16E-10 | 5.77E-07 | 6.67E-07 | 8.06E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Tooley**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.48E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.51E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.62E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.92E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.67E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.45E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.28E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.86E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.46E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.01E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.54E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.10E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.38E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.27E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.13E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.67E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.22E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.08E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Farmer**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 4.82E-13 | 2.07E-13 | 2.89E-14 | 2.79E-13 | 6.76E-14 | 1.08E-13 | 2.77E-11 | 4.96E-11 | 4.69E-12 | 7.49E-11 |
| Anthracene | 4.76E-13 | 2.04E-13 | 2.85E-14 | 3.99E-13 | 9.66E-14 | 1.54E-13 | 1.23E-11 | 2.20E-11 | 3.27E-14 | 2.92E-15 |
| Fluorene | 4.80E-13 | 2.06E-13 | 2.88E-14 | 2.77E-13 | 6.72E-14 | 1.07E-13 | 1.85E-11 | 3.31E-11 | 4.15E-14 | 1.10E-14 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 8.96E-11 | 3.85E-11 | 5.38E-12 | 3.63E-11 | 8.79E-12 | 1.40E-11 | 1.62E-10 | 2.89E-10 | 3.92E-11 | 1.61E-12 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.09E-14 | 3.05E-14 | 4.25E-15 | 6.14E-15 | 1.49E-15 | 2.38E-15 | 1.57E-13 | 1.54E-13 | 3.33E-14 | 3.52E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.76E-16 | 1.19E-16 | 1.66E-17 | 1.59E-16 | 3.87E-17 | 6.17E-17 | 1.03E-13 | 1.83E-13 | 1.12E-12 | 2.90E-15 |
| Bromoform | 1.05E-15 | 4.50E-16 | 6.28E-17 | 3.33E-16 | 8.07E-17 | 1.29E-16 | 4.58E-13 | 8.22E-13 | 5.88E-13 | 2.67E-16 |
| Carbon Tetrachloride | 7.50E-17 | 3.22E-17 | 4.50E-18 | 2.17E-16 | 5.26E-17 | 8.40E-17 | 1.89E-14 | 3.33E-14 | 3.26E-13 | 1.04E-15 |
| Chloroform | 1.24E-16 | 5.31E-17 | 7.41E-18 | 3.57E-17 | 8.65E-18 | 1.38E-17 | 8.90E-14 | 1.59E-13 | 5.68E-13 | 1.40E-15 |
| Dichloromethane | 2.21E-14 | 9.52E-15 | 1.33E-15 | 6.40E-15 | 1.55E-15 | 2.48E-15 | 4.04E-11 | 7.23E-11 | 3.64E-10 | 1.46E-13 |
| O-Terphenyl | 1.53E-12 | 6.56E-13 | 9.16E-14 | 8.82E-13 | 2.14E-13 | 3.42E-13 | 1.04E-11 | 1.81E-11 | 1.57E-12 | 7.63E-13 |
| Trichlorofluoromethane (FREON 11) | 5.71E-15 | 2.45E-15 | 3.42E-16 | 3.30E-15 | 7.99E-16 | 1.28E-15 | 2.13E-12 | 3.78E-12 | 2.12E-11 | 6.15E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.17E-13 | 9.32E-14 | 1.30E-14 | 6.27E-14 | 1.52E-14 | 2.43E-14 | 3.75E-12 | 6.72E-12 | 1.04E-11 | 1.93E-15 |
| 1,2,4-Trichlorobenzene | 5.11E-15 | 2.20E-15 | 3.07E-16 | 1.18E-15 | 2.87E-16 | 4.58E-16 | 2.57E-13 | 4.60E-13 | 1.81E-13 | 5.04E-16 |
| 1,2-Dichlorobenzene | 6.88E-14 | 2.96E-14 | 4.13E-15 | 1.99E-14 | 4.82E-15 | 7.70E-15 | 7.98E-12 | 1.41E-11 | 7.71E-11 | 3.22E-13 |
| Hexachlorobenzene | 9.31E-14 | 4.00E-14 | 5.59E-15 | 3.50E-14 | 8.48E-15 | 1.35E-14 | 8.33E-13 | 1.49E-12 | 1.08E-12 | 1.32E-14 |
| Pentachlorobenzene | 3.37E-12 | 1.45E-12 | 2.02E-13 | 9.74E-14 | 2.36E-14 | 3.77E-14 | 3.56E-11 | 6.39E-11 | 2.83E-12 | 4.59E-14 |
| Pentachlorophenol | 1.58E-12 | 6.81E-13 | 9.51E-14 | 5.04E-13 | 1.22E-13 | 1.95E-13 | 6.65E-10 | 3.30E-11 | 1.18E-09 | 1.75E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 4.47E-10 | 1.92E-10 | 2.68E-11 | 1.29E-10 | 3.13E-11 | 5.00E-11 | 7.87E-09 | 6.78E-09 | 6.12E-10 | -- |
| Arsenic | 4.43E-11 | 1.91E-11 | 2.66E-12 | 3.84E-12 | 9.32E-13 | 1.49E-12 | 7.01E-10 | 1.34E-10 | 1.62E-11 | -- |
| Barium | 3.14E-10 | 1.35E-10 | 1.89E-11 | 9.09E-11 | 2.20E-11 | 3.52E-11 | 5.84E-09 | 4.82E-09 | 2.15E-10 | -- |
| Beryllium | 2.81E-10 | 1.21E-10 | 1.69E-11 | 2.44E-11 | 5.91E-12 | 9.44E-12 | 6.89E-10 | 3.45E-10 | 1.93E-11 | -- |
| Boron | 1.74E-09 | 7.48E-10 | 1.04E-10 | 5.03E-10 | 1.22E-10 | 1.95E-10 | 1.27E-06 | 1.87E-06 | 1.59E-07 | -- |
| Cadmium | 1.85E-09 | 7.97E-10 | 1.11E-10 | 7.50E-10 | 1.82E-10 | 2.91E-10 | 7.19E-08 | 1.10E-07 | 5.42E-09 | -- |
| Chromium (Total) | 1.56E-10 | 6.71E-11 | 9.36E-12 | 1.80E-11 | 4.37E-12 | 6.98E-12 | 3.56E-09 | 3.62E-10 | 3.21E-11 | -- |
| Chromium VI | 2.22E-11 | 9.54E-12 | 1.33E-12 | 5.77E-12 | 1.40E-12 | 2.24E-12 | 5.06E-10 | 5.16E-11 | 4.56E-12 | -- |
| Cobalt | 9.44E-10 | 4.06E-10 | 5.67E-11 | 2.73E-10 | 6.62E-11 | 1.06E-10 | 1.08E-08 | 3.89E-09 | 3.02E-10 | -- |
| Lead | 4.31E-08 | 1.85E-08 | 2.58E-09 | 7.47E-10 | 1.81E-10 | 2.89E-10 | 2.30E-07 | 2.79E-07 | 1.77E-08 | -- |
| Mercury - Inorganic | 2.59E-09 | 1.11E-09 | 1.55E-10 | 3.74E-10 | 9.07E-11 | 1.45E-10 | 1.32E-08 | 1.79E-08 | 4.26E-09 | 5.99E-09 |
| Methyl Mercury | 1.13E-10 | 4.84E-11 | 6.76E-12 | 6.51E-11 | 1.58E-11 | 2.52E-11 | 1.79E-09 | 1.58E-09 | 5.10E-10 | 1.69E-09 |
| Nickel | 2.02E-08 | 8.70E-09 | 1.21E-09 | 2.05E-08 | 4.96E-09 | 7.92E-09 | 1.80E-07 | 8.97E-08 | 7.39E-09 | -- |
| Phosphorus | 6.07E-10 | 2.61E-10 | 3.64E-11 | 1.75E-10 | 4.25E-11 | 6.79E-11 | 6.32E-07 | 1.01E-06 | 9.70E-08 | -- |
| Selenium | 8.94E-12 | 3.84E-12 | 5.36E-13 | 5.17E-14 | 1.25E-14 | 2.00E-14 | 7.62E-10 | 8.30E-11 | 8.98E-12 | -- |
| Silver | 1.02E-10 | 4.41E-11 | 6.15E-12 | 7.40E-11 | 1.80E-11 | 2.87E-11 | 8.75E-09 | 6.73E-09 | 4.68E-10 | -- |
| Thallium | 9.83E-09 | 4.22E-09 | 5.90E-10 | 2.84E-10 | 6.89E-11 | 1.10E-10 | 6.04E-08 | 4.01E-09 | 1.80E-10 | -- |
| Tin | 1.06E-08 | 4.58E-09 | 6.39E-10 | 3.08E-09 | 7.46E-10 | 1.19E-09 | 5.18E-08 | 4.59E-08 | 2.92E-09 | -- |
| Vanadium | 1.02E-09 | 4.37E-10 | 6.10E-11 | 2.94E-10 | 7.12E-11 | 1.14E-10 | 2.63E-09 | 1.61E-09 | 1.39E-10 | -- |
| Zinc | 4.43E-08 | 1.91E-08 | 2.66E-09 | 2.56E-09 | 6.21E-10 | 9.92E-10 | 1.44E-06 | 2.05E-06 | 1.82E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 140,000 tpy**
**Farmer**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | 3.73E-13 | 7.83E-13 | 4.63E-14 | 9.99E-14 | 9.22E-14 | -- | 1.59E-10 |
| Anthracene | -- | -- | -- | 2.77E-13 | 5.36E-13 | 3.78E-14 | 8.69E-14 | 8.01E-14 | -- | 3.67E-11 |
| Fluorene | -- | -- | -- | 3.33E-13 | 6.69E-13 | 4.24E-14 | 9.38E-14 | 8.66E-14 | -- | 5.40E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | 1.70E-09 | 2.14E-09 | 3.17E-10 | 8.45E-12 | 7.79E-12 | -- | 4.86E-09 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | 2.25E-12 | 3.98E-12 | 2.27E-13 | 5.53E-15 | 5.10E-15 | -- | 6.97E-12 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | 1.01E-10 | 1.36E-10 | 3.68E-12 | 4.73E-14 | 4.37E-14 | -- | 2.42E-10 |
| Bromoform | -- | -- | -- | 3.80E-09 | 5.09E-09 | 1.38E-10 | 1.78E-12 | 1.64E-12 | -- | 9.04E-09 |
| Carbon Tetrachloride | -- | -- | -- | 4.37E-11 | 5.86E-11 | 1.59E-12 | 2.04E-14 | 1.88E-14 | -- | 1.04E-10 |
| Chloroform | -- | -- | -- | 1.95E-11 | 2.61E-11 | 7.07E-13 | 9.10E-15 | 8.40E-15 | -- | 4.71E-11 |
| Dichloromethane | -- | -- | -- | 2.14E-09 | 2.87E-09 | 7.78E-11 | 1.00E-12 | 9.24E-13 | -- | 5.57E-09 |
| O-Terphenyl | -- | -- | -- | 1.10E-10 | 1.72E-10 | 9.19E-12 | 2.20E-13 | 2.03E-13 | -- | 3.26E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | 1.16E-08 | 1.55E-08 | 4.19E-10 | 5.40E-12 | 4.98E-12 | -- | 2.75E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | 3.34E-11 | 4.72E-11 | 1.78E-12 | 3.83E-14 | 3.54E-14 | -- | 1.04E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | 2.04E-11 | 2.75E-11 | 7.57E-13 | 9.94E-15 | 9.17E-15 | -- | 4.96E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | 4.79E-10 | 6.45E-10 | 1.76E-11 | 2.30E-13 | 2.12E-13 | -- | 1.24E-09 |
| Hexachlorobenzene | -- | -- | -- | 3.33E-11 | 4.54E-11 | 1.41E-12 | 2.14E-14 | 1.97E-14 | -- | 8.38E-11 |
| Pentachlorobenzene | -- | -- | -- | 1.52E-10 | 2.36E-10 | 2.17E-11 | 5.32E-13 | 4.90E-13 | -- | 5.18E-10 |
| Pentachlorophenol | -- | -- | -- | 1.68E-10 | 3.41E-10 | 3.25E-12 | 6.99E-16 | 6.45E-16 | -- | 4.14E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | 2.59E-09 | 2.41E-09 | 1.16E-10 | 1.64E-12 | 1.52E-12 | -- | 2.13E-08 |
| Arsenic | -- | -- | -- | 4.86E-10 | 1.34E-10 | 1.74E-11 | 2.68E-13 | 2.47E-13 | -- | 1.56E-09 |
| Barium | -- | -- | -- | 2.59E-10 | 5.58E-09 | 1.09E-11 | 1.55E-13 | 1.43E-13 | -- | 1.73E-08 |
| Beryllium | -- | -- | -- | 3.35E-10 | 2.32E-12 | 3.35E-11 | 8.17E-13 | 7.54E-13 | -- | 1.88E-09 |
| Boron | -- | -- | -- | 1.26E-07 | 2.63E-07 | 5.91E-09 | 7.72E-11 | 7.12E-11 | -- | 3.69E-06 |
| Cadmium | -- | -- | -- | 1.47E-09 | 7.52E-10 | 9.88E-11 | 1.20E-09 | 4.57E-11 | -- | 1.95E-07 |
| Chromium (Total) | -- | -- | -- | 6.45E-09 | 1.63E-08 | 1.92E-10 | 2.63E-12 | 2.43E-12 | -- | 2.72E-08 |
| Chromium VI | -- | -- | -- | 9.18E-10 | 2.32E-09 | 2.74E-11 | 3.74E-13 | 3.45E-13 | -- | 3.87E-09 |
| Cobalt | -- | -- | -- | 6.98E-08 | 1.32E-07 | 3.16E-09 | 5.82E-11 | 5.37E-11 | -- | 2.22E-07 |
| Lead | -- | -- | -- | 2.06E-08 | 1.42E-07 | 1.81E-09 | 4.01E-11 | 3.70E-11 | -- | 7.56E-07 |
| Mercury - Inorganic | -- | -- | -- | 8.92E-09 | 2.44E-08 | 8.42E-12 | 2.61E-10 | 4.22E-10 | -- | 7.97E-08 |
| Methyl Mercury | -- | -- | -- | 1.26E-10 | 4.47E-10 | 6.49E-14 | 1.84E-12 | 2.97E-12 | -- | 6.42E-09 |
| Nickel | -- | -- | -- | 3.59E-07 | 5.28E-07 | 1.90E-08 | 3.70E-10 | 3.41E-10 | -- | 1.25E-06 |
| Phosphorus | -- | -- | -- | 2.65E-06 | 5.73E-06 | 1.79E-07 | 3.15E-09 | 2.91E-09 | -- | 1.03E-05 |
| Selenium | -- | -- | -- | 5.36E-10 | 1.31E-08 | 7.35E-10 | 4.39E-11 | 7.09E-11 | -- | 1.54E-08 |
| Silver | -- | -- | -- | 6.43E-09 | 4.10E-07 | 1.88E-10 | 1.74E-12 | 1.60E-12 | -- | 4.32E-07 |
| Thallium | -- | -- | -- | 9.69E-07 | 4.18E-07 | 5.42E-08 | 1.14E-09 | 1.05E-09 | -- | 1.52E-06 |
| Tin | -- | -- | -- | 1.41E-06 | 2.45E-06 | 1.15E-07 | 2.58E-09 | 2.38E-09 | -- | 4.10E-06 |
| Vanadium | -- | -- | -- | 2.85E-09 | 4.54E-09 | 3.01E-10 | 7.49E-12 | 6.91E-12 | -- | 1.41E-08 |
| Zinc | -- | -- | -- | 2.24E-08 | 7.59E-08 | 1.36E-09 | 2.26E-09 | 3.65E-09 | -- | 5.48E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Bowmanville Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.10E-13 | 4.71E-14 | 6.58E-15 | 6.34E-14 | 1.54E-14 | 2.45E-14 | 3.50E-12 | 5.09E-12 | 6.53E-13 | 6.03E-12 |
| Anthracene | 1.08E-13 | 4.65E-14 | 6.49E-15 | 9.06E-14 | 2.20E-14 | 3.51E-14 | 1.55E-12 | 2.26E-12 | 4.56E-15 | 4.60E-16 |
| Fluorene | 1.09E-13 | 4.69E-14 | 6.54E-15 | 6.30E-14 | 1.53E-14 | 2.44E-14 | 2.33E-12 | 3.40E-12 | 5.78E-15 | 1.73E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.05E-11 | 8.80E-12 | 1.23E-12 | 8.28E-12 | 2.01E-12 | 3.21E-12 | 2.06E-11 | 2.99E-11 | 5.49E-12 | 2.53E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.28E-14 | 9.80E-15 | 1.37E-15 | 1.98E-15 | 4.79E-16 | 7.65E-16 | 3.19E-14 | 2.23E-14 | 6.56E-15 | 5.55E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.27E-17 | 2.69E-17 | 3.76E-18 | 3.62E-17 | 8.78E-18 | 1.40E-17 | 1.31E-14 | 1.87E-14 | 1.55E-13 | 4.58E-16 |
| Bromoform | 1.75E-16 | 7.51E-17 | 1.05E-17 | 5.55E-17 | 1.35E-17 | 2.15E-17 | 4.24E-14 | 6.20E-14 | 6.01E-14 | 3.09E-17 |
| Carbon Tetrachloride | 1.25E-17 | 5.38E-18 | 7.51E-19 | 3.62E-17 | 8.77E-18 | 1.40E-17 | 1.79E-15 | 2.51E-15 | 3.33E-14 | 1.20E-16 |
| Chloroform | 2.81E-17 | 1.21E-17 | 1.68E-18 | 8.11E-18 | 1.97E-18 | 3.14E-18 | 1.13E-14 | 1.63E-14 | 7.90E-14 | 2.21E-16 |
| Dichloromethane | 5.03E-15 | 2.16E-15 | 3.02E-16 | 1.45E-15 | 3.52E-16 | 5.63E-16 | 5.09E-12 | 7.42E-12 | 5.07E-11 | 2.30E-14 |
| O-Terphenyl | 3.47E-13 | 1.49E-13 | 2.08E-14 | 2.00E-13 | 4.86E-14 | 7.76E-14 | 1.35E-12 | 1.86E-12 | 2.18E-13 | 1.20E-13 |
| Trichlorofluoromethane (FREON 11) | 1.30E-15 | 5.57E-16 | 7.78E-17 | 7.49E-16 | 1.82E-16 | 2.90E-16 | 2.71E-13 | 3.88E-13 | 2.95E-12 | 9.70E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.93E-14 | 2.12E-14 | 2.96E-15 | 1.42E-14 | 3.45E-15 | 5.51E-15 | 4.72E-13 | 6.90E-13 | 1.45E-12 | 3.04E-16 |
| 1,2,4-Trichlorobenzene | 1.16E-15 | 4.99E-16 | 6.97E-17 | 2.69E-16 | 6.51E-17 | 1.04E-16 | 3.24E-14 | 4.72E-14 | 2.52E-14 | 7.96E-17 |
| 1,2-Dichlorobenzene | 1.56E-14 | 6.72E-15 | 9.37E-16 | 4.51E-15 | 1.09E-15 | 1.75E-15 | 1.02E-12 | 1.45E-12 | 1.07E-11 | 5.09E-14 |
| Hexachlorobenzene | 2.12E-14 | 9.10E-15 | 1.27E-15 | 7.95E-15 | 1.93E-15 | 3.08E-15 | 1.06E-13 | 1.52E-13 | 1.51E-13 | 2.08E-15 |
| Pentachlorobenzene | 7.66E-13 | 3.29E-13 | 4.59E-14 | 2.21E-14 | 5.36E-15 | 8.57E-15 | 4.49E-12 | 6.56E-12 | 3.94E-13 | 7.24E-15 |
| Pentachlorophenol | 3.60E-13 | 1.55E-13 | 2.16E-14 | 1.14E-13 | 2.77E-14 | 4.43E-14 | 1.62E-10 | 3.38E-12 | 1.65E-10 | 2.76E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.76E-10 | 1.19E-10 | 1.66E-11 | 7.98E-11 | 1.93E-11 | 3.09E-11 | 3.12E-09 | 1.89E-09 | 2.32E-10 | -- |
| Arsenic | 2.74E-11 | 1.18E-11 | 1.64E-12 | 2.37E-12 | 5.76E-13 | 9.20E-13 | 3.04E-10 | 3.73E-11 | 6.13E-12 | -- |
| Barium | 1.94E-10 | 8.36E-11 | 1.17E-11 | 5.62E-11 | 1.36E-11 | 2.18E-11 | 2.32E-09 | 1.35E-09 | 8.16E-11 | -- |
| Beryllium | 1.74E-10 | 7.48E-11 | 1.04E-11 | 1.51E-11 | 3.66E-12 | 5.84E-12 | 2.87E-10 | 9.66E-11 | 7.31E-12 | -- |
| Boron | 1.07E-09 | 4.62E-10 | 6.44E-11 | 3.10E-10 | 7.53E-11 | 1.20E-10 | 4.58E-07 | 5.21E-07 | 6.01E-08 | -- |
| Cadmium | 1.15E-09 | 4.93E-10 | 6.88E-11 | 4.64E-10 | 1.12E-10 | 1.80E-10 | 2.57E-08 | 3.08E-08 | 2.05E-09 | -- |
| Chromium (Total) | 9.64E-11 | 4.14E-11 | 5.78E-12 | 1.11E-11 | 2.70E-12 | 4.32E-12 | 1.56E-09 | 1.01E-10 | 1.21E-11 | -- |
| Chromium VI | 1.37E-11 | 5.89E-12 | 8.23E-13 | 3.57E-12 | 8.65E-13 | 1.38E-12 | 2.22E-10 | 1.44E-11 | 1.73E-12 | -- |
| Cobalt | 5.84E-10 | 2.51E-10 | 3.50E-11 | 1.69E-10 | 4.09E-11 | 6.53E-11 | 4.59E-09 | 1.09E-09 | 1.14E-10 | -- |
| Lead | 2.67E-08 | 1.15E-08 | 1.60E-09 | 4.62E-10 | 1.12E-10 | 1.79E-10 | 8.66E-08 | 7.80E-08 | 6.71E-09 | -- |
| Mercury - Inorganic | 1.80E-09 | 7.74E-10 | 1.08E-10 | 2.60E-10 | 6.31E-11 | 1.01E-10 | 5.35E-09 | 5.62E-09 | 1.81E-09 | 1.83E-09 |
| Methyl Mercury | 6.98E-11 | 3.00E-11 | 4.19E-12 | 4.03E-11 | 9.78E-12 | 1.56E-11 | 7.27E-10 | 4.41E-10 | 1.93E-10 | 5.15E-10 |
| Nickel | 1.25E-08 | 5.38E-09 | 7.50E-10 | 1.27E-08 | 3.07E-09 | 4.90E-09 | 7.50E-08 | 2.50E-08 | 2.80E-09 | -- |
| Phosphorus | 3.75E-10 | 1.61E-10 | 2.25E-11 | 1.08E-10 | 2.63E-11 | 4.19E-11 | 2.24E-07 | 2.82E-07 | 3.67E-08 | -- |
| Selenium | 5.52E-12 | 2.37E-12 | 3.31E-13 | 3.19E-14 | 7.74E-15 | 1.24E-14 | 3.34E-10 | 2.32E-11 | 3.40E-12 | -- |
| Silver | 6.33E-11 | 2.72E-11 | 3.80E-12 | 4.57E-11 | 1.11E-11 | 1.77E-11 | 3.51E-09 | 1.88E-09 | 1.77E-10 | -- |
| Thallium | 6.08E-09 | 2.61E-09 | 3.65E-10 | 1.76E-10 | 4.26E-11 | 6.80E-11 | 2.67E-08 | 1.12E-09 | 6.80E-11 | -- |
| Tin | 6.59E-09 | 2.83E-09 | 3.95E-10 | 1.90E-09 | 4.62E-10 | 7.37E-10 | 2.05E-08 | 1.28E-08 | 1.11E-09 | -- |
| Vanadium | 6.29E-10 | 2.70E-10 | 3.77E-11 | 1.82E-10 | 4.41E-11 | 7.04E-11 | 1.08E-09 | 4.49E-10 | 5.28E-11 | -- |
| Zinc | 2.74E-08 | 1.18E-08 | 1.64E-09 | 1.58E-09 | 3.84E-10 | 6.13E-10 | 5.24E-07 | 5.72E-07 | 6.90E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Bowmanville Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.55E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.12E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.00E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.65E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.32E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.39E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.62E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.70E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.55E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.07E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.92E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.13E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.75E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.11E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.93E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.12E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.43E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.74E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.73E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Courtice Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 8.21E-14 | 3.53E-14 | 4.93E-15 | 4.75E-14 | 1.15E-14 | 1.84E-14 | 2.62E-12 | 3.82E-12 | 4.89E-13 | 4.51E-12 |
| Anthracene | 8.10E-14 | 3.48E-14 | 4.86E-15 | 6.79E-14 | 1.65E-14 | 2.63E-14 | 1.16E-12 | 1.69E-12 | 3.42E-15 | 3.16E-16 |
| Fluorene | 8.17E-14 | 3.51E-14 | 4.90E-15 | 4.72E-14 | 1.14E-14 | 1.83E-14 | 1.74E-12 | 2.55E-12 | 4.33E-15 | 1.19E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.53E-11 | 6.57E-12 | 9.17E-13 | 6.19E-12 | 1.50E-12 | 2.40E-12 | 1.54E-11 | 2.23E-11 | 4.10E-12 | 1.74E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.63E-14 | 7.01E-15 | 9.79E-16 | 1.41E-15 | 3.43E-16 | 5.48E-16 | 2.24E-14 | 1.60E-14 | 4.70E-15 | 3.81E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.70E-17 | 2.02E-17 | 2.82E-18 | 2.71E-17 | 6.58E-18 | 1.05E-17 | 9.79E-15 | 1.40E-14 | 1.17E-13 | 3.15E-16 |
| Bromoform | 1.31E-16 | 5.63E-17 | 7.85E-18 | 4.16E-17 | 1.01E-17 | 1.61E-17 | 3.18E-14 | 4.64E-14 | 4.51E-14 | 2.12E-17 |
| Carbon Tetrachloride | 9.38E-18 | 4.03E-18 | 5.63E-19 | 2.71E-17 | 6.57E-18 | 1.05E-17 | 1.34E-15 | 1.88E-15 | 2.50E-14 | 8.26E-17 |
| Chloroform | 2.10E-17 | 9.04E-18 | 1.26E-18 | 6.08E-18 | 1.47E-18 | 2.35E-18 | 8.45E-15 | 1.22E-14 | 5.92E-14 | 1.52E-16 |
| Dichloromethane | 3.77E-15 | 1.62E-15 | 2.26E-16 | 1.09E-15 | 2.64E-16 | 4.22E-16 | 3.82E-12 | 5.56E-12 | 3.80E-11 | 1.58E-14 |
| O-Terphenyl | 2.60E-13 | 1.12E-13 | 1.56E-14 | 1.50E-13 | 3.64E-14 | 5.82E-14 | 1.00E-12 | 1.40E-12 | 1.63E-13 | 8.27E-14 |
| Trichlorofluoromethane (FREON 11) | 9.71E-16 | 4.18E-16 | 5.83E-17 | 5.61E-16 | 1.36E-16 | 2.17E-16 | 2.03E-13 | 2.90E-13 | 2.21E-12 | 6.66E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 3.69E-14 | 1.59E-14 | 2.21E-15 | 1.07E-14 | 2.59E-15 | 4.13E-15 | 3.54E-13 | 5.17E-13 | 1.08E-12 | 2.09E-16 |
| 1,2,4-Trichlorobenzene | 8.70E-16 | 3.74E-16 | 5.22E-17 | 2.01E-16 | 4.88E-17 | 7.79E-17 | 2.42E-14 | 3.54E-14 | 1.89E-14 | 5.47E-17 |
| 1,2-Dichlorobenzene | 1.17E-14 | 5.03E-15 | 7.02E-16 | 3.38E-15 | 8.20E-16 | 1.31E-15 | 7.63E-13 | 1.09E-12 | 8.04E-12 | 3.49E-14 |
| Hexachlorobenzene | 1.59E-14 | 6.82E-15 | 9.51E-16 | 5.96E-15 | 1.44E-15 | 2.31E-15 | 7.90E-14 | 1.14E-13 | 1.13E-13 | 1.43E-15 |
| Pentachlorobenzene | 5.74E-13 | 2.47E-13 | 3.44E-14 | 1.66E-14 | 4.02E-15 | 6.42E-15 | 3.36E-12 | 4.91E-12 | 2.95E-13 | 4.98E-15 |
| Pentachlorophenol | 2.70E-13 | 1.16E-13 | 1.62E-14 | 8.58E-14 | 2.08E-14 | 3.32E-14 | 1.12E-10 | 2.54E-12 | 1.24E-10 | 1.89E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.98E-10 | 8.52E-11 | 1.19E-11 | 5.73E-11 | 1.39E-11 | 2.22E-11 | 2.19E-09 | 1.36E-09 | 1.66E-10 | -- |
| Arsenic | 1.97E-11 | 8.46E-12 | 1.18E-12 | 1.71E-12 | 4.13E-13 | 6.60E-13 | 2.12E-10 | 2.68E-11 | 4.40E-12 | -- |
| Barium | 1.40E-10 | 6.00E-11 | 8.37E-12 | 4.03E-11 | 9.78E-12 | 1.56E-11 | 1.64E-09 | 9.67E-10 | 5.86E-11 | -- |
| Beryllium | 1.25E-10 | 5.37E-11 | 7.49E-12 | 1.08E-11 | 2.62E-12 | 4.19E-12 | 2.01E-10 | 6.93E-11 | 5.24E-12 | -- |
| Boron | 7.72E-10 | 3.32E-10 | 4.63E-11 | 2.23E-10 | 5.41E-11 | 8.64E-11 | 3.27E-07 | 3.74E-07 | 4.32E-08 | -- |
| Cadmium | 8.23E-10 | 3.54E-10 | 4.94E-11 | 3.33E-10 | 8.07E-11 | 1.29E-10 | 1.84E-08 | 2.21E-08 | 1.47E-09 | -- |
| Chromium (Total) | 6.92E-11 | 2.98E-11 | 4.15E-12 | 8.00E-12 | 1.94E-12 | 3.10E-12 | 1.09E-09 | 7.27E-11 | 8.72E-12 | -- |
| Chromium VI | 9.85E-12 | 4.23E-12 | 5.91E-13 | 2.56E-12 | 6.21E-13 | 9.92E-13 | 1.54E-10 | 1.03E-11 | 1.24E-12 | -- |
| Cobalt | 4.19E-10 | 1.80E-10 | 2.51E-11 | 1.21E-10 | 2.94E-11 | 4.69E-11 | 3.20E-09 | 7.80E-10 | 8.21E-11 | -- |
| Lead | 1.91E-08 | 8.22E-09 | 1.15E-09 | 3.32E-10 | 8.04E-11 | 1.28E-10 | 6.13E-08 | 5.59E-08 | 4.82E-09 | -- |
| Mercury - Inorganic | 1.21E-09 | 5.20E-10 | 7.25E-11 | 1.75E-10 | 4.23E-11 | 6.76E-11 | 3.62E-09 | 3.77E-09 | 1.22E-09 | 1.25E-09 |
| Methyl Mercury | 5.00E-11 | 2.15E-11 | 3.00E-12 | 2.89E-11 | 7.01E-12 | 1.12E-11 | 5.10E-10 | 3.16E-10 | 1.39E-10 | 3.54E-10 |
| Nickel | 8.98E-09 | 3.86E-09 | 5.39E-10 | 9.08E-09 | 2.20E-09 | 3.52E-09 | 5.24E-08 | 1.80E-08 | 2.01E-09 | -- |
| Phosphorus | 2.69E-10 | 1.16E-10 | 1.62E-11 | 7.78E-11 | 1.89E-11 | 3.01E-11 | 1.60E-07 | 2.03E-07 | 2.64E-08 | -- |
| Selenium | 3.97E-12 | 1.70E-12 | 2.38E-13 | 2.29E-14 | 5.56E-15 | 8.88E-15 | 2.33E-10 | 1.66E-11 | 2.44E-12 | -- |
| Silver | 4.55E-11 | 1.96E-11 | 2.73E-12 | 3.29E-11 | 7.97E-12 | 1.27E-11 | 2.47E-09 | 1.35E-09 | 1.27E-10 | -- |
| Thallium | 4.36E-09 | 1.88E-09 | 2.62E-10 | 1.26E-10 | 3.06E-11 | 4.88E-11 | 1.85E-08 | 8.05E-10 | 4.88E-11 | -- |
| Tin | 4.73E-09 | 2.03E-09 | 2.84E-10 | 1.37E-09 | 3.31E-10 | 5.29E-10 | 1.44E-08 | 9.20E-09 | 7.94E-10 | -- |
| Vanadium | 4.51E-10 | 1.94E-10 | 2.71E-11 | 1.30E-10 | 3.16E-11 | 5.05E-11 | 7.56E-10 | 3.22E-10 | 3.79E-11 | -- |
| Zinc | 1.97E-08 | 8.46E-09 | 1.18E-09 | 1.14E-09 | 2.76E-10 | 4.40E-10 | 3.73E-07 | 4.10E-07 | 4.96E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Courtice Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.09E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.50E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.48E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.35E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.71E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.03E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.02E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.94E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.41E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.46E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.28E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.11E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.75E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.79E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.45E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.37E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.85E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.89E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.90E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.07E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.31E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Courtice Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.43E-13 | 1.47E-13 | 2.06E-14 | 1.98E-13 | 4.81E-14 | 7.68E-14 | 1.09E-11 | 1.59E-11 | 2.04E-12 | 1.88E-11 |
| Anthracene | 3.38E-13 | 1.45E-13 | 2.03E-14 | 2.84E-13 | 6.87E-14 | 1.10E-13 | 4.85E-12 | 7.07E-12 | 1.43E-14 | 7.67E-16 |
| Fluorene | 3.41E-13 | 1.47E-13 | 2.05E-14 | 1.97E-13 | 4.78E-14 | 7.63E-14 | 7.28E-12 | 1.06E-11 | 1.81E-14 | 2.88E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 6.40E-11 | 2.75E-11 | 3.84E-12 | 2.59E-11 | 6.28E-12 | 1.00E-11 | 6.41E-11 | 9.33E-11 | 1.71E-11 | 4.23E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.07E-14 | 2.18E-14 | 3.04E-15 | 4.40E-15 | 1.07E-15 | 1.70E-15 | 6.36E-14 | 4.96E-14 | 1.46E-14 | 9.25E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.96E-16 | 8.43E-17 | 1.18E-17 | 1.13E-16 | 2.75E-17 | 4.39E-17 | 4.06E-14 | 5.86E-14 | 4.86E-13 | 7.64E-16 |
| Bromoform | 5.46E-16 | 2.35E-16 | 3.28E-17 | 1.74E-16 | 4.21E-17 | 6.73E-17 | 1.33E-13 | 1.94E-13 | 1.88E-13 | 5.15E-17 |
| Carbon Tetrachloride | 3.92E-17 | 1.68E-17 | 2.35E-18 | 1.13E-16 | 2.74E-17 | 4.38E-17 | 5.49E-15 | 7.85E-15 | 1.04E-13 | 2.00E-16 |
| Chloroform | 8.78E-17 | 3.77E-17 | 5.27E-18 | 2.54E-17 | 6.15E-18 | 9.83E-18 | 3.51E-14 | 5.10E-14 | 2.47E-13 | 3.69E-16 |
| Dichloromethane | 1.57E-14 | 6.77E-15 | 9.44E-16 | 4.55E-15 | 1.10E-15 | 1.76E-15 | 1.59E-11 | 2.32E-11 | 1.59E-10 | 3.84E-14 |
| O-Terphenyl | 1.09E-12 | 4.67E-13 | 6.51E-14 | 6.27E-13 | 1.52E-13 | 2.43E-13 | 4.11E-12 | 5.83E-12 | 6.82E-13 | 2.01E-13 |
| Trichlorofluoromethane (FREON 11) | 4.06E-15 | 1.74E-15 | 2.43E-16 | 2.34E-15 | 5.68E-16 | 9.08E-16 | 8.39E-13 | 1.21E-12 | 9.22E-12 | 1.62E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.54E-13 | 6.63E-14 | 9.25E-15 | 4.45E-14 | 1.08E-14 | 1.73E-14 | 1.48E-12 | 2.16E-12 | 4.52E-12 | 5.07E-16 |
| 1,2,4-Trichlorobenzene | 3.63E-15 | 1.56E-15 | 2.18E-16 | 8.40E-16 | 2.04E-16 | 3.25E-16 | 1.01E-13 | 1.48E-13 | 7.88E-14 | 1.33E-16 |
| 1,2-Dichlorobenzene | 4.89E-14 | 2.10E-14 | 2.93E-15 | 1.41E-14 | 3.42E-15 | 5.47E-15 | 3.15E-12 | 4.53E-12 | 3.36E-11 | 8.48E-14 |
| Hexachlorobenzene | 6.62E-14 | 2.85E-14 | 3.97E-15 | 2.49E-14 | 6.03E-15 | 9.63E-15 | 3.29E-13 | 4.77E-13 | 4.71E-13 | 3.47E-15 |
| Pentachlorobenzene | 2.40E-12 | 1.03E-12 | 1.44E-13 | 6.92E-14 | 1.68E-14 | 2.68E-14 | 1.40E-11 | 2.05E-11 | 1.23E-12 | 1.21E-14 |
| Pentachlorophenol | 1.13E-12 | 4.84E-13 | 6.76E-14 | 3.58E-13 | 8.68E-14 | 1.39E-13 | 2.74E-10 | 1.06E-11 | 5.16E-10 | 4.60E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 6.15E-10 | 2.64E-10 | 3.69E-11 | 1.78E-10 | 4.31E-11 | 6.88E-11 | 6.19E-09 | 4.22E-09 | 5.17E-10 | -- |
| Arsenic | 6.10E-11 | 2.62E-11 | 3.66E-12 | 5.29E-12 | 1.28E-12 | 2.05E-12 | 5.62E-10 | 8.31E-11 | 1.37E-11 | -- |
| Barium | 4.33E-10 | 1.86E-10 | 2.60E-11 | 1.25E-10 | 3.03E-11 | 4.85E-11 | 4.60E-09 | 3.00E-09 | 1.82E-10 | -- |
| Beryllium | 3.88E-10 | 1.67E-10 | 2.33E-11 | 3.36E-11 | 8.15E-12 | 1.30E-11 | 5.48E-10 | 2.15E-10 | 1.63E-11 | -- |
| Boron | 2.39E-09 | 1.03E-09 | 1.44E-10 | 6.92E-10 | 1.68E-10 | 2.68E-10 | 9.79E-07 | 1.16E-06 | 1.34E-07 | -- |
| Cadmium | 2.55E-09 | 1.10E-09 | 1.53E-10 | 1.03E-09 | 2.51E-10 | 4.00E-10 | 5.54E-08 | 6.87E-08 | 4.58E-09 | -- |
| Chromium (Total) | 2.15E-10 | 9.24E-11 | 1.29E-11 | 2.48E-11 | 6.02E-12 | 9.62E-12 | 2.86E-09 | 2.25E-10 | 2.71E-11 | -- |
| Chromium VI | 3.06E-11 | 1.31E-11 | 1.83E-12 | 7.95E-12 | 1.93E-12 | 3.08E-12 | 4.07E-10 | 3.21E-11 | 3.85E-12 | -- |
| Cobalt | 1.30E-09 | 5.59E-10 | 7.80E-11 | 3.76E-10 | 9.11E-11 | 1.46E-10 | 8.63E-09 | 2.42E-09 | 2.55E-10 | -- |
| Lead | 5.94E-08 | 2.55E-08 | 3.56E-09 | 1.03E-09 | 2.50E-10 | 3.99E-10 | 1.79E-07 | 1.74E-07 | 1.50E-08 | -- |
| Mercury - Inorganic | 4.14E-09 | 1.78E-09 | 2.49E-10 | 5.99E-10 | 1.45E-10 | 2.32E-10 | 1.14E-08 | 1.29E-08 | 4.17E-09 | 3.04E-09 |
| Methyl Mercury | 1.55E-10 | 6.68E-11 | 9.32E-12 | 8.98E-11 | 2.18E-11 | 3.48E-11 | 1.40E-09 | 9.83E-10 | 4.31E-10 | 8.59E-10 |
| Nickel | 2.79E-08 | 1.20E-08 | 1.67E-09 | 2.82E-08 | 6.83E-09 | 1.09E-08 | 1.43E-07 | 5.58E-08 | 6.24E-09 | -- |
| Phosphorus | 8.35E-10 | 3.59E-10 | 5.01E-11 | 2.41E-10 | 5.85E-11 | 9.35E-11 | 4.86E-07 | 6.29E-07 | 8.18E-08 | -- |
| Selenium | 1.23E-11 | 5.29E-12 | 7.38E-13 | 7.11E-14 | 1.72E-14 | 2.75E-14 | 6.13E-10 | 5.16E-11 | 7.58E-12 | -- |
| Silver | 1.41E-10 | 6.07E-11 | 8.47E-12 | 1.02E-10 | 2.47E-11 | 3.95E-11 | 6.90E-09 | 4.19E-09 | 3.95E-10 | -- |
| Thallium | 1.35E-08 | 5.82E-09 | 8.12E-10 | 3.91E-10 | 9.49E-11 | 1.52E-10 | 4.86E-08 | 2.50E-09 | 1.52E-10 | -- |
| Tin | 1.47E-08 | 6.31E-09 | 8.80E-10 | 4.24E-09 | 1.03E-09 | 1.64E-09 | 4.07E-08 | 2.86E-08 | 2.46E-09 | -- |
| Vanadium | 1.40E-09 | 6.02E-10 | 8.41E-11 | 4.05E-10 | 9.82E-11 | 1.57E-10 | 2.08E-09 | 1.00E-09 | 1.18E-10 | -- |
| Zinc | 6.11E-08 | 2.63E-08 | 3.66E-09 | 3.53E-09 | 8.56E-10 | 1.37E-09 | 1.11E-06 | 1.27E-06 | 1.54E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Courtice Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.86E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.20E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.87E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.16E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.34E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.35E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.46E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.14E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.95E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.21E-08 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.63E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-09 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.28E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.01E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.58E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.05E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.20E-06 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.91E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.19E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.95E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.02E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Maple Grove**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 9.46E-14 | 4.07E-14 | 5.68E-15 | 5.47E-14 | 1.33E-14 | 2.12E-14 | 3.02E-12 | 4.40E-12 | 5.63E-13 | 5.20E-12 |
| Anthracene | 9.34E-14 | 4.01E-14 | 5.60E-15 | 7.82E-14 | 1.90E-14 | 3.03E-14 | 1.34E-12 | 1.95E-12 | 3.94E-15 | 3.87E-16 |
| Fluorene | 9.41E-14 | 4.05E-14 | 5.65E-15 | 5.44E-14 | 1.32E-14 | 2.11E-14 | 2.01E-12 | 2.93E-12 | 4.99E-15 | 1.45E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.76E-11 | 7.59E-12 | 1.06E-12 | 7.14E-12 | 1.73E-12 | 2.77E-12 | 1.77E-11 | 2.57E-11 | 4.73E-12 | 2.13E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.23E-14 | 5.28E-15 | 7.36E-16 | 1.06E-15 | 2.58E-16 | 4.12E-16 | 1.69E-14 | 1.20E-14 | 3.53E-15 | 4.66E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.41E-17 | 2.33E-17 | 3.25E-18 | 3.13E-17 | 7.58E-18 | 1.21E-17 | 1.13E-14 | 1.62E-14 | 1.34E-13 | 3.85E-16 |
| Bromoform | 1.51E-16 | 6.48E-17 | 9.04E-18 | 4.79E-17 | 1.16E-17 | 1.86E-17 | 3.66E-14 | 5.35E-14 | 5.19E-14 | 2.60E-17 |
| Carbon Tetrachloride | 1.08E-17 | 4.64E-18 | 6.48E-19 | 3.12E-17 | 7.57E-18 | 1.21E-17 | 1.54E-15 | 2.17E-15 | 2.88E-14 | 1.01E-16 |
| Chloroform | 2.42E-17 | 1.04E-17 | 1.45E-18 | 7.00E-18 | 1.70E-18 | 2.71E-18 | 9.74E-15 | 1.41E-14 | 6.82E-14 | 1.86E-16 |
| Dichloromethane | 4.34E-15 | 1.87E-15 | 2.61E-16 | 1.26E-15 | 3.04E-16 | 4.86E-16 | 4.40E-12 | 6.41E-12 | 4.38E-11 | 1.94E-14 |
| O-Terphenyl | 2.99E-13 | 1.29E-13 | 1.80E-14 | 1.73E-13 | 4.20E-14 | 6.70E-14 | 1.16E-12 | 1.61E-12 | 1.88E-13 | 1.01E-13 |
| Trichlorofluoromethane (FREON 11) | 1.12E-15 | 4.81E-16 | 6.71E-17 | 6.47E-16 | 1.57E-16 | 2.51E-16 | 2.34E-13 | 3.35E-13 | 2.55E-12 | 8.15E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.25E-14 | 1.83E-14 | 2.55E-15 | 1.23E-14 | 2.98E-15 | 4.76E-15 | 4.08E-13 | 5.96E-13 | 1.25E-12 | 2.56E-16 |
| 1,2,4-Trichlorobenzene | 1.00E-15 | 4.31E-16 | 6.02E-17 | 2.32E-16 | 5.62E-17 | 8.98E-17 | 2.79E-14 | 4.08E-14 | 2.17E-14 | 6.69E-17 |
| 1,2-Dichlorobenzene | 1.35E-14 | 5.80E-15 | 8.09E-16 | 3.90E-15 | 9.45E-16 | 1.51E-15 | 8.81E-13 | 1.25E-12 | 9.26E-12 | 4.27E-14 |
| Hexachlorobenzene | 1.83E-14 | 7.85E-15 | 1.10E-15 | 6.86E-15 | 1.66E-15 | 2.66E-15 | 9.11E-14 | 1.32E-13 | 1.30E-13 | 1.75E-15 |
| Pentachlorobenzene | 6.61E-13 | 2.84E-13 | 3.97E-14 | 1.91E-14 | 4.63E-15 | 7.40E-15 | 3.88E-12 | 5.66E-12 | 3.40E-13 | 6.09E-15 |
| Pentachlorophenol | 3.11E-13 | 1.34E-13 | 1.86E-14 | 9.88E-14 | 2.40E-14 | 3.83E-14 | 1.36E-10 | 2.92E-12 | 1.42E-10 | 2.32E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.49E-10 | 6.40E-11 | 8.93E-12 | 4.30E-11 | 1.04E-11 | 1.67E-11 | 1.51E-09 | 1.02E-09 | 1.25E-10 | -- |
| Arsenic | 1.48E-11 | 6.35E-12 | 8.86E-13 | 1.28E-12 | 3.10E-13 | 4.96E-13 | 1.38E-10 | 2.01E-11 | 3.31E-12 | -- |
| Barium | 1.05E-10 | 4.51E-11 | 6.29E-12 | 3.03E-11 | 7.34E-12 | 1.17E-11 | 1.12E-09 | 7.26E-10 | 4.40E-11 | -- |
| Beryllium | 9.38E-11 | 4.03E-11 | 5.63E-12 | 8.13E-12 | 1.97E-12 | 3.15E-12 | 1.34E-10 | 5.21E-11 | 3.94E-12 | -- |
| Boron | 5.79E-10 | 2.49E-10 | 3.48E-11 | 1.67E-10 | 4.06E-11 | 6.48E-11 | 2.38E-07 | 2.81E-07 | 3.24E-08 | -- |
| Cadmium | 6.18E-10 | 2.66E-10 | 3.71E-11 | 2.50E-10 | 6.06E-11 | 9.69E-11 | 1.35E-08 | 1.66E-08 | 1.11E-09 | -- |
| Chromium (Total) | 5.20E-11 | 2.24E-11 | 3.12E-12 | 6.01E-12 | 1.46E-12 | 2.33E-12 | 7.04E-10 | 5.46E-11 | 6.55E-12 | -- |
| Chromium VI | 7.39E-12 | 3.18E-12 | 4.44E-13 | 1.92E-12 | 4.66E-13 | 7.45E-13 | 1.00E-10 | 7.76E-12 | 9.31E-13 | -- |
| Cobalt | 3.15E-10 | 1.35E-10 | 1.89E-11 | 9.10E-11 | 2.21E-11 | 3.52E-11 | 2.12E-09 | 5.86E-10 | 6.17E-11 | -- |
| Lead | 1.44E-08 | 6.18E-09 | 8.62E-10 | 2.49E-10 | 6.04E-11 | 9.65E-11 | 4.36E-08 | 4.20E-08 | 3.62E-09 | -- |
| Mercury - Inorganic | 1.33E-09 | 5.72E-10 | 7.98E-11 | 1.92E-10 | 4.66E-11 | 7.44E-11 | 3.93E-09 | 4.15E-09 | 1.34E-09 | 1.53E-09 |
| Methyl Mercury | 3.76E-11 | 1.62E-11 | 2.26E-12 | 2.17E-11 | 5.27E-12 | 8.42E-12 | 4.70E-10 | 2.38E-10 | 1.04E-10 | 4.33E-10 |
| Nickel | 6.74E-09 | 2.90E-09 | 4.05E-10 | 6.82E-09 | 1.65E-09 | 2.64E-09 | 3.50E-08 | 1.35E-08 | 1.51E-09 | -- |
| Phosphorus | 2.02E-10 | 8.69E-11 | 1.21E-11 | 5.84E-11 | 1.42E-11 | 2.26E-11 | 1.18E-07 | 1.52E-07 | 1.98E-08 | -- |
| Selenium | 2.98E-12 | 1.28E-12 | 1.79E-13 | 1.72E-14 | 4.17E-15 | 6.66E-15 | 1.51E-10 | 1.25E-11 | 1.83E-12 | -- |
| Silver | 3.41E-11 | 1.47E-11 | 2.05E-12 | 2.47E-11 | 5.98E-12 | 9.55E-12 | 1.69E-09 | 1.01E-09 | 9.56E-11 | -- |
| Thallium | 3.28E-09 | 1.41E-09 | 1.97E-10 | 9.47E-11 | 2.30E-11 | 3.67E-11 | 1.20E-08 | 6.05E-10 | 3.67E-11 | -- |
| Tin | 3.55E-09 | 1.53E-09 | 2.13E-10 | 1.03E-09 | 2.49E-10 | 3.97E-10 | 9.95E-09 | 6.91E-09 | 5.96E-10 | -- |
| Vanadium | 3.39E-10 | 1.46E-10 | 2.03E-11 | 9.80E-11 | 2.38E-11 | 3.80E-11 | 5.10E-10 | 2.42E-10 | 2.85E-11 | -- |
| Zinc | 1.48E-08 | 6.35E-09 | 8.87E-10 | 8.54E-10 | 2.07E-10 | 3.31E-10 | 2.70E-07 | 3.08E-07 | 3.72E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Maple Grove**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.56E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.18E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.64E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.71E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.62E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.23E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.46E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.79E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.33E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.24E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.09E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.14E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.95E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.52E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.52E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.38E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.12E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.89E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.74E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Oshawa Subdivision**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.37E-13 | 5.91E-14 | 8.24E-15 | 7.94E-14 | 1.93E-14 | 3.08E-14 | 4.38E-12 | 6.38E-12 | 8.18E-13 | 7.55E-12 |
| Anthracene | 1.36E-13 | 5.83E-14 | 8.13E-15 | 1.14E-13 | 2.75E-14 | 4.40E-14 | 1.94E-12 | 2.83E-12 | 5.71E-15 | 5.80E-16 |
| Fluorene | 1.37E-13 | 5.87E-14 | 8.20E-15 | 7.90E-14 | 1.91E-14 | 3.06E-14 | 2.92E-12 | 4.26E-12 | 7.25E-15 | 2.18E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.56E-11 | 1.10E-11 | 1.53E-12 | 1.03E-11 | 2.51E-12 | 4.01E-12 | 2.57E-11 | 3.73E-11 | 6.86E-12 | 3.19E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.16E-14 | 9.28E-15 | 1.30E-15 | 1.87E-15 | 4.54E-16 | 7.25E-16 | 2.99E-14 | 2.11E-14 | 6.21E-15 | 6.99E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 7.86E-17 | 3.38E-17 | 4.71E-18 | 4.54E-17 | 1.10E-17 | 1.76E-17 | 1.64E-14 | 2.35E-14 | 1.95E-13 | 5.77E-16 |
| Bromoform | 2.19E-16 | 9.41E-17 | 1.31E-17 | 6.96E-17 | 1.69E-17 | 2.69E-17 | 5.32E-14 | 7.77E-14 | 7.53E-14 | 3.89E-17 |
| Carbon Tetrachloride | 1.57E-17 | 6.74E-18 | 9.41E-19 | 4.53E-17 | 1.10E-17 | 1.76E-17 | 2.24E-15 | 3.14E-15 | 4.18E-14 | 1.51E-16 |
| Chloroform | 3.52E-17 | 1.51E-17 | 2.11E-18 | 1.02E-17 | 2.46E-18 | 3.94E-18 | 1.41E-14 | 2.04E-14 | 9.91E-14 | 2.79E-16 |
| Dichloromethane | 6.31E-15 | 2.71E-15 | 3.78E-16 | 1.82E-15 | 4.42E-16 | 7.06E-16 | 6.39E-12 | 9.30E-12 | 6.35E-11 | 2.90E-14 |
| O-Terphenyl | 4.35E-13 | 1.87E-13 | 2.61E-14 | 2.51E-13 | 6.09E-14 | 9.73E-14 | 1.69E-12 | 2.34E-12 | 2.73E-13 | 1.52E-13 |
| Trichlorofluoromethane (FREON 11) | 1.62E-15 | 6.99E-16 | 9.75E-17 | 9.39E-16 | 2.28E-16 | 3.64E-16 | 3.40E-13 | 4.86E-13 | 3.70E-12 | 1.22E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.17E-14 | 2.65E-14 | 3.70E-15 | 1.78E-14 | 4.33E-15 | 6.91E-15 | 5.92E-13 | 8.65E-13 | 1.81E-12 | 3.83E-16 |
| 1,2,4-Trichlorobenzene | 1.46E-15 | 6.26E-16 | 8.73E-17 | 3.37E-16 | 8.16E-17 | 1.30E-16 | 4.06E-14 | 5.92E-14 | 3.16E-14 | 1.00E-16 |
| 1,2-Dichlorobenzene | 1.96E-14 | 8.42E-15 | 1.17E-15 | 5.66E-15 | 1.37E-15 | 2.19E-15 | 1.28E-12 | 1.82E-12 | 1.34E-11 | 6.41E-14 |
| Hexachlorobenzene | 2.65E-14 | 1.14E-14 | 1.59E-15 | 9.96E-15 | 2.42E-15 | 3.86E-15 | 1.32E-13 | 1.91E-13 | 1.89E-13 | 2.62E-15 |
| Pentachlorobenzene | 9.60E-13 | 4.13E-13 | 5.76E-14 | 2.77E-14 | 6.72E-15 | 1.07E-14 | 5.63E-12 | 8.22E-12 | 4.94E-13 | 9.13E-15 |
| Pentachlorophenol | 4.51E-13 | 1.94E-13 | 2.71E-14 | 1.43E-13 | 3.48E-14 | 5.56E-14 | 2.05E-10 | 4.24E-12 | 2.07E-10 | 3.47E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.62E-10 | 1.13E-10 | 1.57E-11 | 7.58E-11 | 1.84E-11 | 2.94E-11 | 2.78E-09 | 1.80E-09 | 2.20E-10 | -- |
| Arsenic | 2.60E-11 | 1.12E-11 | 1.56E-12 | 2.26E-12 | 5.47E-13 | 8.74E-13 | 2.62E-10 | 3.54E-11 | 5.83E-12 | -- |
| Barium | 1.85E-10 | 7.94E-11 | 1.11E-11 | 5.34E-11 | 1.29E-11 | 2.07E-11 | 2.07E-09 | 1.28E-09 | 7.75E-11 | -- |
| Beryllium | 1.65E-10 | 7.10E-11 | 9.91E-12 | 1.43E-11 | 3.47E-12 | 5.55E-12 | 2.51E-10 | 9.17E-11 | 6.93E-12 | -- |
| Boron | 1.02E-09 | 4.39E-10 | 6.12E-11 | 2.95E-10 | 7.15E-11 | 1.14E-10 | 4.25E-07 | 4.95E-07 | 5.71E-08 | -- |
| Cadmium | 1.09E-09 | 4.68E-10 | 6.53E-11 | 4.41E-10 | 1.07E-10 | 1.71E-10 | 2.40E-08 | 2.93E-08 | 1.95E-09 | -- |
| Chromium (Total) | 9.16E-11 | 3.94E-11 | 5.50E-12 | 1.06E-11 | 2.57E-12 | 4.10E-12 | 1.34E-09 | 9.62E-11 | 1.15E-11 | -- |
| Chromium VI | 1.30E-11 | 5.60E-12 | 7.82E-13 | 3.39E-12 | 8.22E-13 | 1.31E-12 | 1.90E-10 | 1.37E-11 | 1.64E-12 | -- |
| Cobalt | 5.55E-10 | 2.38E-10 | 3.33E-11 | 1.60E-10 | 3.89E-11 | 6.21E-11 | 3.98E-09 | 1.03E-09 | 1.09E-10 | -- |
| Lead | 2.53E-08 | 1.09E-08 | 1.52E-09 | 4.39E-10 | 1.06E-10 | 1.70E-10 | 7.89E-08 | 7.40E-08 | 6.37E-09 | -- |
| Mercury - Inorganic | 1.98E-09 | 8.50E-10 | 1.19E-10 | 2.86E-10 | 6.92E-11 | 1.11E-10 | 5.94E-09 | 6.16E-09 | 1.99E-09 | 2.30E-09 |
| Methyl Mercury | 6.62E-11 | 2.85E-11 | 3.97E-12 | 3.83E-11 | 9.28E-12 | 1.48E-11 | 7.71E-10 | 4.19E-10 | 1.83E-10 | 6.49E-10 |
| Nickel | 1.19E-08 | 5.11E-09 | 7.13E-10 | 1.20E-08 | 2.91E-09 | 4.65E-09 | 6.55E-08 | 2.38E-08 | 2.66E-09 | -- |
| Phosphorus | 3.56E-10 | 1.53E-10 | 2.14E-11 | 1.03E-10 | 2.50E-11 | 3.99E-11 | 2.10E-07 | 2.68E-07 | 3.49E-08 | -- |
| Selenium | 5.25E-12 | 2.26E-12 | 3.15E-13 | 3.03E-14 | 7.35E-15 | 1.17E-14 | 2.86E-10 | 2.20E-11 | 3.23E-12 | -- |
| Silver | 6.02E-11 | 2.59E-11 | 3.61E-12 | 4.35E-11 | 1.05E-11 | 1.68E-11 | 3.12E-09 | 1.79E-09 | 1.68E-10 | -- |
| Thallium | 5.77E-09 | 2.48E-09 | 3.46E-10 | 1.67E-10 | 4.04E-11 | 6.46E-11 | 2.28E-08 | 1.07E-09 | 6.46E-11 | -- |
| Tin | 6.25E-09 | 2.69E-09 | 3.75E-10 | 1.81E-09 | 4.38E-10 | 7.00E-10 | 1.83E-08 | 1.22E-08 | 1.05E-09 | -- |
| Vanadium | 5.97E-10 | 2.57E-10 | 3.58E-11 | 1.73E-10 | 4.18E-11 | 6.68E-11 | 9.49E-10 | 4.26E-10 | 5.01E-11 | -- |
| Zinc | 2.60E-08 | 1.12E-08 | 1.56E-09 | 1.50E-09 | 3.65E-10 | 5.83E-10 | 4.85E-07 | 5.43E-07 | 6.56E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Oshawa Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.17E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.52E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.95E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.36E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.74E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.93E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.50E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.39E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.71E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.31E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.45E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.79E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.19E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.79E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.76E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.30E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.21E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.98E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.29E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.13E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.23E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.28E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.38E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.60E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Port Darlington**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 6.21E-14 | 2.67E-14 | 3.72E-15 | 3.59E-14 | 8.70E-15 | 1.39E-14 | 1.98E-12 | 2.88E-12 | 3.70E-13 | 3.42E-12 |
| Anthracene | 6.12E-14 | 2.63E-14 | 3.67E-15 | 5.13E-14 | 1.24E-14 | 1.99E-14 | 8.78E-13 | 1.28E-12 | 2.58E-15 | 4.17E-16 |
| Fluorene | 6.17E-14 | 2.65E-14 | 3.70E-15 | 3.57E-14 | 8.65E-15 | 1.38E-14 | 1.32E-12 | 1.92E-12 | 3.27E-15 | 1.57E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.16E-11 | 4.98E-12 | 6.96E-13 | 4.69E-12 | 1.14E-12 | 1.82E-12 | 1.17E-11 | 1.69E-11 | 3.11E-12 | 2.29E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.75E-15 | 3.33E-15 | 4.65E-16 | 6.72E-16 | 1.63E-16 | 2.60E-16 | 1.25E-14 | 7.59E-15 | 2.23E-15 | 5.02E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.55E-17 | 1.53E-17 | 2.13E-18 | 2.05E-17 | 4.97E-18 | 7.94E-18 | 7.50E-15 | 1.06E-14 | 8.80E-14 | 4.15E-16 |
| Bromoform | 9.89E-17 | 4.25E-17 | 5.93E-18 | 3.14E-17 | 7.62E-18 | 1.22E-17 | 2.40E-14 | 3.51E-14 | 3.40E-14 | 2.80E-17 |
| Carbon Tetrachloride | 7.09E-18 | 3.05E-18 | 4.25E-19 | 2.05E-17 | 4.96E-18 | 7.93E-18 | 1.04E-15 | 1.42E-15 | 1.89E-14 | 1.09E-16 |
| Chloroform | 1.59E-17 | 6.83E-18 | 9.53E-19 | 4.59E-18 | 1.11E-18 | 1.78E-18 | 6.43E-15 | 9.23E-15 | 4.47E-14 | 2.00E-16 |
| Dichloromethane | 2.85E-15 | 1.22E-15 | 1.71E-16 | 8.23E-16 | 2.00E-16 | 3.19E-16 | 2.89E-12 | 4.20E-12 | 2.87E-11 | 2.09E-14 |
| O-Terphenyl | 1.96E-13 | 8.44E-14 | 1.18E-14 | 1.14E-13 | 2.75E-14 | 4.40E-14 | 7.86E-13 | 1.06E-12 | 1.23E-13 | 1.09E-13 |
| Trichlorofluoromethane (FREON 11) | 7.34E-16 | 3.16E-16 | 4.40E-17 | 4.24E-16 | 1.03E-16 | 1.64E-16 | 1.55E-13 | 2.19E-13 | 1.67E-12 | 8.78E-15 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.79E-14 | 1.20E-14 | 1.67E-15 | 8.06E-15 | 1.95E-15 | 3.12E-15 | 2.68E-13 | 3.91E-13 | 8.18E-13 | 2.75E-16 |
| 1,2,4-Trichlorobenzene | 6.58E-16 | 2.83E-16 | 3.95E-17 | 1.52E-16 | 3.69E-17 | 5.89E-17 | 1.83E-14 | 2.67E-14 | 1.43E-14 | 7.20E-17 |
| 1,2-Dichlorobenzene | 8.85E-15 | 3.80E-15 | 5.31E-16 | 2.56E-15 | 6.20E-16 | 9.90E-16 | 5.88E-13 | 8.20E-13 | 6.07E-12 | 4.60E-14 |
| Hexachlorobenzene | 1.20E-14 | 5.15E-15 | 7.19E-16 | 4.50E-15 | 1.09E-15 | 1.74E-15 | 6.02E-14 | 8.63E-14 | 8.53E-14 | 1.88E-15 |
| Pentachlorobenzene | 4.34E-13 | 1.86E-13 | 2.60E-14 | 1.25E-14 | 3.04E-15 | 4.85E-15 | 2.54E-12 | 3.71E-12 | 2.23E-13 | 6.56E-15 |
| Pentachlorophenol | 2.04E-13 | 8.76E-14 | 1.22E-14 | 6.48E-14 | 1.57E-14 | 2.51E-14 | 1.46E-10 | 1.92E-12 | 9.33E-11 | 2.50E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 9.39E-11 | 4.04E-11 | 5.63E-12 | 2.71E-11 | 6.58E-12 | 1.05E-11 | 1.04E-09 | 6.44E-10 | 7.88E-11 | -- |
| Arsenic | 9.31E-12 | 4.00E-12 | 5.59E-13 | 8.07E-13 | 1.96E-13 | 3.13E-13 | 1.00E-10 | 1.27E-11 | 2.09E-12 | -- |
| Barium | 6.61E-11 | 2.84E-11 | 3.97E-12 | 1.91E-11 | 4.63E-12 | 7.40E-12 | 7.74E-10 | 4.58E-10 | 2.77E-11 | -- |
| Beryllium | 5.92E-11 | 2.54E-11 | 3.55E-12 | 5.13E-12 | 1.24E-12 | 1.99E-12 | 9.51E-11 | 3.28E-11 | 2.48E-12 | -- |
| Boron | 3.65E-10 | 1.57E-10 | 2.19E-11 | 1.06E-10 | 2.56E-11 | 4.09E-11 | 1.55E-07 | 1.77E-07 | 2.04E-08 | -- |
| Cadmium | 3.90E-10 | 1.68E-10 | 2.34E-11 | 1.58E-10 | 3.82E-11 | 6.11E-11 | 8.70E-09 | 1.05E-08 | 6.98E-10 | -- |
| Chromium (Total) | 3.28E-11 | 1.41E-11 | 1.97E-12 | 3.79E-12 | 9.19E-13 | 1.47E-12 | 5.14E-10 | 3.44E-11 | 4.13E-12 | -- |
| Chromium VI | 4.66E-12 | 2.00E-12 | 2.80E-13 | 1.21E-12 | 2.94E-13 | 4.70E-13 | 7.31E-11 | 4.89E-12 | 5.87E-13 | -- |
| Cobalt | 1.98E-10 | 8.53E-11 | 1.19E-11 | 5.74E-11 | 1.39E-11 | 2.22E-11 | 1.52E-09 | 3.69E-10 | 3.89E-11 | -- |
| Lead | 9.06E-09 | 3.90E-09 | 5.44E-10 | 1.57E-10 | 3.81E-11 | 6.09E-11 | 2.91E-08 | 2.65E-08 | 2.28E-09 | -- |
| Mercury - Inorganic | 1.19E-09 | 5.13E-10 | 7.17E-11 | 1.73E-10 | 4.18E-11 | 6.68E-11 | 3.66E-09 | 3.72E-09 | 1.20E-09 | 1.65E-09 |
| Methyl Mercury | 2.37E-11 | 1.02E-11 | 1.42E-12 | 1.37E-11 | 3.32E-12 | 5.31E-12 | 4.15E-10 | 1.50E-10 | 6.57E-11 | 4.66E-10 |
| Nickel | 4.25E-09 | 1.83E-09 | 2.55E-10 | 4.30E-09 | 1.04E-09 | 1.67E-09 | 2.48E-08 | 8.52E-09 | 9.52E-10 | -- |
| Phosphorus | 1.27E-10 | 5.48E-11 | 7.65E-12 | 3.68E-11 | 8.93E-12 | 1.43E-11 | 7.57E-08 | 9.59E-08 | 1.25E-08 | -- |
| Selenium | 1.88E-12 | 8.07E-13 | 1.13E-13 | 1.08E-14 | 2.63E-15 | 4.20E-15 | 1.10E-10 | 7.87E-12 | 1.16E-12 | -- |
| Silver | 2.15E-11 | 9.26E-12 | 1.29E-12 | 1.56E-11 | 3.77E-12 | 6.02E-12 | 1.17E-09 | 6.39E-10 | 6.03E-11 | -- |
| Thallium | 2.07E-09 | 8.88E-10 | 1.24E-10 | 5.97E-11 | 1.45E-11 | 2.31E-11 | 8.76E-09 | 3.81E-10 | 2.31E-11 | -- |
| Tin | 2.24E-09 | 9.63E-10 | 1.34E-10 | 6.47E-10 | 1.57E-10 | 2.51E-10 | 6.82E-09 | 4.36E-09 | 3.76E-10 | -- |
| Vanadium | 2.14E-10 | 9.20E-11 | 1.28E-11 | 6.18E-11 | 1.50E-11 | 2.39E-11 | 3.58E-10 | 1.53E-10 | 1.80E-11 | -- |
| Zinc | 9.32E-09 | 4.01E-09 | 5.59E-10 | 5.39E-10 | 1.31E-10 | 2.09E-10 | 1.77E-07 | 1.94E-07 | 2.35E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Port Darlington**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81E-12 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.40E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.69E-11 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.00E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.34E-14 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.15E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-14 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.58E-11 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.55E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.06E-14 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.55E-12 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.15E-12 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.91E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.39E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.53E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.08E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.75E-11 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.16E-08 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.76E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.84E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.92E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.48E-10 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.21E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Solina Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.12E-13 | 9.11E-14 | 1.27E-14 | 1.23E-13 | 2.97E-14 | 4.74E-14 | 6.76E-12 | 9.85E-12 | 1.26E-12 | 1.16E-11 |
| Anthracene | 2.09E-13 | 8.99E-14 | 1.25E-14 | 1.75E-13 | 4.25E-14 | 6.79E-14 | 3.00E-12 | 4.37E-12 | 8.82E-15 | 5.94E-16 |
| Fluorene | 2.11E-13 | 9.06E-14 | 1.26E-14 | 1.22E-13 | 2.95E-14 | 4.72E-14 | 4.50E-12 | 6.57E-12 | 1.12E-14 | 2.23E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 3.95E-11 | 1.70E-11 | 2.37E-12 | 1.60E-11 | 3.88E-12 | 6.19E-12 | 3.97E-11 | 5.76E-11 | 1.06E-11 | 3.27E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.90E-14 | 1.25E-14 | 1.74E-15 | 2.51E-15 | 6.09E-16 | 9.73E-16 | 3.71E-14 | 2.84E-14 | 8.34E-15 | 7.16E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.21E-16 | 5.21E-17 | 7.27E-18 | 7.00E-17 | 1.70E-17 | 2.71E-17 | 2.51E-14 | 3.62E-14 | 3.01E-13 | 5.91E-16 |
| Bromoform | 3.38E-16 | 1.45E-16 | 2.03E-17 | 1.07E-16 | 2.60E-17 | 4.16E-17 | 8.20E-14 | 1.20E-13 | 1.16E-13 | 3.99E-17 |
| Carbon Tetrachloride | 2.42E-17 | 1.04E-17 | 1.45E-18 | 6.99E-17 | 1.70E-17 | 2.71E-17 | 3.41E-15 | 4.85E-15 | 6.44E-14 | 1.55E-16 |
| Chloroform | 5.43E-17 | 2.33E-17 | 3.26E-18 | 1.57E-17 | 3.80E-18 | 6.07E-18 | 2.17E-14 | 3.15E-14 | 1.53E-13 | 2.85E-16 |
| Dichloromethane | 9.73E-15 | 4.18E-15 | 5.84E-16 | 2.81E-15 | 6.82E-16 | 1.09E-15 | 9.84E-12 | 1.44E-11 | 9.80E-11 | 2.97E-14 |
| O-Terphenyl | 6.71E-13 | 2.88E-13 | 4.02E-14 | 3.88E-13 | 9.40E-14 | 1.50E-13 | 2.56E-12 | 3.60E-12 | 4.22E-13 | 1.55E-13 |
| Trichlorofluoromethane (FREON 11) | 2.51E-15 | 1.08E-15 | 1.50E-16 | 1.45E-15 | 3.51E-16 | 5.61E-16 | 5.20E-13 | 7.49E-13 | 5.70E-12 | 1.25E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 9.53E-14 | 4.10E-14 | 5.72E-15 | 2.75E-14 | 6.67E-15 | 1.07E-14 | 9.13E-13 | 1.33E-12 | 2.79E-12 | 3.93E-16 |
| 1,2,4-Trichlorobenzene | 2.25E-15 | 9.66E-16 | 1.35E-16 | 5.19E-16 | 1.26E-16 | 2.01E-16 | 6.26E-14 | 9.13E-14 | 4.87E-14 | 1.03E-16 |
| 1,2-Dichlorobenzene | 3.02E-14 | 1.30E-14 | 1.81E-15 | 8.73E-15 | 2.12E-15 | 3.38E-15 | 1.96E-12 | 2.80E-12 | 2.07E-11 | 6.56E-14 |
| Hexachlorobenzene | 4.09E-14 | 1.76E-14 | 2.45E-15 | 1.54E-14 | 3.73E-15 | 5.95E-15 | 2.03E-13 | 2.95E-13 | 2.91E-13 | 2.68E-15 |
| Pentachlorobenzene | 1.48E-12 | 6.37E-13 | 8.88E-14 | 4.28E-14 | 1.04E-14 | 1.66E-14 | 8.68E-12 | 1.27E-11 | 7.62E-13 | 9.35E-15 |
| Pentachlorophenol | 6.96E-13 | 2.99E-13 | 4.18E-14 | 2.21E-13 | 5.37E-14 | 8.57E-14 | 2.11E-10 | 6.54E-12 | 3.19E-10 | 3.56E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.51E-10 | 1.51E-10 | 2.11E-11 | 1.02E-10 | 2.46E-11 | 3.93E-11 | 3.49E-09 | 2.41E-09 | 2.95E-10 | -- |
| Arsenic | 3.49E-11 | 1.50E-11 | 2.09E-12 | 3.02E-12 | 7.33E-13 | 1.17E-12 | 3.15E-10 | 4.75E-11 | 7.81E-12 | -- |
| Barium | 2.47E-10 | 1.06E-10 | 1.48E-11 | 7.15E-11 | 1.73E-11 | 2.77E-11 | 2.59E-09 | 1.71E-09 | 1.04E-10 | -- |
| Beryllium | 2.21E-10 | 9.52E-11 | 1.33E-11 | 1.92E-11 | 4.65E-12 | 7.43E-12 | 3.08E-10 | 1.23E-10 | 9.30E-12 | -- |
| Boron | 1.37E-09 | 5.88E-10 | 8.20E-11 | 3.95E-10 | 9.58E-11 | 1.53E-10 | 5.57E-07 | 6.63E-07 | 7.66E-08 | -- |
| Cadmium | 1.46E-09 | 6.27E-10 | 8.75E-11 | 5.90E-10 | 1.43E-10 | 2.29E-10 | 3.16E-08 | 3.92E-08 | 2.61E-09 | -- |
| Chromium (Total) | 1.23E-10 | 5.28E-11 | 7.36E-12 | 1.42E-11 | 3.44E-12 | 5.49E-12 | 1.60E-09 | 1.29E-10 | 1.55E-11 | -- |
| Chromium VI | 1.75E-11 | 7.50E-12 | 1.05E-12 | 4.54E-12 | 1.10E-12 | 1.76E-12 | 2.27E-10 | 1.83E-11 | 2.20E-12 | -- |
| Cobalt | 7.43E-10 | 3.19E-10 | 4.46E-11 | 2.15E-10 | 5.21E-11 | 8.32E-11 | 4.84E-09 | 1.38E-09 | 1.46E-10 | -- |
| Lead | 3.39E-08 | 1.46E-08 | 2.03E-09 | 5.88E-10 | 1.43E-10 | 2.28E-10 | 1.01E-07 | 9.92E-08 | 8.54E-09 | -- |
| Mercury - Inorganic | 2.65E-09 | 1.14E-09 | 1.59E-10 | 3.83E-10 | 9.28E-11 | 1.48E-10 | 7.48E-09 | 8.26E-09 | 2.67E-09 | 2.36E-09 |
| Methyl Mercury | 8.88E-11 | 3.82E-11 | 5.33E-12 | 5.13E-11 | 1.24E-11 | 1.99E-11 | 8.98E-10 | 5.61E-10 | 2.46E-10 | 6.65E-10 |
| Nickel | 1.59E-08 | 6.84E-09 | 9.55E-10 | 1.61E-08 | 3.90E-09 | 6.24E-09 | 8.03E-08 | 3.19E-08 | 3.56E-09 | -- |
| Phosphorus | 4.77E-10 | 2.05E-10 | 2.86E-11 | 1.38E-10 | 3.34E-11 | 5.34E-11 | 2.77E-07 | 3.59E-07 | 4.67E-08 | -- |
| Selenium | 7.03E-12 | 3.02E-12 | 4.22E-13 | 4.06E-14 | 9.85E-15 | 1.57E-14 | 3.43E-10 | 2.95E-11 | 4.33E-12 | -- |
| Silver | 8.06E-11 | 3.47E-11 | 4.84E-12 | 5.82E-11 | 1.41E-11 | 2.26E-11 | 3.89E-09 | 2.39E-09 | 2.26E-10 | -- |
| Thallium | 7.73E-09 | 3.32E-09 | 4.64E-10 | 2.24E-10 | 5.42E-11 | 8.66E-11 | 2.72E-08 | 1.43E-09 | 8.66E-11 | -- |
| Tin | 8.38E-09 | 3.60E-09 | 5.03E-10 | 2.42E-09 | 5.87E-10 | 9.38E-10 | 2.30E-08 | 1.63E-08 | 1.41E-09 | -- |
| Vanadium | 8.01E-10 | 3.44E-10 | 4.80E-11 | 2.31E-10 | 5.61E-11 | 8.96E-11 | 1.17E-09 | 5.71E-10 | 6.72E-11 | -- |
| Zinc | 3.49E-08 | 1.50E-08 | 2.09E-09 | 2.02E-09 | 4.89E-10 | 7.81E-10 | 6.32E-07 | 7.28E-07 | 8.79E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Solina Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.97E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.93E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.63E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.19E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.37E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.99E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.23E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.78E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.44E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.93E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.89E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.27E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.65E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.82E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.53E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.84E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.87E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.72E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.06E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.72E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.38E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.29E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Tooley**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.79E-13 | 1.63E-13 | 2.27E-14 | 2.19E-13 | 5.31E-14 | 8.48E-14 | 1.21E-11 | 1.76E-11 | 2.25E-12 | 2.08E-11 |
| Anthracene | 3.73E-13 | 1.61E-13 | 2.24E-14 | 3.13E-13 | 7.59E-14 | 1.21E-13 | 5.35E-12 | 7.80E-12 | 1.57E-14 | 6.20E-16 |
| Fluorene | 3.77E-13 | 1.62E-13 | 2.26E-14 | 2.18E-13 | 5.28E-14 | 8.43E-14 | 8.04E-12 | 1.17E-11 | 2.00E-14 | 2.33E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.03E-11 | 3.02E-11 | 4.22E-12 | 2.85E-11 | 6.90E-12 | 1.10E-11 | 7.04E-11 | 1.03E-10 | 1.89E-11 | 3.41E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 5.34E-14 | 2.30E-14 | 3.20E-15 | 4.63E-15 | 1.12E-15 | 1.79E-15 | 6.45E-14 | 5.22E-14 | 1.54E-14 | 7.47E-15 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.17E-16 | 9.31E-17 | 1.30E-17 | 1.25E-16 | 3.03E-17 | 4.85E-17 | 4.47E-14 | 6.47E-14 | 5.37E-13 | 6.17E-16 |
| Bromoform | 6.03E-16 | 2.59E-16 | 3.62E-17 | 1.92E-16 | 4.65E-17 | 7.42E-17 | 1.46E-13 | 2.14E-13 | 2.08E-13 | 4.16E-17 |
| Carbon Tetrachloride | 4.32E-17 | 1.86E-17 | 2.59E-18 | 1.25E-16 | 3.03E-17 | 4.84E-17 | 6.02E-15 | 8.66E-15 | 1.15E-13 | 1.62E-16 |
| Chloroform | 9.69E-17 | 4.17E-17 | 5.82E-18 | 2.80E-17 | 6.79E-18 | 1.08E-17 | 3.87E-14 | 5.63E-14 | 2.73E-13 | 2.98E-16 |
| Dichloromethane | 1.74E-14 | 7.47E-15 | 1.04E-15 | 5.02E-15 | 1.22E-15 | 1.95E-15 | 1.76E-11 | 2.56E-11 | 1.75E-10 | 3.10E-14 |
| O-Terphenyl | 1.20E-12 | 5.15E-13 | 7.19E-14 | 6.93E-13 | 1.68E-13 | 2.68E-13 | 4.50E-12 | 6.44E-12 | 7.53E-13 | 1.62E-13 |
| Trichlorofluoromethane (FREON 11) | 4.48E-15 | 1.93E-15 | 2.69E-16 | 2.59E-15 | 6.28E-16 | 1.00E-15 | 9.24E-13 | 1.34E-12 | 1.02E-11 | 1.31E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.70E-13 | 7.32E-14 | 1.02E-14 | 4.92E-14 | 1.19E-14 | 1.90E-14 | 1.63E-12 | 2.38E-12 | 4.99E-12 | 4.10E-16 |
| 1,2,4-Trichlorobenzene | 4.01E-15 | 1.72E-15 | 2.41E-16 | 9.28E-16 | 2.25E-16 | 3.59E-16 | 1.12E-13 | 1.63E-13 | 8.70E-14 | 1.07E-16 |
| 1,2-Dichlorobenzene | 5.40E-14 | 2.32E-14 | 3.24E-15 | 1.56E-14 | 3.78E-15 | 6.04E-15 | 3.46E-12 | 5.00E-12 | 3.71E-11 | 6.85E-14 |
| Hexachlorobenzene | 7.31E-14 | 3.14E-14 | 4.39E-15 | 2.75E-14 | 6.66E-15 | 1.06E-14 | 3.62E-13 | 5.27E-13 | 5.21E-13 | 2.80E-15 |
| Pentachlorobenzene | 2.64E-12 | 1.14E-12 | 1.59E-13 | 7.64E-14 | 1.85E-14 | 2.96E-14 | 1.55E-11 | 2.26E-11 | 1.36E-12 | 9.76E-15 |
| Pentachlorophenol | 1.24E-12 | 5.35E-13 | 7.46E-14 | 3.95E-13 | 9.58E-14 | 1.53E-13 | 2.24E-10 | 1.17E-11 | 5.69E-10 | 3.71E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 6.50E-10 | 2.79E-10 | 3.90E-11 | 1.88E-10 | 4.55E-11 | 7.27E-11 | 6.36E-09 | 4.46E-09 | 5.45E-10 | -- |
| Arsenic | 6.45E-11 | 2.77E-11 | 3.87E-12 | 5.59E-12 | 1.36E-12 | 2.16E-12 | 5.68E-10 | 8.78E-11 | 1.44E-11 | -- |
| Barium | 4.57E-10 | 1.97E-10 | 2.74E-11 | 1.32E-10 | 3.20E-11 | 5.12E-11 | 4.72E-09 | 3.17E-09 | 1.92E-10 | -- |
| Beryllium | 4.09E-10 | 1.76E-10 | 2.45E-11 | 3.55E-11 | 8.60E-12 | 1.37E-11 | 5.58E-10 | 2.27E-10 | 1.72E-11 | -- |
| Boron | 2.53E-09 | 1.09E-09 | 1.52E-10 | 7.31E-10 | 1.77E-10 | 2.83E-10 | 1.02E-06 | 1.23E-06 | 1.42E-07 | -- |
| Cadmium | 2.70E-09 | 1.16E-09 | 1.62E-10 | 1.09E-09 | 2.65E-10 | 4.23E-10 | 5.81E-08 | 7.25E-08 | 4.83E-09 | -- |
| Chromium (Total) | 2.27E-10 | 9.76E-11 | 1.36E-11 | 2.62E-11 | 6.36E-12 | 1.02E-11 | 2.88E-09 | 2.38E-10 | 2.86E-11 | -- |
| Chromium VI | 3.23E-11 | 1.39E-11 | 1.94E-12 | 8.40E-12 | 2.04E-12 | 3.25E-12 | 4.10E-10 | 3.39E-11 | 4.07E-12 | -- |
| Cobalt | 1.37E-09 | 5.91E-10 | 8.24E-11 | 3.97E-10 | 9.62E-11 | 1.54E-10 | 8.75E-09 | 2.56E-09 | 2.69E-10 | -- |
| Lead | 6.26E-08 | 2.69E-08 | 3.76E-09 | 1.09E-09 | 2.63E-10 | 4.21E-10 | 1.86E-07 | 1.83E-07 | 1.58E-08 | -- |
| Mercury - Inorganic | 4.23E-09 | 1.82E-09 | 2.54E-10 | 6.12E-10 | 1.48E-10 | 2.37E-10 | 1.13E-08 | 1.32E-08 | 4.26E-09 | 2.46E-09 |
| Methyl Mercury | 1.64E-10 | 7.05E-11 | 9.83E-12 | 9.47E-11 | 2.30E-11 | 3.67E-11 | 1.34E-09 | 1.04E-09 | 4.54E-10 | 6.94E-10 |
| Nickel | 2.94E-08 | 1.27E-08 | 1.77E-09 | 2.98E-08 | 7.22E-09 | 1.15E-08 | 1.46E-07 | 5.89E-08 | 6.59E-09 | -- |
| Phosphorus | 8.83E-10 | 3.79E-10 | 5.30E-11 | 2.55E-10 | 6.18E-11 | 9.88E-11 | 5.11E-07 | 6.64E-07 | 8.65E-08 | -- |
| Selenium | 1.30E-11 | 5.59E-12 | 7.80E-13 | 7.51E-14 | 1.82E-14 | 2.91E-14 | 6.17E-10 | 5.45E-11 | 8.00E-12 | -- |
| Silver | 1.49E-10 | 6.41E-11 | 8.94E-12 | 1.08E-10 | 2.61E-11 | 4.17E-11 | 7.08E-09 | 4.43E-09 | 4.17E-10 | -- |
| Thallium | 1.43E-08 | 6.15E-09 | 8.58E-10 | 4.13E-10 | 1.00E-10 | 1.60E-10 | 4.89E-08 | 2.64E-09 | 1.60E-10 | -- |
| Tin | 1.55E-08 | 6.66E-09 | 9.29E-10 | 4.48E-09 | 1.08E-09 | 1.73E-09 | 4.19E-08 | 3.01E-08 | 2.60E-09 | -- |
| Vanadium | 1.48E-09 | 6.36E-10 | 8.87E-11 | 4.27E-10 | 1.04E-10 | 1.65E-10 | 2.13E-09 | 1.06E-09 | 1.24E-10 | -- |
| Zinc | 6.45E-08 | 2.77E-08 | 3.87E-09 | 3.73E-09 | 9.04E-10 | 1.44E-09 | 1.16E-06 | 1.35E-06 | 1.62E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Tooley**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.36E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.43E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.48E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.69E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.68E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.18E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.34E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.69E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.57E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.57E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.36E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.18E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-08 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.75E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.98E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.47E-09 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.53E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.10E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.43E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.80E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.85E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.93E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.03E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-06 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.99E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.37E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.21E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.23E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Farmer**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 5.11E-13 | 2.20E-13 | 3.06E-14 | 2.95E-13 | 7.16E-14 | 1.14E-13 | 2.93E-11 | 5.25E-11 | 4.96E-12 | 7.92E-11 |
| Anthracene | 5.04E-13 | 2.17E-13 | 3.02E-14 | 4.22E-13 | 1.02E-13 | 1.63E-13 | 1.30E-11 | 2.33E-11 | 3.47E-14 | 2.09E-15 |
| Fluorene | 5.08E-13 | 2.18E-13 | 3.05E-14 | 2.94E-13 | 7.12E-14 | 1.14E-13 | 1.95E-11 | 3.51E-11 | 4.40E-14 | 7.87E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 9.49E-11 | 4.08E-11 | 5.69E-12 | 3.84E-11 | 9.31E-12 | 1.49E-11 | 1.71E-10 | 3.06E-10 | 4.15E-11 | 1.15E-12 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.85E-14 | 3.37E-14 | 4.71E-15 | 6.81E-15 | 1.65E-15 | 2.64E-15 | 1.68E-13 | 1.70E-13 | 3.69E-14 | 2.52E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.92E-16 | 1.26E-16 | 1.75E-17 | 1.69E-16 | 4.09E-17 | 6.54E-17 | 1.09E-13 | 1.93E-13 | 1.18E-12 | 2.09E-15 |
| Bromoform | 8.13E-16 | 3.50E-16 | 4.88E-17 | 2.59E-16 | 6.27E-17 | 1.00E-16 | 3.56E-13 | 6.39E-13 | 4.57E-13 | 1.41E-16 |
| Carbon Tetrachloride | 5.83E-17 | 2.51E-17 | 3.50E-18 | 1.68E-16 | 4.08E-17 | 6.52E-17 | 1.46E-14 | 2.59E-14 | 2.53E-13 | 5.47E-16 |
| Chloroform | 1.31E-16 | 5.62E-17 | 7.85E-18 | 3.78E-17 | 9.16E-18 | 1.46E-17 | 9.41E-14 | 1.68E-13 | 6.01E-13 | 1.01E-15 |
| Dichloromethane | 2.34E-14 | 1.01E-14 | 1.41E-15 | 6.78E-15 | 1.64E-15 | 2.62E-15 | 4.27E-11 | 7.66E-11 | 3.86E-10 | 1.05E-13 |
| O-Terphenyl | 1.62E-12 | 6.95E-13 | 9.70E-14 | 9.34E-13 | 2.27E-13 | 3.62E-13 | 1.09E-11 | 1.92E-11 | 1.66E-12 | 5.48E-13 |
| Trichlorofluoromethane (FREON 11) | 6.04E-15 | 2.60E-15 | 3.62E-16 | 3.49E-15 | 8.47E-16 | 1.35E-15 | 2.25E-12 | 4.00E-12 | 2.24E-11 | 4.42E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.30E-13 | 9.87E-14 | 1.38E-14 | 6.63E-14 | 1.61E-14 | 2.57E-14 | 3.97E-12 | 7.12E-12 | 1.10E-11 | 1.39E-15 |
| 1,2,4-Trichlorobenzene | 5.41E-15 | 2.33E-15 | 3.25E-16 | 1.25E-15 | 3.03E-16 | 4.85E-16 | 2.72E-13 | 4.87E-13 | 1.92E-13 | 3.62E-16 |
| 1,2-Dichlorobenzene | 7.28E-14 | 3.13E-14 | 4.37E-15 | 2.10E-14 | 5.10E-15 | 8.15E-15 | 8.41E-12 | 1.49E-11 | 8.16E-11 | 2.32E-13 |
| Hexachlorobenzene | 9.86E-14 | 4.24E-14 | 5.92E-15 | 3.70E-14 | 8.98E-15 | 1.43E-14 | 8.80E-13 | 1.57E-12 | 1.15E-12 | 9.47E-15 |
| Pentachlorobenzene | 3.57E-12 | 1.53E-12 | 2.14E-13 | 1.03E-13 | 2.50E-14 | 3.99E-14 | 3.77E-11 | 6.76E-11 | 3.00E-12 | 3.30E-14 |
| Pentachlorophenol | 1.68E-12 | 7.21E-13 | 1.01E-13 | 5.33E-13 | 1.29E-13 | 2.07E-13 | 4.84E-10 | 3.49E-11 | 1.25E-09 | 1.25E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 9.55E-10 | 4.11E-10 | 5.73E-11 | 2.76E-10 | 6.69E-11 | 1.07E-10 | 1.68E-08 | 1.45E-08 | 1.31E-09 | -- |
| Arsenic | 9.48E-11 | 4.08E-11 | 5.69E-12 | 8.22E-12 | 1.99E-12 | 3.18E-12 | 1.49E-09 | 2.86E-10 | 3.46E-11 | -- |
| Barium | 6.73E-10 | 2.89E-10 | 4.04E-11 | 1.94E-10 | 4.71E-11 | 7.53E-11 | 1.25E-08 | 1.03E-08 | 4.61E-10 | -- |
| Beryllium | 6.01E-10 | 2.59E-10 | 3.61E-11 | 5.21E-11 | 1.26E-11 | 2.02E-11 | 1.47E-09 | 7.39E-10 | 4.12E-11 | -- |
| Boron | 3.72E-09 | 1.60E-09 | 2.23E-10 | 1.07E-09 | 2.61E-10 | 4.16E-10 | 2.71E-06 | 3.99E-06 | 3.40E-07 | -- |
| Cadmium | 3.97E-09 | 1.70E-09 | 2.38E-10 | 1.60E-09 | 3.89E-10 | 6.21E-10 | 1.54E-07 | 2.36E-07 | 1.16E-08 | -- |
| Chromium (Total) | 3.34E-10 | 1.43E-10 | 2.00E-11 | 3.86E-11 | 9.35E-12 | 1.49E-11 | 7.57E-09 | 7.75E-10 | 6.86E-11 | -- |
| Chromium VI | 4.75E-11 | 2.04E-11 | 2.85E-12 | 1.23E-11 | 2.99E-12 | 4.78E-12 | 1.08E-09 | 1.10E-10 | 9.76E-12 | -- |
| Cobalt | 2.02E-09 | 8.68E-10 | 1.21E-10 | 5.84E-10 | 1.42E-10 | 2.26E-10 | 2.30E-08 | 8.32E-09 | 6.46E-10 | -- |
| Lead | 9.21E-08 | 3.96E-08 | 5.53E-09 | 1.60E-09 | 3.87E-10 | 6.19E-10 | 4.91E-07 | 5.96E-07 | 3.79E-08 | -- |
| Mercury - Inorganic | 4.81E-09 | 2.07E-09 | 2.88E-10 | 6.95E-10 | 1.68E-10 | 2.69E-10 | 2.37E-08 | 3.32E-08 | 7.91E-09 | 8.31E-09 |
| Methyl Mercury | 2.41E-10 | 1.04E-10 | 1.45E-11 | 1.39E-10 | 3.38E-11 | 5.40E-11 | 3.35E-09 | 3.37E-09 | 1.09E-09 | 2.34E-09 |
| Nickel | 4.33E-08 | 1.86E-08 | 2.60E-09 | 4.38E-08 | 1.06E-08 | 1.69E-08 | 3.83E-07 | 1.92E-07 | 1.58E-08 | -- |
| Phosphorus | 1.30E-09 | 5.58E-10 | 7.79E-11 | 3.75E-10 | 9.09E-11 | 1.45E-10 | 1.35E-06 | 2.16E-06 | 2.07E-07 | -- |
| Selenium | 1.91E-11 | 8.22E-12 | 1.15E-12 | 1.10E-13 | 2.68E-14 | 4.28E-14 | 1.62E-09 | 1.77E-10 | 1.92E-11 | -- |
| Silver | 2.19E-10 | 9.42E-11 | 1.32E-11 | 1.58E-10 | 3.84E-11 | 6.13E-11 | 1.87E-08 | 1.44E-08 | 1.00E-09 | -- |
| Thallium | 2.10E-08 | 9.04E-09 | 1.26E-09 | 6.07E-10 | 1.47E-10 | 2.35E-10 | 1.29E-07 | 8.59E-09 | 3.84E-10 | -- |
| Tin | 2.28E-08 | 9.79E-09 | 1.37E-09 | 6.58E-09 | 1.60E-09 | 2.55E-09 | 1.11E-07 | 9.81E-08 | 6.24E-09 | -- |
| Vanadium | 2.17E-09 | 9.35E-10 | 1.30E-10 | 6.28E-10 | 1.52E-10 | 2.43E-10 | 5.60E-09 | 3.43E-09 | 2.98E-10 | -- |
| Zinc | 9.48E-08 | 4.08E-08 | 5.69E-09 | 5.48E-09 | 1.33E-09 | 2.12E-09 | 3.07E-06 | 4.38E-06 | 3.90E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Project Alone Case - 400,000 tpy**
**Farmer**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | 3.95E-13 | 8.28E-13 | 4.91E-14 | 1.06E-13 | 9.76E-14 | -- | 1.69E-10 |
| Anthracene | -- | -- | -- | 2.93E-13 | 5.66E-13 | 4.01E-14 | 9.20E-14 | 8.49E-14 | -- | 3.88E-11 |
| Fluorene | -- | -- | -- | 3.52E-13 | 7.05E-13 | 4.48E-14 | 9.94E-14 | 9.17E-14 | -- | 5.72E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | 1.78E-09 | 2.23E-09 | 3.36E-10 | 8.95E-12 | 8.25E-12 | -- | 5.08E-09 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | 2.07E-12 | 3.24E-12 | 2.43E-13 | 6.12E-15 | 5.65E-15 | -- | 6.10E-12 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | 1.02E-10 | 1.36E-10 | 3.69E-12 | 4.75E-14 | 4.38E-14 | -- | 2.43E-10 |
| Bromoform | -- | -- | -- | 2.80E-09 | 3.76E-09 | 1.02E-10 | 1.31E-12 | 1.21E-12 | -- | 6.67E-09 |
| Carbon Tetrachloride | -- | -- | -- | 3.22E-11 | 4.32E-11 | 1.17E-12 | 1.51E-14 | 1.39E-14 | -- | 7.69E-11 |
| Chloroform | -- | -- | -- | 1.95E-11 | 2.62E-11 | 7.10E-13 | 9.14E-15 | 8.43E-15 | -- | 4.73E-11 |
| Dichloromethane | -- | -- | -- | 2.15E-09 | 2.88E-09 | 7.81E-11 | 1.01E-12 | 9.28E-13 | -- | 5.62E-09 |
| O-Terphenyl | -- | -- | -- | 1.00E-10 | 1.53E-10 | 9.49E-12 | 2.33E-13 | 2.15E-13 | -- | 2.99E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | 1.16E-08 | 1.55E-08 | 4.21E-10 | 5.42E-12 | 5.00E-12 | -- | 2.76E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | 3.35E-11 | 4.74E-11 | 1.79E-12 | 4.06E-14 | 3.74E-14 | -- | 1.05E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | 2.05E-11 | 2.76E-11 | 7.60E-13 | 9.98E-15 | 9.21E-15 | -- | 4.98E-11 |
| 1,2-Dichlorobenzene | -- | -- | -- | 4.81E-10 | 6.47E-10 | 1.77E-11 | 2.31E-13 | 2.13E-13 | -- | 1.25E-09 |
| Hexachlorobenzene | -- | -- | -- | 3.33E-11 | 4.53E-11 | 1.42E-12 | 2.15E-14 | 1.98E-14 | -- | 8.38E-11 |
| Pentachlorobenzene | -- | -- | -- | 1.52E-10 | 2.48E-10 | 2.29E-11 | 5.63E-13 | 5.19E-13 | -- | 5.38E-10 |
| Pentachlorophenol | -- | -- | -- | 1.21E-10 | 2.45E-10 | 2.34E-12 | 6.66E-16 | 6.14E-16 | -- | 3.40E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | 5.53E-09 | 5.14E-09 | 2.48E-10 | 3.52E-12 | 3.25E-12 | -- | 4.54E-08 |
| Arsenic | -- | -- | -- | 1.03E-09 | 2.84E-10 | 3.72E-11 | 5.73E-13 | 5.29E-13 | -- | 3.32E-09 |
| Barium | -- | -- | -- | 5.52E-10 | 1.19E-08 | 2.33E-11 | 3.32E-13 | 3.07E-13 | -- | 3.70E-08 |
| Beryllium | -- | -- | -- | 7.15E-10 | 4.94E-12 | 7.17E-11 | 1.75E-12 | 1.61E-12 | -- | 4.02E-09 |
| Boron | -- | -- | -- | 2.68E-07 | 5.62E-07 | 1.26E-08 | 1.65E-10 | 1.52E-10 | -- | 7.89E-06 |
| Cadmium | -- | -- | -- | 3.13E-09 | 1.61E-09 | 2.11E-10 | 2.57E-09 | 9.78E-11 | -- | 4.18E-07 |
| Chromium (Total) | -- | -- | -- | 1.37E-08 | 3.47E-08 | 4.11E-10 | 5.62E-12 | 5.19E-12 | -- | 5.78E-08 |
| Chromium VI | -- | -- | -- | 1.95E-09 | 4.93E-09 | 5.84E-11 | 8.00E-13 | 7.38E-13 | -- | 8.23E-09 |
| Cobalt | -- | -- | -- | 1.49E-07 | 2.81E-07 | 6.74E-09 | 1.25E-10 | 1.15E-10 | -- | 4.72E-07 |
| Lead | -- | -- | -- | 4.39E-08 | 3.02E-07 | 3.87E-09 | 8.57E-11 | 7.91E-11 | -- | 1.62E-06 |
| Mercury - Inorganic | -- | -- | -- | 1.68E-08 | 4.62E-08 | 1.56E-11 | 4.85E-10 | 7.83E-10 | -- | 1.46E-07 |
| Methyl Mercury | -- | -- | -- | 2.57E-10 | 9.04E-10 | 1.38E-13 | 3.93E-12 | 6.35E-12 | -- | 1.19E-08 |
| Nickel | -- | -- | -- | 7.64E-07 | 1.12E-06 | 4.07E-08 | 7.91E-10 | 7.30E-10 | -- | 2.66E-06 |
| Phosphorus | -- | -- | -- | 5.65E-06 | 1.22E-05 | 3.83E-07 | 6.74E-09 | 6.22E-09 | -- | 2.20E-05 |
| Selenium | -- | -- | -- | 1.14E-09 | 2.79E-08 | 1.57E-09 | 9.40E-11 | 1.52E-10 | -- | 3.27E-08 |
| Silver | -- | -- | -- | 1.37E-08 | 8.72E-07 | 4.02E-10 | 3.72E-12 | 3.43E-12 | -- | 9.21E-07 |
| Thallium | -- | -- | -- | 2.06E-06 | 8.90E-07 | 1.16E-07 | 2.44E-09 | 2.25E-09 | -- | 3.24E-06 |
| Tin | -- | -- | -- | 3.01E-06 | 5.23E-06 | 2.46E-07 | 5.52E-09 | 5.09E-09 | -- | 8.75E-06 |
| Vanadium | -- | -- | -- | 6.07E-09 | 9.68E-09 | 6.44E-10 | 1.60E-11 | 1.48E-11 | -- | 3.00E-08 |
| Zinc | -- | -- | -- | 4.78E-08 | 1.62E-07 | 2.90E-09 | 4.84E-09 | 7.81E-09 | -- | 1.17E-05 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Bowmanville Subdivision**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.07E-13 | 1.32E-13 | 1.84E-14 | 1.77E-13 | 4.30E-14 | 6.87E-14 | 9.79E-12 | 1.43E-11 | 1.83E-12 | 1.69E-11 |
| Anthracene | 3.03E-13 | 1.30E-13 | 1.82E-14 | 2.54E-13 | 6.15E-14 | 9.83E-14 | 4.34E-12 | 6.32E-12 | 1.28E-14 | 1.25E-15 |
| Fluorene | 3.05E-13 | 1.31E-13 | 1.83E-14 | 1.76E-13 | 4.28E-14 | 6.83E-14 | 6.52E-12 | 9.52E-12 | 1.62E-14 | 4.70E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 5.73E-11 | 2.46E-11 | 3.44E-12 | 2.32E-11 | 5.62E-12 | 8.98E-12 | 5.76E-11 | 8.36E-11 | 1.54E-11 | 6.89E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.31E-14 | 1.42E-14 | 1.98E-15 | 2.87E-15 | 6.95E-16 | 1.11E-15 | 5.03E-14 | 3.23E-14 | 9.51E-15 | 1.51E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.75E-16 | 7.54E-17 | 1.05E-17 | 1.01E-16 | 2.46E-17 | 3.93E-17 | 3.66E-14 | 5.25E-14 | 4.35E-13 | 1.25E-15 |
| Bromoform | 4.89E-16 | 2.10E-16 | 2.93E-17 | 1.55E-16 | 3.77E-17 | 6.02E-17 | 1.19E-13 | 1.74E-13 | 1.68E-13 | 3.09E-17 |
| Carbon Tetrachloride | 3.50E-17 | 1.51E-17 | 2.10E-18 | 1.01E-16 | 2.46E-17 | 3.92E-17 | 4.88E-15 | 7.03E-15 | 9.33E-14 | 1.20E-16 |
| Chloroform | 7.86E-17 | 3.38E-17 | 4.71E-18 | 2.27E-17 | 5.50E-18 | 8.79E-18 | 3.16E-14 | 4.56E-14 | 2.21E-13 | 6.01E-16 |
| Dichloromethane | 1.41E-14 | 6.06E-15 | 8.45E-16 | 4.07E-15 | 9.87E-16 | 1.58E-15 | 1.43E-11 | 2.08E-11 | 1.42E-10 | 6.26E-14 |
| O-Terphenyl | 9.71E-13 | 4.18E-13 | 5.83E-14 | 5.61E-13 | 1.36E-13 | 2.17E-13 | 3.76E-12 | 5.22E-12 | 6.11E-13 | 3.27E-13 |
| Trichlorofluoromethane (FREON 11) | 3.63E-15 | 1.56E-15 | 2.18E-16 | 2.10E-15 | 5.09E-16 | 8.12E-16 | 7.58E-13 | 1.09E-12 | 8.25E-12 | 2.64E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.38E-13 | 5.93E-14 | 8.28E-15 | 3.99E-14 | 9.66E-15 | 1.54E-14 | 1.32E-12 | 1.93E-12 | 4.05E-12 | 8.27E-16 |
| 1,2,4-Trichlorobenzene | 3.25E-15 | 1.40E-15 | 1.95E-16 | 7.52E-16 | 1.82E-16 | 2.91E-16 | 9.06E-14 | 1.32E-13 | 7.05E-14 | 2.16E-16 |
| 1,2-Dichlorobenzene | 4.37E-14 | 1.88E-14 | 2.62E-15 | 1.26E-14 | 3.06E-15 | 4.90E-15 | 2.86E-12 | 4.05E-12 | 3.00E-11 | 1.38E-13 |
| Hexachlorobenzene | 5.92E-14 | 2.55E-14 | 3.55E-15 | 2.23E-14 | 5.40E-15 | 8.62E-15 | 2.96E-13 | 4.27E-13 | 4.22E-13 | 5.65E-15 |
| Pentachlorobenzene | 2.14E-12 | 9.22E-13 | 1.29E-13 | 6.20E-14 | 1.50E-14 | 2.40E-14 | 1.26E-11 | 1.84E-11 | 1.10E-12 | 1.97E-14 |
| Pentachlorophenol | 1.01E-12 | 4.33E-13 | 6.05E-14 | 3.20E-13 | 7.77E-14 | 1.24E-13 | 4.41E-10 | 9.47E-12 | 4.62E-10 | 7.49E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 4.00E-10 | 1.72E-10 | 2.40E-11 | 1.16E-10 | 2.80E-11 | 4.48E-11 | 4.52E-09 | 2.75E-09 | 3.36E-10 | -- |
| Arsenic | 3.97E-11 | 1.71E-11 | 2.38E-12 | 3.44E-12 | 8.35E-13 | 1.33E-12 | 4.41E-10 | 5.41E-11 | 8.89E-12 | -- |
| Barium | 2.82E-10 | 1.21E-10 | 1.69E-11 | 8.14E-11 | 1.97E-11 | 3.15E-11 | 3.37E-09 | 1.95E-09 | 1.18E-10 | -- |
| Beryllium | 2.52E-10 | 1.08E-10 | 1.51E-11 | 2.19E-11 | 5.30E-12 | 8.47E-12 | 4.16E-10 | 1.40E-10 | 1.06E-11 | -- |
| Boron | 1.56E-09 | 6.70E-10 | 9.34E-11 | 4.50E-10 | 1.09E-10 | 1.74E-10 | 6.64E-07 | 7.55E-07 | 8.72E-08 | -- |
| Cadmium | 1.66E-09 | 7.15E-10 | 9.97E-11 | 6.73E-10 | 1.63E-10 | 2.60E-10 | 3.73E-08 | 4.47E-08 | 2.98E-09 | -- |
| Chromium (Total) | 1.40E-10 | 6.01E-11 | 8.39E-12 | 1.62E-11 | 3.92E-12 | 6.26E-12 | 2.27E-09 | 1.47E-10 | 1.76E-11 | -- |
| Chromium VI | 1.99E-11 | 8.55E-12 | 1.19E-12 | 5.17E-12 | 1.25E-12 | 2.00E-12 | 3.22E-10 | 2.09E-11 | 2.50E-12 | -- |
| Cobalt | 8.46E-10 | 3.64E-10 | 5.08E-11 | 2.45E-10 | 5.93E-11 | 9.47E-11 | 6.65E-09 | 1.58E-09 | 1.66E-10 | -- |
| Lead | 3.87E-08 | 1.66E-08 | 2.32E-09 | 6.70E-10 | 1.62E-10 | 2.60E-10 | 1.26E-07 | 1.13E-07 | 9.74E-09 | -- |
| Mercury - Inorganic | 2.61E-09 | 1.12E-09 | 1.57E-10 | 3.77E-10 | 9.15E-11 | 1.46E-10 | 7.71E-09 | 8.14E-09 | 2.63E-09 | 2.57E-09 |
| Methyl Mercury | 1.01E-10 | 4.35E-11 | 6.07E-12 | 5.85E-11 | 1.42E-11 | 2.26E-11 | 1.04E-09 | 6.40E-10 | 2.80E-10 | 7.25E-10 |
| Nickel | 1.81E-08 | 7.80E-09 | 1.09E-09 | 1.83E-08 | 4.45E-09 | 7.10E-09 | 1.09E-07 | 3.63E-08 | 4.06E-09 | -- |
| Phosphorus | 5.43E-10 | 2.34E-10 | 3.26E-11 | 1.57E-10 | 3.81E-11 | 6.08E-11 | 3.24E-07 | 4.09E-07 | 5.32E-08 | -- |
| Selenium | 8.00E-12 | 3.44E-12 | 4.80E-13 | 4.63E-14 | 1.12E-14 | 1.79E-14 | 4.85E-10 | 3.36E-11 | 4.93E-12 | -- |
| Silver | 9.18E-11 | 3.95E-11 | 5.51E-12 | 6.63E-11 | 1.61E-11 | 2.57E-11 | 5.09E-09 | 2.73E-09 | 2.57E-10 | -- |
| Thallium | 8.81E-09 | 3.79E-09 | 5.29E-10 | 2.55E-10 | 6.17E-11 | 9.86E-11 | 3.87E-08 | 1.63E-09 | 9.86E-11 | -- |
| Tin | 9.55E-09 | 4.11E-09 | 5.73E-10 | 2.76E-09 | 6.69E-10 | 1.07E-09 | 2.97E-08 | 1.86E-08 | 1.60E-09 | -- |
| Vanadium | 9.12E-10 | 3.92E-10 | 5.47E-11 | 2.64E-10 | 6.39E-11 | 1.02E-10 | 1.57E-09 | 6.51E-10 | 7.66E-11 | -- |
| Zinc | 3.97E-08 | 1.71E-08 | 2.38E-09 | 2.30E-09 | 5.57E-10 | 8.89E-10 | 7.60E-07 | 8.29E-07 | 1.00E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Bowmanville Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.35E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.15E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.68E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.81E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.62E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.99E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.23E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.72E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.53E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.66E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.39E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.69E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.99E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.79E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.51E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.86E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.84E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.07E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.93E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.88E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.36E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.32E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.39E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.86E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Courtice Subdivision**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.30E-13 | 9.89E-14 | 1.38E-14 | 1.33E-13 | 3.22E-14 | 5.15E-14 | 7.34E-12 | 1.07E-11 | 1.37E-12 | 1.26E-11 |
| Anthracene | 2.27E-13 | 9.75E-14 | 1.36E-14 | 1.90E-13 | 4.61E-14 | 7.36E-14 | 3.25E-12 | 4.74E-12 | 9.56E-15 | 8.59E-16 |
| Fluorene | 2.29E-13 | 9.83E-14 | 1.37E-14 | 1.32E-13 | 3.20E-14 | 5.12E-14 | 4.88E-12 | 7.13E-12 | 1.21E-14 | 3.23E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.28E-11 | 1.84E-11 | 2.57E-12 | 1.73E-11 | 4.20E-12 | 6.71E-12 | 4.30E-11 | 6.24E-11 | 1.15E-11 | 4.73E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 2.37E-14 | 1.02E-14 | 1.42E-15 | 2.05E-15 | 4.97E-16 | 7.94E-16 | 3.53E-14 | 2.32E-14 | 6.81E-15 | 1.04E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.31E-16 | 5.65E-17 | 7.89E-18 | 7.60E-17 | 1.84E-17 | 2.94E-17 | 2.74E-14 | 3.93E-14 | 3.26E-13 | 8.56E-16 |
| Bromoform | 3.66E-16 | 1.58E-16 | 2.20E-17 | 1.16E-16 | 2.82E-17 | 4.51E-17 | 8.90E-14 | 1.30E-13 | 1.26E-13 | 2.12E-17 |
| Carbon Tetrachloride | 2.63E-17 | 1.13E-17 | 1.58E-18 | 7.59E-17 | 1.84E-17 | 2.94E-17 | 3.65E-15 | 5.26E-15 | 6.99E-14 | 8.26E-17 |
| Chloroform | 5.89E-17 | 2.53E-17 | 3.53E-18 | 1.70E-17 | 4.12E-18 | 6.59E-18 | 2.36E-14 | 3.42E-14 | 1.66E-13 | 4.13E-16 |
| Dichloromethane | 1.06E-14 | 4.54E-15 | 6.33E-16 | 3.05E-15 | 7.40E-16 | 1.18E-15 | 1.07E-11 | 1.56E-11 | 1.06E-10 | 4.30E-14 |
| O-Terphenyl | 7.28E-13 | 3.13E-13 | 4.37E-14 | 4.21E-13 | 1.02E-13 | 1.63E-13 | 2.81E-12 | 3.91E-12 | 4.58E-13 | 2.25E-13 |
| Trichlorofluoromethane (FREON 11) | 2.72E-15 | 1.17E-15 | 1.63E-16 | 1.57E-15 | 3.81E-16 | 6.09E-16 | 5.67E-13 | 8.13E-13 | 6.18E-12 | 1.81E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.03E-13 | 4.44E-14 | 6.20E-15 | 2.99E-14 | 7.24E-15 | 1.16E-14 | 9.91E-13 | 1.45E-12 | 3.03E-12 | 5.68E-16 |
| 1,2,4-Trichlorobenzene | 2.44E-15 | 1.05E-15 | 1.46E-16 | 5.63E-16 | 1.37E-16 | 2.18E-16 | 6.79E-14 | 9.91E-14 | 5.29E-14 | 1.49E-16 |
| 1,2-Dichlorobenzene | 3.28E-14 | 1.41E-14 | 1.97E-15 | 9.47E-15 | 2.30E-15 | 3.67E-15 | 2.14E-12 | 3.04E-12 | 2.25E-11 | 9.50E-14 |
| Hexachlorobenzene | 4.44E-14 | 1.91E-14 | 2.66E-15 | 1.67E-14 | 4.04E-15 | 6.46E-15 | 2.21E-13 | 3.20E-13 | 3.16E-13 | 3.88E-15 |
| Pentachlorobenzene | 1.61E-12 | 6.91E-13 | 9.64E-14 | 4.64E-14 | 1.13E-14 | 1.80E-14 | 9.42E-12 | 1.38E-11 | 8.27E-13 | 1.35E-14 |
| Pentachlorophenol | 7.55E-13 | 3.25E-13 | 4.53E-14 | 2.40E-13 | 5.82E-14 | 9.30E-14 | 3.04E-10 | 7.10E-12 | 3.46E-10 | 5.15E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.87E-10 | 1.24E-10 | 1.72E-11 | 8.31E-11 | 2.01E-11 | 3.22E-11 | 3.18E-09 | 1.97E-09 | 2.41E-10 | -- |
| Arsenic | 2.85E-11 | 1.23E-11 | 1.71E-12 | 2.47E-12 | 5.99E-13 | 9.58E-13 | 3.07E-10 | 3.88E-11 | 6.39E-12 | -- |
| Barium | 2.02E-10 | 8.70E-11 | 1.21E-11 | 5.85E-11 | 1.42E-11 | 2.26E-11 | 2.37E-09 | 1.40E-09 | 8.50E-11 | -- |
| Beryllium | 1.81E-10 | 7.78E-11 | 1.09E-11 | 1.57E-11 | 3.80E-12 | 6.08E-12 | 2.91E-10 | 1.00E-10 | 7.60E-12 | -- |
| Boron | 1.12E-09 | 4.81E-10 | 6.71E-11 | 3.23E-10 | 7.84E-11 | 1.25E-10 | 4.74E-07 | 5.42E-07 | 6.26E-08 | -- |
| Cadmium | 1.19E-09 | 5.13E-10 | 7.16E-11 | 4.83E-10 | 1.17E-10 | 1.87E-10 | 2.66E-08 | 3.21E-08 | 2.14E-09 | -- |
| Chromium (Total) | 1.00E-10 | 4.32E-11 | 6.02E-12 | 1.16E-11 | 2.81E-12 | 4.49E-12 | 1.58E-09 | 1.05E-10 | 1.26E-11 | -- |
| Chromium VI | 1.43E-11 | 6.14E-12 | 8.57E-13 | 3.71E-12 | 9.00E-13 | 1.44E-12 | 2.24E-10 | 1.50E-11 | 1.80E-12 | -- |
| Cobalt | 6.08E-10 | 2.61E-10 | 3.65E-11 | 1.76E-10 | 4.26E-11 | 6.80E-11 | 4.64E-09 | 1.13E-09 | 1.19E-10 | -- |
| Lead | 2.77E-08 | 1.19E-08 | 1.66E-09 | 4.81E-10 | 1.17E-10 | 1.86E-10 | 8.89E-08 | 8.11E-08 | 6.98E-09 | -- |
| Mercury - Inorganic | 1.75E-09 | 7.53E-10 | 1.05E-10 | 2.53E-10 | 6.14E-11 | 9.81E-11 | 5.22E-09 | 5.47E-09 | 1.77E-09 | 1.77E-09 |
| Methyl Mercury | 7.26E-11 | 3.12E-11 | 4.35E-12 | 4.19E-11 | 1.02E-11 | 1.62E-11 | 7.30E-10 | 4.59E-10 | 2.01E-10 | 4.98E-10 |
| Nickel | 1.30E-08 | 5.60E-09 | 7.81E-10 | 1.32E-08 | 3.19E-09 | 5.10E-09 | 7.60E-08 | 2.61E-08 | 2.92E-09 | -- |
| Phosphorus | 3.90E-10 | 1.68E-10 | 2.34E-11 | 1.13E-10 | 2.74E-11 | 4.37E-11 | 2.32E-07 | 2.94E-07 | 3.82E-08 | -- |
| Selenium | 5.75E-12 | 2.47E-12 | 3.45E-13 | 3.32E-14 | 8.06E-15 | 1.29E-14 | 3.37E-10 | 2.41E-11 | 3.54E-12 | -- |
| Silver | 6.59E-11 | 2.84E-11 | 3.96E-12 | 4.76E-11 | 1.16E-11 | 1.85E-11 | 3.58E-09 | 1.96E-09 | 1.85E-10 | -- |
| Thallium | 6.33E-09 | 2.72E-09 | 3.79E-10 | 1.83E-10 | 4.43E-11 | 7.08E-11 | 2.69E-08 | 1.17E-09 | 7.08E-11 | -- |
| Tin | 6.85E-09 | 2.95E-09 | 4.11E-10 | 1.98E-09 | 4.80E-10 | 7.67E-10 | 2.09E-08 | 1.33E-08 | 1.15E-09 | -- |
| Vanadium | 6.54E-10 | 2.81E-10 | 3.93E-11 | 1.89E-10 | 4.59E-11 | 7.32E-11 | 1.10E-09 | 4.67E-10 | 5.49E-11 | -- |
| Zinc | 2.85E-08 | 1.23E-08 | 1.71E-09 | 1.65E-09 | 4.00E-10 | 6.39E-10 | 5.41E-07 | 5.95E-07 | 7.19E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Courtice Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.26E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.65E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.26E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.14E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.94E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.46E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.91E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.24E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.33E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.17E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.67E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.25E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.78E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.65E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.96E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.99E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.25E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.08E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.34E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.86E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.68E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.19E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.06E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.73E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.90E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.88E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.90E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.90E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Courtice Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 9.60E-13 | 4.13E-13 | 5.76E-14 | 5.55E-13 | 1.35E-13 | 2.15E-13 | 3.06E-11 | 4.46E-11 | 5.72E-12 | 5.27E-11 |
| Anthracene | 9.47E-13 | 4.07E-13 | 5.68E-14 | 7.94E-13 | 1.92E-13 | 3.07E-13 | 1.36E-11 | 1.98E-11 | 3.99E-14 | 2.09E-15 |
| Fluorene | 9.55E-13 | 4.11E-13 | 5.73E-14 | 5.52E-13 | 1.34E-13 | 2.14E-13 | 2.04E-11 | 2.98E-11 | 5.06E-14 | 7.84E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.79E-10 | 7.70E-11 | 1.07E-11 | 7.25E-11 | 1.76E-11 | 2.81E-11 | 1.79E-10 | 2.61E-10 | 4.80E-11 | 1.15E-12 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.36E-14 | 3.16E-14 | 4.41E-15 | 6.38E-15 | 1.55E-15 | 2.47E-15 | 9.90E-14 | 7.20E-14 | 2.12E-14 | 2.51E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.49E-16 | 2.36E-16 | 3.29E-17 | 3.17E-16 | 7.69E-17 | 1.23E-16 | 1.14E-13 | 1.64E-13 | 1.36E-12 | 2.08E-15 |
| Bromoform | 1.53E-15 | 6.58E-16 | 9.18E-17 | 4.86E-16 | 1.18E-16 | 1.88E-16 | 3.72E-13 | 5.43E-13 | 5.27E-13 | 5.15E-17 |
| Carbon Tetrachloride | 1.10E-16 | 4.71E-17 | 6.58E-18 | 3.17E-16 | 7.68E-17 | 1.23E-16 | 1.52E-14 | 2.20E-14 | 2.92E-13 | 2.00E-16 |
| Chloroform | 2.46E-16 | 1.06E-16 | 1.47E-17 | 7.10E-17 | 1.72E-17 | 2.75E-17 | 9.83E-14 | 1.43E-13 | 6.92E-13 | 1.00E-15 |
| Dichloromethane | 4.41E-14 | 1.89E-14 | 2.64E-15 | 1.27E-14 | 3.09E-15 | 4.93E-15 | 4.46E-11 | 6.50E-11 | 4.44E-10 | 1.04E-13 |
| O-Terphenyl | 3.04E-12 | 1.31E-12 | 1.82E-13 | 1.76E-12 | 4.26E-13 | 6.80E-13 | 1.15E-11 | 1.63E-11 | 1.91E-12 | 5.45E-13 |
| Trichlorofluoromethane (FREON 11) | 1.14E-14 | 4.88E-15 | 6.81E-16 | 6.56E-15 | 1.59E-15 | 2.54E-15 | 2.35E-12 | 3.40E-12 | 2.58E-11 | 4.40E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.32E-13 | 1.86E-13 | 2.59E-14 | 1.25E-13 | 3.02E-14 | 4.83E-14 | 4.14E-12 | 6.04E-12 | 1.27E-11 | 1.38E-15 |
| 1,2,4-Trichlorobenzene | 1.02E-14 | 4.37E-15 | 6.10E-16 | 2.35E-15 | 5.70E-16 | 9.11E-16 | 2.83E-13 | 4.14E-13 | 2.21E-13 | 3.61E-16 |
| 1,2-Dichlorobenzene | 1.37E-13 | 5.88E-14 | 8.21E-15 | 3.95E-14 | 9.59E-15 | 1.53E-14 | 8.82E-12 | 1.27E-11 | 9.40E-11 | 2.31E-13 |
| Hexachlorobenzene | 1.85E-13 | 7.97E-14 | 1.11E-14 | 6.96E-14 | 1.69E-14 | 2.70E-14 | 9.20E-13 | 1.34E-12 | 1.32E-12 | 9.42E-15 |
| Pentachlorobenzene | 6.71E-12 | 2.88E-12 | 4.02E-13 | 1.94E-13 | 4.70E-14 | 7.51E-14 | 3.93E-11 | 5.74E-11 | 3.45E-12 | 3.28E-14 |
| Pentachlorophenol | 3.15E-12 | 1.36E-12 | 1.89E-13 | 1.00E-12 | 2.43E-13 | 3.88E-13 | 7.46E-10 | 2.96E-11 | 1.44E-09 | 1.25E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 8.92E-10 | 3.83E-10 | 5.35E-11 | 2.58E-10 | 6.25E-11 | 9.98E-11 | 8.97E-09 | 6.12E-09 | 7.49E-10 | -- |
| Arsenic | 8.85E-11 | 3.80E-11 | 5.31E-12 | 7.67E-12 | 1.86E-12 | 2.97E-12 | 8.15E-10 | 1.20E-10 | 1.98E-11 | -- |
| Barium | 6.28E-10 | 2.70E-10 | 3.77E-11 | 1.81E-10 | 4.40E-11 | 7.03E-11 | 6.67E-09 | 4.35E-09 | 2.64E-10 | -- |
| Beryllium | 5.62E-10 | 2.42E-10 | 3.37E-11 | 4.87E-11 | 1.18E-11 | 1.89E-11 | 7.95E-10 | 3.12E-10 | 2.36E-11 | -- |
| Boron | 3.47E-09 | 1.49E-09 | 2.08E-10 | 1.00E-09 | 2.43E-10 | 3.88E-10 | 1.42E-06 | 1.68E-06 | 1.94E-07 | -- |
| Cadmium | 3.70E-09 | 1.59E-09 | 2.22E-10 | 1.50E-09 | 3.63E-10 | 5.80E-10 | 8.04E-08 | 9.96E-08 | 6.63E-09 | -- |
| Chromium (Total) | 3.12E-10 | 1.34E-10 | 1.87E-11 | 3.60E-11 | 8.73E-12 | 1.39E-11 | 4.15E-09 | 3.27E-10 | 3.92E-11 | -- |
| Chromium VI | 4.43E-11 | 1.90E-11 | 2.66E-12 | 1.15E-11 | 2.79E-12 | 4.46E-12 | 5.90E-10 | 4.65E-11 | 5.58E-12 | -- |
| Cobalt | 1.89E-09 | 8.11E-10 | 1.13E-10 | 5.45E-10 | 1.32E-10 | 2.11E-10 | 1.25E-08 | 3.51E-09 | 3.69E-10 | -- |
| Lead | 8.61E-08 | 3.70E-08 | 5.17E-09 | 1.49E-09 | 3.62E-10 | 5.78E-10 | 2.60E-07 | 2.52E-07 | 2.17E-08 | -- |
| Mercury - Inorganic | 6.01E-09 | 2.58E-09 | 3.60E-10 | 8.68E-10 | 2.10E-10 | 3.36E-10 | 1.65E-08 | 1.87E-08 | 6.05E-09 | 4.29E-09 |
| Methyl Mercury | 2.25E-10 | 9.69E-11 | 1.35E-11 | 1.30E-10 | 3.16E-11 | 5.04E-11 | 2.01E-09 | 1.42E-09 | 6.24E-10 | 1.21E-09 |
| Nickel | 4.04E-08 | 1.74E-08 | 2.42E-09 | 4.09E-08 | 9.91E-09 | 1.58E-08 | 2.07E-07 | 8.09E-08 | 9.05E-09 | -- |
| Phosphorus | 1.21E-09 | 5.21E-10 | 7.27E-11 | 3.50E-10 | 8.49E-11 | 1.36E-10 | 7.05E-07 | 9.12E-07 | 1.19E-07 | -- |
| Selenium | 1.78E-11 | 7.67E-12 | 1.07E-12 | 1.03E-13 | 2.50E-14 | 3.99E-14 | 8.89E-10 | 7.48E-11 | 1.10E-11 | -- |
| Silver | 2.05E-10 | 8.80E-11 | 1.23E-11 | 1.48E-10 | 3.58E-11 | 5.72E-11 | 1.00E-08 | 6.07E-09 | 5.73E-10 | -- |
| Thallium | 1.96E-08 | 8.44E-09 | 1.18E-09 | 5.67E-10 | 1.38E-10 | 2.20E-10 | 7.05E-08 | 3.62E-09 | 2.20E-10 | -- |
| Tin | 2.13E-08 | 9.15E-09 | 1.28E-09 | 6.15E-09 | 1.49E-09 | 2.38E-09 | 5.91E-08 | 4.14E-08 | 3.57E-09 | -- |
| Vanadium | 2.03E-09 | 8.74E-10 | 1.22E-10 | 5.87E-10 | 1.42E-10 | 2.27E-10 | 3.02E-09 | 1.45E-09 | 1.71E-10 | -- |
| Zinc | 8.85E-08 | 3.81E-08 | 5.31E-09 | 5.12E-09 | 1.24E-09 | 1.98E-09 | 1.61E-06 | 1.85E-06 | 2.23E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Courtice Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.36E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.61E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.26E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.75E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.37E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-12 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.44E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.35E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.54E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.77E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.16E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.37E-11 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.37E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.97E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.47E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76E-08 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-09 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.25E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-09 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.30E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.95E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.04E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.27E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.64E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.59E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.81E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.24E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.74E-06 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.72E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.05E-07 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.63E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.83E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Maple Grove**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 2.65E-13 | 1.14E-13 | 1.59E-14 | 1.53E-13 | 3.71E-14 | 5.93E-14 | 8.45E-12 | 1.23E-11 | 1.58E-12 | 1.46E-11 |
| Anthracene | 2.61E-13 | 1.12E-13 | 1.57E-14 | 2.19E-13 | 5.31E-14 | 8.48E-14 | 3.75E-12 | 5.46E-12 | 1.10E-14 | 1.05E-15 |
| Fluorene | 2.63E-13 | 1.13E-13 | 1.58E-14 | 1.52E-13 | 3.69E-14 | 5.90E-14 | 5.63E-12 | 8.22E-12 | 1.40E-14 | 3.95E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 4.94E-11 | 2.12E-11 | 2.96E-12 | 2.00E-11 | 4.85E-12 | 7.74E-12 | 4.97E-11 | 7.21E-11 | 1.32E-11 | 5.79E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.78E-14 | 7.65E-15 | 1.07E-15 | 1.54E-15 | 3.74E-16 | 5.98E-16 | 2.79E-14 | 1.74E-14 | 5.12E-15 | 1.27E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.52E-16 | 6.51E-17 | 9.09E-18 | 8.76E-17 | 2.12E-17 | 3.39E-17 | 3.16E-14 | 4.53E-14 | 3.76E-13 | 1.05E-15 |
| Bromoform | 4.22E-16 | 1.81E-16 | 2.53E-17 | 1.34E-16 | 3.25E-17 | 5.20E-17 | 1.03E-13 | 1.50E-13 | 1.45E-13 | 2.60E-17 |
| Carbon Tetrachloride | 3.03E-17 | 1.30E-17 | 1.82E-18 | 8.74E-17 | 2.12E-17 | 3.39E-17 | 4.21E-15 | 6.06E-15 | 8.06E-14 | 1.01E-16 |
| Chloroform | 6.78E-17 | 2.92E-17 | 4.07E-18 | 1.96E-17 | 4.75E-18 | 7.59E-18 | 2.73E-14 | 3.94E-14 | 1.91E-13 | 5.05E-16 |
| Dichloromethane | 1.22E-14 | 5.23E-15 | 7.30E-16 | 3.51E-15 | 8.52E-16 | 1.36E-15 | 1.23E-11 | 1.79E-11 | 1.23E-10 | 5.26E-14 |
| O-Terphenyl | 8.39E-13 | 3.61E-13 | 5.03E-14 | 4.85E-13 | 1.18E-13 | 1.88E-13 | 3.24E-12 | 4.50E-12 | 5.27E-13 | 2.75E-13 |
| Trichlorofluoromethane (FREON 11) | 3.13E-15 | 1.35E-15 | 1.88E-16 | 1.81E-15 | 4.39E-16 | 7.01E-16 | 6.54E-13 | 9.37E-13 | 7.13E-12 | 2.22E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.19E-13 | 5.12E-14 | 7.15E-15 | 3.44E-14 | 8.34E-15 | 1.33E-14 | 1.14E-12 | 1.67E-12 | 3.49E-12 | 6.95E-16 |
| 1,2,4-Trichlorobenzene | 2.81E-15 | 1.21E-15 | 1.68E-16 | 6.49E-16 | 1.57E-16 | 2.51E-16 | 7.82E-14 | 1.14E-13 | 6.09E-14 | 1.82E-16 |
| 1,2-Dichlorobenzene | 3.78E-14 | 1.62E-14 | 2.27E-15 | 1.09E-14 | 2.65E-15 | 4.23E-15 | 2.46E-12 | 3.50E-12 | 2.59E-11 | 1.16E-13 |
| Hexachlorobenzene | 5.12E-14 | 2.20E-14 | 3.07E-15 | 1.92E-14 | 4.66E-15 | 7.44E-15 | 2.55E-13 | 3.69E-13 | 3.64E-13 | 4.75E-15 |
| Pentachlorobenzene | 1.85E-12 | 7.96E-13 | 1.11E-13 | 5.35E-14 | 1.30E-14 | 2.07E-14 | 1.09E-11 | 1.58E-11 | 9.53E-13 | 1.65E-14 |
| Pentachlorophenol | 8.70E-13 | 3.74E-13 | 5.22E-14 | 2.77E-13 | 6.71E-14 | 1.07E-13 | 3.71E-10 | 8.18E-12 | 3.98E-10 | 6.30E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 2.16E-10 | 9.28E-11 | 1.30E-11 | 6.24E-11 | 1.51E-11 | 2.42E-11 | 2.19E-09 | 1.48E-09 | 1.81E-10 | -- |
| Arsenic | 2.14E-11 | 9.21E-12 | 1.28E-12 | 1.86E-12 | 4.50E-13 | 7.19E-13 | 2.00E-10 | 2.92E-11 | 4.80E-12 | -- |
| Barium | 1.52E-10 | 6.53E-11 | 9.12E-12 | 4.39E-11 | 1.06E-11 | 1.70E-11 | 1.63E-09 | 1.05E-09 | 6.38E-11 | -- |
| Beryllium | 1.36E-10 | 5.85E-11 | 8.16E-12 | 1.18E-11 | 2.86E-12 | 4.57E-12 | 1.95E-10 | 7.55E-11 | 5.71E-12 | -- |
| Boron | 8.40E-10 | 3.61E-10 | 5.04E-11 | 2.43E-10 | 5.89E-11 | 9.40E-11 | 3.45E-07 | 4.07E-07 | 4.70E-08 | -- |
| Cadmium | 8.96E-10 | 3.85E-10 | 5.38E-11 | 3.63E-10 | 8.79E-11 | 1.40E-10 | 1.95E-08 | 2.41E-08 | 1.61E-09 | -- |
| Chromium (Total) | 7.54E-11 | 3.24E-11 | 4.52E-12 | 8.71E-12 | 2.11E-12 | 3.37E-12 | 1.02E-09 | 7.91E-11 | 9.49E-12 | -- |
| Chromium VI | 1.07E-11 | 4.61E-12 | 6.43E-13 | 2.79E-12 | 6.76E-13 | 1.08E-12 | 1.45E-10 | 1.13E-11 | 1.35E-12 | -- |
| Cobalt | 4.56E-10 | 1.96E-10 | 2.74E-11 | 1.32E-10 | 3.20E-11 | 5.11E-11 | 3.07E-09 | 8.49E-10 | 8.94E-11 | -- |
| Lead | 2.08E-08 | 8.96E-09 | 1.25E-09 | 3.61E-10 | 8.76E-11 | 1.40E-10 | 6.32E-08 | 6.09E-08 | 5.25E-09 | -- |
| Mercury - Inorganic | 1.93E-09 | 8.29E-10 | 1.16E-10 | 2.79E-10 | 6.76E-11 | 1.08E-10 | 5.66E-09 | 6.02E-09 | 1.94E-09 | 2.16E-09 |
| Methyl Mercury | 5.45E-11 | 2.34E-11 | 3.27E-12 | 3.15E-11 | 7.64E-12 | 1.22E-11 | 6.71E-10 | 3.45E-10 | 1.51E-10 | 6.09E-10 |
| Nickel | 9.78E-09 | 4.20E-09 | 5.87E-10 | 9.89E-09 | 2.40E-09 | 3.83E-09 | 5.08E-08 | 1.96E-08 | 2.19E-09 | -- |
| Phosphorus | 2.93E-10 | 1.26E-10 | 1.76E-11 | 8.47E-11 | 2.05E-11 | 3.28E-11 | 1.71E-07 | 2.21E-07 | 2.87E-08 | -- |
| Selenium | 4.32E-12 | 1.86E-12 | 2.59E-13 | 2.50E-14 | 6.05E-15 | 9.66E-15 | 2.19E-10 | 1.81E-11 | 2.66E-12 | -- |
| Silver | 4.95E-11 | 2.13E-11 | 2.97E-12 | 3.58E-11 | 8.67E-12 | 1.39E-11 | 2.45E-09 | 1.47E-09 | 1.39E-10 | -- |
| Thallium | 4.75E-09 | 2.04E-09 | 2.85E-10 | 1.37E-10 | 3.33E-11 | 5.32E-11 | 1.74E-08 | 8.77E-10 | 5.32E-11 | -- |
| Tin | 5.15E-09 | 2.21E-09 | 3.09E-10 | 1.49E-09 | 3.61E-10 | 5.76E-10 | 1.44E-08 | 1.00E-08 | 8.65E-10 | -- |
| Vanadium | 4.92E-10 | 2.11E-10 | 2.95E-11 | 1.42E-10 | 3.45E-11 | 5.50E-11 | 7.40E-10 | 3.51E-10 | 4.13E-11 | -- |
| Zinc | 2.14E-08 | 9.21E-09 | 1.29E-09 | 1.24E-09 | 3.00E-10 | 4.80E-10 | 3.92E-07 | 4.47E-07 | 5.40E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Maple Grove**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.96E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.42E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.22E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.54E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.99E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.11E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.58E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.53E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.06E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.75E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.54E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.59E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.21E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.10E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.05E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.28E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.69E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.04E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.98E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.01E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.71E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.24E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.78E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.61E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.91E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.21E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.19E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.56E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.54E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.10E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.41E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Oshawa Subdivision**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 3.85E-13 | 1.65E-13 | 2.31E-14 | 2.22E-13 | 5.39E-14 | 8.61E-14 | 1.23E-11 | 1.79E-11 | 2.29E-12 | 2.11E-11 |
| Anthracene | 3.79E-13 | 1.63E-13 | 2.28E-14 | 3.18E-13 | 7.71E-14 | 1.23E-13 | 5.44E-12 | 7.92E-12 | 1.60E-14 | 1.58E-15 |
| Fluorene | 3.83E-13 | 1.64E-13 | 2.29E-14 | 2.21E-13 | 5.36E-14 | 8.56E-14 | 8.17E-12 | 1.19E-11 | 2.03E-14 | 5.92E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 7.16E-11 | 3.08E-11 | 4.30E-12 | 2.90E-11 | 7.02E-12 | 1.12E-11 | 7.20E-11 | 1.04E-10 | 1.92E-11 | 8.68E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 3.13E-14 | 1.35E-14 | 1.88E-15 | 2.71E-15 | 6.58E-16 | 1.05E-15 | 4.85E-14 | 3.06E-14 | 9.01E-15 | 1.90E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 2.20E-16 | 9.46E-17 | 1.32E-17 | 1.27E-16 | 3.08E-17 | 4.92E-17 | 4.59E-14 | 6.58E-14 | 5.46E-13 | 1.57E-15 |
| Bromoform | 6.13E-16 | 2.63E-16 | 3.68E-17 | 1.95E-16 | 4.72E-17 | 7.54E-17 | 1.49E-13 | 2.17E-13 | 2.11E-13 | 3.89E-17 |
| Carbon Tetrachloride | 4.39E-17 | 1.89E-17 | 2.63E-18 | 1.27E-16 | 3.08E-17 | 4.91E-17 | 6.11E-15 | 8.80E-15 | 1.17E-13 | 1.51E-16 |
| Chloroform | 9.85E-17 | 4.23E-17 | 5.91E-18 | 2.85E-17 | 6.90E-18 | 1.10E-17 | 3.96E-14 | 5.72E-14 | 2.77E-13 | 7.57E-16 |
| Dichloromethane | 1.77E-14 | 7.59E-15 | 1.06E-15 | 5.10E-15 | 1.24E-15 | 1.98E-15 | 1.79E-11 | 2.61E-11 | 1.78E-10 | 7.89E-14 |
| O-Terphenyl | 1.22E-12 | 5.23E-13 | 7.30E-14 | 7.04E-13 | 1.71E-13 | 2.73E-13 | 4.72E-12 | 6.54E-12 | 7.65E-13 | 4.12E-13 |
| Trichlorofluoromethane (FREON 11) | 4.55E-15 | 1.96E-15 | 2.73E-16 | 2.63E-15 | 6.38E-16 | 1.02E-15 | 9.50E-13 | 1.36E-12 | 1.03E-11 | 3.32E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 1.73E-13 | 7.43E-14 | 1.04E-14 | 5.00E-14 | 1.21E-14 | 1.94E-14 | 1.66E-12 | 2.42E-12 | 5.07E-12 | 1.04E-15 |
| 1,2,4-Trichlorobenzene | 4.08E-15 | 1.75E-15 | 2.45E-16 | 9.42E-16 | 2.28E-16 | 3.65E-16 | 1.14E-13 | 1.66E-13 | 8.84E-14 | 2.73E-16 |
| 1,2-Dichlorobenzene | 5.48E-14 | 2.36E-14 | 3.29E-15 | 1.58E-14 | 3.84E-15 | 6.14E-15 | 3.58E-12 | 5.08E-12 | 3.77E-11 | 1.74E-13 |
| Hexachlorobenzene | 7.43E-14 | 3.19E-14 | 4.46E-15 | 2.79E-14 | 6.76E-15 | 1.08E-14 | 3.70E-13 | 5.35E-13 | 5.29E-13 | 7.12E-15 |
| Pentachlorobenzene | 2.69E-12 | 1.16E-12 | 1.61E-13 | 7.77E-14 | 1.88E-14 | 3.01E-14 | 1.58E-11 | 2.30E-11 | 1.38E-12 | 2.48E-14 |
| Pentachlorophenol | 1.26E-12 | 5.43E-13 | 7.58E-14 | 4.02E-13 | 9.74E-14 | 1.56E-13 | 5.56E-10 | 1.19E-11 | 5.78E-10 | 9.44E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 3.80E-10 | 1.63E-10 | 2.28E-11 | 1.10E-10 | 2.66E-11 | 4.26E-11 | 4.03E-09 | 2.61E-09 | 3.19E-10 | -- |
| Arsenic | 3.77E-11 | 1.62E-11 | 2.26E-12 | 3.27E-12 | 7.93E-13 | 1.27E-12 | 3.79E-10 | 5.14E-11 | 8.45E-12 | -- |
| Barium | 2.68E-10 | 1.15E-10 | 1.61E-11 | 7.74E-11 | 1.88E-11 | 3.00E-11 | 3.00E-09 | 1.85E-09 | 1.12E-10 | -- |
| Beryllium | 2.40E-10 | 1.03E-10 | 1.44E-11 | 2.08E-11 | 5.03E-12 | 8.04E-12 | 3.64E-10 | 1.33E-10 | 1.01E-11 | -- |
| Boron | 1.48E-09 | 6.36E-10 | 8.88E-11 | 4.28E-10 | 1.04E-10 | 1.66E-10 | 6.17E-07 | 7.18E-07 | 8.29E-08 | -- |
| Cadmium | 1.58E-09 | 6.79E-10 | 9.47E-11 | 6.39E-10 | 1.55E-10 | 2.47E-10 | 3.48E-08 | 4.24E-08 | 2.83E-09 | -- |
| Chromium (Total) | 1.33E-10 | 5.71E-11 | 7.97E-12 | 1.54E-11 | 3.72E-12 | 5.95E-12 | 1.94E-09 | 1.39E-10 | 1.67E-11 | -- |
| Chromium VI | 1.89E-11 | 8.12E-12 | 1.13E-12 | 4.91E-12 | 1.19E-12 | 1.90E-12 | 2.76E-10 | 1.98E-11 | 2.38E-12 | -- |
| Cobalt | 8.04E-10 | 3.46E-10 | 4.82E-11 | 2.32E-10 | 5.63E-11 | 9.00E-11 | 5.77E-09 | 1.50E-09 | 1.58E-10 | -- |
| Lead | 3.67E-08 | 1.58E-08 | 2.20E-09 | 6.36E-10 | 1.54E-10 | 2.46E-10 | 1.14E-07 | 1.07E-07 | 9.24E-09 | -- |
| Mercury - Inorganic | 2.87E-09 | 1.23E-09 | 1.72E-10 | 4.14E-10 | 1.00E-10 | 1.60E-10 | 8.55E-09 | 8.94E-09 | 2.89E-09 | 3.24E-09 |
| Methyl Mercury | 9.60E-11 | 4.13E-11 | 5.76E-12 | 5.55E-11 | 1.35E-11 | 2.15E-11 | 1.10E-09 | 6.07E-10 | 2.66E-10 | 9.14E-10 |
| Nickel | 1.72E-08 | 7.41E-09 | 1.03E-09 | 1.74E-08 | 4.22E-09 | 6.75E-09 | 9.50E-08 | 3.45E-08 | 3.86E-09 | -- |
| Phosphorus | 5.17E-10 | 2.22E-10 | 3.10E-11 | 1.49E-10 | 3.62E-11 | 5.78E-11 | 3.04E-07 | 3.89E-07 | 5.06E-08 | -- |
| Selenium | 7.61E-12 | 3.27E-12 | 4.56E-13 | 4.40E-14 | 1.07E-14 | 1.70E-14 | 4.15E-10 | 3.19E-11 | 4.68E-12 | -- |
| Silver | 8.73E-11 | 3.75E-11 | 5.23E-12 | 6.30E-11 | 1.53E-11 | 2.44E-11 | 4.52E-09 | 2.59E-09 | 2.44E-10 | -- |
| Thallium | 8.37E-09 | 3.60E-09 | 5.02E-10 | 2.42E-10 | 5.86E-11 | 9.37E-11 | 3.30E-08 | 1.54E-09 | 9.37E-11 | -- |
| Tin | 9.07E-09 | 3.90E-09 | 5.44E-10 | 2.62E-09 | 6.35E-10 | 1.01E-09 | 2.65E-08 | 1.77E-08 | 1.52E-09 | -- |
| Vanadium | 8.66E-10 | 3.72E-10 | 5.19E-11 | 2.50E-10 | 6.07E-11 | 9.69E-11 | 1.38E-09 | 6.18E-10 | 7.27E-11 | -- |
| Zinc | 3.77E-08 | 1.62E-08 | 2.26E-09 | 2.18E-09 | 5.29E-10 | 8.45E-10 | 7.03E-07 | 7.88E-07 | 9.51E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Oshawa Subdivision**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.45E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.45E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.50E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.58E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.59E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.79E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.32E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.75E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.22E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.54E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.49E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.66E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.60E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.43E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.09E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.70E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.01E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.49E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.97E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.42E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.35E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.32E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.34E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.00E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.87E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.86E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.12E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.87E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.44E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.63E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.58E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.75E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.35E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.76E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.50E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Port Darlington**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.74E-13 | 7.47E-14 | 1.04E-14 | 1.00E-13 | 2.44E-14 | 3.89E-14 | 5.56E-12 | 8.08E-12 | 1.03E-12 | 9.57E-12 |
| Anthracene | 1.71E-13 | 7.37E-14 | 1.03E-14 | 1.44E-13 | 3.48E-14 | 5.57E-14 | 2.46E-12 | 3.58E-12 | 7.23E-15 | 1.13E-15 |
| Fluorene | 1.73E-13 | 7.43E-14 | 1.04E-14 | 9.99E-14 | 2.42E-14 | 3.87E-14 | 3.69E-12 | 5.39E-12 | 9.17E-15 | 4.26E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 3.25E-11 | 1.40E-11 | 1.95E-12 | 1.31E-11 | 3.18E-12 | 5.09E-12 | 3.28E-11 | 4.73E-11 | 8.70E-12 | 6.24E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.12E-14 | 4.83E-15 | 6.74E-16 | 9.74E-16 | 2.36E-16 | 3.77E-16 | 2.18E-14 | 1.10E-14 | 3.23E-15 | 1.36E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 9.94E-17 | 4.27E-17 | 5.96E-18 | 5.74E-17 | 1.39E-17 | 2.22E-17 | 2.10E-14 | 2.97E-14 | 2.47E-13 | 1.13E-15 |
| Bromoform | 2.77E-16 | 1.19E-16 | 1.66E-17 | 8.80E-17 | 2.13E-17 | 3.41E-17 | 6.73E-14 | 9.82E-14 | 9.53E-14 | 2.80E-17 |
| Carbon Tetrachloride | 1.98E-17 | 8.53E-18 | 1.19E-18 | 5.73E-17 | 1.39E-17 | 2.22E-17 | 2.79E-15 | 3.98E-15 | 5.28E-14 | 1.09E-16 |
| Chloroform | 4.45E-17 | 1.91E-17 | 2.67E-18 | 1.29E-17 | 3.12E-18 | 4.98E-18 | 1.80E-14 | 2.58E-14 | 1.25E-13 | 5.44E-16 |
| Dichloromethane | 7.98E-15 | 3.43E-15 | 4.79E-16 | 2.31E-15 | 5.59E-16 | 8.93E-16 | 8.09E-12 | 1.18E-11 | 8.04E-11 | 5.67E-14 |
| O-Terphenyl | 5.50E-13 | 2.36E-13 | 3.30E-14 | 3.18E-13 | 7.71E-14 | 1.23E-13 | 2.19E-12 | 2.95E-12 | 3.46E-13 | 2.96E-13 |
| Trichlorofluoromethane (FREON 11) | 2.06E-15 | 8.84E-16 | 1.23E-16 | 1.19E-15 | 2.88E-16 | 4.60E-16 | 4.35E-13 | 6.14E-13 | 4.67E-12 | 2.39E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 7.81E-14 | 3.36E-14 | 4.69E-15 | 2.26E-14 | 5.47E-15 | 8.74E-15 | 7.49E-13 | 1.09E-12 | 2.29E-12 | 7.49E-16 |
| 1,2,4-Trichlorobenzene | 1.84E-15 | 7.92E-16 | 1.10E-16 | 4.26E-16 | 1.03E-16 | 1.65E-16 | 5.14E-14 | 7.49E-14 | 3.99E-14 | 1.96E-16 |
| 1,2-Dichlorobenzene | 2.48E-14 | 1.06E-14 | 1.49E-15 | 7.16E-15 | 1.74E-15 | 2.77E-15 | 1.64E-12 | 2.30E-12 | 1.70E-11 | 1.25E-13 |
| Hexachlorobenzene | 3.35E-14 | 1.44E-14 | 2.01E-15 | 1.26E-14 | 3.06E-15 | 4.88E-15 | 1.68E-13 | 2.42E-13 | 2.39E-13 | 5.12E-15 |
| Pentachlorobenzene | 1.21E-12 | 5.22E-13 | 7.28E-14 | 3.51E-14 | 8.51E-15 | 1.36E-14 | 7.13E-12 | 1.04E-11 | 6.25E-13 | 1.78E-14 |
| Pentachlorophenol | 5.71E-13 | 2.45E-13 | 3.42E-14 | 1.81E-13 | 4.40E-14 | 7.03E-14 | 3.98E-10 | 5.37E-12 | 2.61E-10 | 6.78E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.36E-10 | 5.85E-11 | 8.17E-12 | 3.93E-11 | 9.54E-12 | 1.52E-11 | 1.51E-09 | 9.34E-10 | 1.14E-10 | -- |
| Arsenic | 1.35E-11 | 5.81E-12 | 8.10E-13 | 1.17E-12 | 2.84E-13 | 4.53E-13 | 1.45E-10 | 1.84E-11 | 3.02E-12 | -- |
| Barium | 9.58E-11 | 4.12E-11 | 5.75E-12 | 2.77E-11 | 6.71E-12 | 1.07E-11 | 1.12E-09 | 6.64E-10 | 4.02E-11 | -- |
| Beryllium | 8.58E-11 | 3.69E-11 | 5.15E-12 | 7.44E-12 | 1.80E-12 | 2.88E-12 | 1.38E-10 | 4.76E-11 | 3.60E-12 | -- |
| Boron | 5.30E-10 | 2.28E-10 | 3.18E-11 | 1.53E-10 | 3.71E-11 | 5.93E-11 | 2.24E-07 | 2.57E-07 | 2.96E-08 | -- |
| Cadmium | 5.65E-10 | 2.43E-10 | 3.39E-11 | 2.29E-10 | 5.54E-11 | 8.86E-11 | 1.26E-08 | 1.52E-08 | 1.01E-09 | -- |
| Chromium (Total) | 4.75E-11 | 2.04E-11 | 2.85E-12 | 5.49E-12 | 1.33E-12 | 2.13E-12 | 7.46E-10 | 4.99E-11 | 5.99E-12 | -- |
| Chromium VI | 6.76E-12 | 2.91E-12 | 4.06E-13 | 1.76E-12 | 4.26E-13 | 6.81E-13 | 1.06E-10 | 7.10E-12 | 8.51E-13 | -- |
| Cobalt | 2.88E-10 | 1.24E-10 | 1.73E-11 | 8.32E-11 | 2.02E-11 | 3.22E-11 | 2.20E-09 | 5.36E-10 | 5.64E-11 | -- |
| Lead | 1.31E-08 | 5.65E-09 | 7.88E-10 | 2.28E-10 | 5.52E-11 | 8.83E-11 | 4.21E-08 | 3.84E-08 | 3.31E-09 | -- |
| Mercury - Inorganic | 1.73E-09 | 7.45E-10 | 1.04E-10 | 2.50E-10 | 6.07E-11 | 9.69E-11 | 5.26E-09 | 5.40E-09 | 1.74E-09 | 2.33E-09 |
| Methyl Mercury | 3.44E-11 | 1.48E-11 | 2.06E-12 | 1.99E-11 | 4.82E-12 | 7.70E-12 | 5.90E-10 | 2.18E-10 | 9.53E-11 | 6.56E-10 |
| Nickel | 6.17E-09 | 2.65E-09 | 3.70E-10 | 6.24E-09 | 1.51E-09 | 2.42E-09 | 3.60E-08 | 1.23E-08 | 1.38E-09 | -- |
| Phosphorus | 1.85E-10 | 7.94E-11 | 1.11E-11 | 5.34E-11 | 1.29E-11 | 2.07E-11 | 1.10E-07 | 1.39E-07 | 1.81E-08 | -- |
| Selenium | 2.72E-12 | 1.17E-12 | 1.63E-13 | 1.57E-14 | 3.81E-15 | 6.09E-15 | 1.60E-10 | 1.14E-11 | 1.68E-12 | -- |
| Silver | 3.12E-11 | 1.34E-11 | 1.87E-12 | 2.26E-11 | 5.47E-12 | 8.73E-12 | 1.69E-09 | 9.27E-10 | 8.74E-11 | -- |
| Thallium | 3.00E-09 | 1.29E-09 | 1.80E-10 | 8.66E-11 | 2.10E-11 | 3.35E-11 | 1.27E-08 | 5.53E-10 | 3.35E-11 | -- |
| Tin | 3.25E-09 | 1.40E-09 | 1.95E-10 | 9.39E-10 | 2.28E-10 | 3.64E-10 | 9.89E-09 | 6.32E-09 | 5.45E-10 | -- |
| Vanadium | 3.10E-10 | 1.33E-10 | 1.86E-11 | 8.96E-11 | 2.17E-11 | 3.47E-11 | 5.19E-10 | 2.21E-10 | 2.60E-11 | -- |
| Zinc | 1.35E-08 | 5.81E-09 | 8.11E-10 | 7.81E-10 | 1.89E-10 | 3.02E-10 | 2.56E-07 | 2.82E-07 | 3.40E-07 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Port Darlington**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.47E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.54E-12 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.52E-12 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.80E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.99E-13 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.61E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.98E-14 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.00E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.13E-12 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.75E-12 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.29E-12 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.70E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.11E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25E-13 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.34E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.82E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.89E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.01E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.29E-10 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-07 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00E-08 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81E-10 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.27E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.35E-09 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.04E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.64E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.91E-08 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.77E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.79E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.31E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.37E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.00E-07 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Solina Road**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 5.94E-13 | 2.55E-13 | 3.56E-14 | 3.43E-13 | 8.32E-14 | 1.33E-13 | 1.89E-11 | 2.76E-11 | 3.53E-12 | 3.26E-11 |
| Anthracene | 5.85E-13 | 2.52E-13 | 3.51E-14 | 4.91E-13 | 1.19E-13 | 1.90E-13 | 8.39E-12 | 1.22E-11 | 2.47E-14 | 1.61E-15 |
| Fluorene | 5.90E-13 | 2.54E-13 | 3.54E-14 | 3.41E-13 | 8.27E-14 | 1.32E-13 | 1.26E-11 | 1.84E-11 | 3.13E-14 | 6.07E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.11E-10 | 4.76E-11 | 6.64E-12 | 4.48E-11 | 1.09E-11 | 1.73E-11 | 1.11E-10 | 1.61E-10 | 2.97E-11 | 8.89E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 4.20E-14 | 1.81E-14 | 2.52E-15 | 3.64E-15 | 8.83E-16 | 1.41E-15 | 5.91E-14 | 4.11E-14 | 1.21E-14 | 1.95E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 3.39E-16 | 1.46E-16 | 2.04E-17 | 1.96E-16 | 4.76E-17 | 7.60E-17 | 7.04E-14 | 1.01E-13 | 8.42E-13 | 1.61E-15 |
| Bromoform | 9.45E-16 | 4.06E-16 | 5.67E-17 | 3.00E-16 | 7.28E-17 | 1.16E-16 | 2.30E-13 | 3.35E-13 | 3.25E-13 | 3.99E-17 |
| Carbon Tetrachloride | 6.78E-17 | 2.91E-17 | 4.06E-18 | 1.96E-16 | 4.75E-17 | 7.58E-17 | 9.39E-15 | 1.36E-14 | 1.80E-13 | 1.55E-16 |
| Chloroform | 1.52E-16 | 6.53E-17 | 9.11E-18 | 4.39E-17 | 1.06E-17 | 1.70E-17 | 6.08E-14 | 8.82E-14 | 4.28E-13 | 7.76E-16 |
| Dichloromethane | 2.72E-14 | 1.17E-14 | 1.63E-15 | 7.87E-15 | 1.91E-15 | 3.05E-15 | 2.76E-11 | 4.02E-11 | 2.74E-10 | 8.08E-14 |
| O-Terphenyl | 1.88E-12 | 8.07E-13 | 1.13E-13 | 1.09E-12 | 2.63E-13 | 4.20E-13 | 7.15E-12 | 1.01E-11 | 1.18E-12 | 4.22E-13 |
| Trichlorofluoromethane (FREON 11) | 7.02E-15 | 3.02E-15 | 4.21E-16 | 4.06E-15 | 9.84E-16 | 1.57E-15 | 1.46E-12 | 2.10E-12 | 1.60E-11 | 3.40E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 2.67E-13 | 1.15E-13 | 1.60E-14 | 7.71E-14 | 1.87E-14 | 2.99E-14 | 2.56E-12 | 3.73E-12 | 7.82E-12 | 1.07E-15 |
| 1,2,4-Trichlorobenzene | 6.29E-15 | 2.70E-15 | 3.77E-16 | 1.45E-15 | 3.52E-16 | 5.63E-16 | 1.75E-13 | 2.56E-13 | 1.36E-13 | 2.79E-16 |
| 1,2-Dichlorobenzene | 8.46E-14 | 3.64E-14 | 5.07E-15 | 2.44E-14 | 5.93E-15 | 9.47E-15 | 5.47E-12 | 7.84E-12 | 5.81E-11 | 1.78E-13 |
| Hexachlorobenzene | 1.15E-13 | 4.93E-14 | 6.87E-15 | 4.30E-14 | 1.04E-14 | 1.67E-14 | 5.69E-13 | 8.25E-13 | 8.16E-13 | 7.30E-15 |
| Pentachlorobenzene | 4.15E-12 | 1.78E-12 | 2.49E-13 | 1.20E-13 | 2.90E-14 | 4.64E-14 | 2.43E-11 | 3.55E-11 | 2.13E-12 | 2.54E-14 |
| Pentachlorophenol | 1.95E-12 | 8.38E-13 | 1.17E-13 | 6.20E-13 | 1.50E-13 | 2.40E-13 | 5.74E-10 | 1.83E-11 | 8.92E-10 | 9.67E-10 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 5.10E-10 | 2.19E-10 | 3.06E-11 | 1.47E-10 | 3.57E-11 | 5.70E-11 | 5.06E-09 | 3.50E-09 | 4.28E-10 | -- |
| Arsenic | 5.06E-11 | 2.17E-11 | 3.03E-12 | 4.38E-12 | 1.06E-12 | 1.70E-12 | 4.56E-10 | 6.88E-11 | 1.13E-11 | -- |
| Barium | 3.59E-10 | 1.54E-10 | 2.15E-11 | 1.04E-10 | 2.51E-11 | 4.01E-11 | 3.76E-09 | 2.48E-09 | 1.51E-10 | -- |
| Beryllium | 3.21E-10 | 1.38E-10 | 1.93E-11 | 2.78E-11 | 6.75E-12 | 1.08E-11 | 4.46E-10 | 1.78E-10 | 1.35E-11 | -- |
| Boron | 1.98E-09 | 8.53E-10 | 1.19E-10 | 5.73E-10 | 1.39E-10 | 2.22E-10 | 8.07E-07 | 9.61E-07 | 1.11E-07 | -- |
| Cadmium | 2.12E-09 | 9.10E-10 | 1.27E-10 | 8.56E-10 | 2.08E-10 | 3.32E-10 | 4.58E-08 | 5.69E-08 | 3.79E-09 | -- |
| Chromium (Total) | 1.78E-10 | 7.65E-11 | 1.07E-11 | 2.06E-11 | 4.99E-12 | 7.97E-12 | 2.32E-09 | 1.87E-10 | 2.24E-11 | -- |
| Chromium VI | 2.53E-11 | 1.09E-11 | 1.52E-12 | 6.58E-12 | 1.60E-12 | 2.55E-12 | 3.30E-10 | 2.66E-11 | 3.19E-12 | -- |
| Cobalt | 1.08E-09 | 4.63E-10 | 6.46E-11 | 3.11E-10 | 7.55E-11 | 1.21E-10 | 7.01E-09 | 2.01E-09 | 2.11E-10 | -- |
| Lead | 4.92E-08 | 2.11E-08 | 2.95E-09 | 8.53E-10 | 2.07E-10 | 3.30E-10 | 1.47E-07 | 1.44E-07 | 1.24E-08 | -- |
| Mercury - Inorganic | 3.84E-09 | 1.65E-09 | 2.30E-10 | 5.55E-10 | 1.35E-10 | 2.15E-10 | 1.08E-08 | 1.20E-08 | 3.87E-09 | 3.32E-09 |
| Methyl Mercury | 1.29E-10 | 5.53E-11 | 7.72E-12 | 7.44E-11 | 1.80E-11 | 2.88E-11 | 1.29E-09 | 8.14E-10 | 3.57E-10 | 9.36E-10 |
| Nickel | 2.31E-08 | 9.92E-09 | 1.38E-09 | 2.33E-08 | 5.66E-09 | 9.04E-09 | 1.16E-07 | 4.62E-08 | 5.17E-09 | -- |
| Phosphorus | 6.92E-10 | 2.97E-10 | 4.15E-11 | 2.00E-10 | 4.85E-11 | 7.74E-11 | 4.01E-07 | 5.21E-07 | 6.78E-08 | -- |
| Selenium | 1.02E-11 | 4.38E-12 | 6.11E-13 | 5.89E-14 | 1.43E-14 | 2.28E-14 | 4.97E-10 | 4.27E-11 | 6.28E-12 | -- |
| Silver | 1.17E-10 | 5.02E-11 | 7.01E-12 | 8.44E-11 | 2.05E-11 | 3.27E-11 | 5.64E-09 | 3.47E-09 | 3.27E-10 | -- |
| Thallium | 1.12E-08 | 4.82E-09 | 6.73E-10 | 3.24E-10 | 7.86E-11 | 1.26E-10 | 3.94E-08 | 2.07E-09 | 1.26E-10 | -- |
| Tin | 1.22E-08 | 5.23E-09 | 7.29E-10 | 3.51E-09 | 8.52E-10 | 1.36E-09 | 3.33E-08 | 2.37E-08 | 2.04E-09 | -- |
| Vanadium | 1.16E-09 | 4.99E-10 | 6.96E-11 | 3.35E-10 | 8.13E-11 | 1.30E-10 | 1.70E-09 | 8.28E-10 | 9.75E-11 | -- |
| Zinc | 5.06E-08 | 2.17E-08 | 3.03E-09 | 2.92E-09 | 7.09E-10 | 1.13E-09 | 9.17E-07 | 1.06E-06 | 1.27E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Solina Road**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.41E-11 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.23E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.41E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.00E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.02E-12 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.93E-13 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.04E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.78E-13 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.42E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.34E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.96E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.46E-11 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.79E-13 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.17E-11 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.83E-11 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.46E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.98E-09 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.19E-10 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.10E-09 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.16E-09 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.88E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.11E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.83E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.08E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.13E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.78E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.66E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.70E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.40E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.91E-07 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.61E-10 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.75E-09 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.88E-08 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.29E-08 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.90E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.33E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Tooley**

| COPC | Soil/Dust Ingestion-Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.06E-12 | 4.56E-13 | 6.36E-14 | 6.13E-13 | 1.49E-13 | 2.37E-13 | 3.38E-11 | 4.93E-11 | 6.31E-12 | 5.82E-11 |
| Anthracene | 1.05E-12 | 4.49E-13 | 6.27E-14 | 8.76E-13 | 2.12E-13 | 3.39E-13 | 1.50E-11 | 2.18E-11 | 4.41E-14 | 1.68E-15 |
| Fluorene | 1.05E-12 | 4.53E-13 | 6.32E-14 | 6.09E-13 | 1.48E-13 | 2.36E-13 | 2.25E-11 | 3.29E-11 | 5.59E-14 | 6.33E-15 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 1.97E-10 | 8.47E-11 | 1.18E-11 | 7.97E-11 | 1.93E-11 | 3.09E-11 | 1.97E-10 | 2.87E-10 | 5.28E-11 | 9.28E-13 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 7.74E-14 | 3.33E-14 | 4.64E-15 | 6.71E-15 | 1.63E-15 | 2.60E-15 | 9.90E-14 | 7.58E-14 | 2.23E-14 | 2.03E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.06E-16 | 2.61E-16 | 3.64E-17 | 3.50E-16 | 8.49E-17 | 1.36E-16 | 1.25E-13 | 1.81E-13 | 1.50E-12 | 1.68E-15 |
| Bromoform | 1.69E-15 | 7.26E-16 | 1.01E-16 | 5.37E-16 | 1.30E-16 | 2.08E-16 | 4.10E-13 | 5.99E-13 | 5.81E-13 | 4.16E-17 |
| Carbon Tetrachloride | 1.21E-16 | 5.20E-17 | 7.26E-18 | 3.50E-16 | 8.48E-17 | 1.35E-16 | 1.67E-14 | 2.43E-14 | 3.22E-13 | 1.62E-16 |
| Chloroform | 2.71E-16 | 1.17E-16 | 1.63E-17 | 7.84E-17 | 1.90E-17 | 3.04E-17 | 1.08E-13 | 1.58E-13 | 7.64E-13 | 8.10E-16 |
| Dichloromethane | 4.87E-14 | 2.09E-14 | 2.92E-15 | 1.41E-14 | 3.41E-15 | 5.45E-15 | 4.92E-11 | 7.18E-11 | 4.90E-10 | 8.44E-14 |
| O-Terphenyl | 3.36E-12 | 1.44E-12 | 2.01E-13 | 1.94E-12 | 4.70E-13 | 7.51E-13 | 1.26E-11 | 1.80E-11 | 2.11E-12 | 4.41E-13 |
| Trichlorofluoromethane (FREON 11) | 1.25E-14 | 5.39E-15 | 7.52E-16 | 7.25E-15 | 1.76E-15 | 2.81E-15 | 2.59E-12 | 3.75E-12 | 2.85E-11 | 3.55E-14 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 4.77E-13 | 2.05E-13 | 2.86E-14 | 1.38E-13 | 3.34E-14 | 5.33E-14 | 4.57E-12 | 6.67E-12 | 1.40E-11 | 1.11E-15 |
| 1,2,4-Trichlorobenzene | 1.12E-14 | 4.83E-15 | 6.74E-16 | 2.60E-15 | 6.30E-16 | 1.01E-15 | 3.13E-13 | 4.57E-13 | 2.44E-13 | 2.91E-16 |
| 1,2-Dichlorobenzene | 1.51E-13 | 6.50E-14 | 9.07E-15 | 4.37E-14 | 1.06E-14 | 1.69E-14 | 9.70E-12 | 1.40E-11 | 1.04E-10 | 1.86E-13 |
| Hexachlorobenzene | 2.05E-13 | 8.80E-14 | 1.23E-14 | 7.69E-14 | 1.86E-14 | 2.98E-14 | 1.01E-12 | 1.47E-12 | 1.46E-12 | 7.61E-15 |
| Pentachlorobenzene | 7.41E-12 | 3.18E-12 | 4.44E-13 | 2.14E-13 | 5.19E-14 | 8.29E-14 | 4.34E-11 | 6.34E-11 | 3.81E-12 | 2.65E-14 |
| Pentachlorophenol | 3.48E-12 | 1.50E-12 | 2.09E-13 | 1.11E-12 | 2.68E-13 | 4.29E-13 | 6.08E-10 | 3.27E-11 | 1.59E-09 | 1.01E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 9.42E-10 | 4.05E-10 | 5.65E-11 | 2.72E-10 | 6.60E-11 | 1.05E-10 | 9.23E-09 | 6.46E-09 | 7.91E-10 | -- |
| Arsenic | 9.35E-11 | 4.02E-11 | 5.61E-12 | 8.10E-12 | 1.96E-12 | 3.14E-12 | 8.23E-10 | 1.27E-10 | 2.09E-11 | -- |
| Barium | 6.63E-10 | 2.85E-10 | 3.98E-11 | 1.92E-10 | 4.65E-11 | 7.42E-11 | 6.85E-09 | 4.59E-09 | 2.78E-10 | -- |
| Beryllium | 5.93E-10 | 2.55E-10 | 3.56E-11 | 5.14E-11 | 1.25E-11 | 1.99E-11 | 8.09E-10 | 3.29E-10 | 2.49E-11 | -- |
| Boron | 3.67E-09 | 1.58E-09 | 2.20E-10 | 1.06E-09 | 2.57E-10 | 4.11E-10 | 1.49E-06 | 1.78E-06 | 2.05E-07 | -- |
| Cadmium | 3.91E-09 | 1.68E-09 | 2.35E-10 | 1.58E-09 | 3.84E-10 | 6.13E-10 | 8.42E-08 | 1.05E-07 | 7.00E-09 | -- |
| Chromium (Total) | 3.29E-10 | 1.41E-10 | 1.97E-11 | 3.80E-11 | 9.22E-12 | 1.47E-11 | 4.18E-09 | 3.45E-10 | 4.14E-11 | -- |
| Chromium VI | 4.68E-11 | 2.01E-11 | 2.81E-12 | 1.22E-11 | 2.95E-12 | 4.71E-12 | 5.94E-10 | 4.91E-11 | 5.89E-12 | -- |
| Cobalt | 1.99E-09 | 8.56E-10 | 1.20E-10 | 5.76E-10 | 1.40E-10 | 2.23E-10 | 1.27E-08 | 3.71E-09 | 3.90E-10 | -- |
| Lead | 9.08E-08 | 3.90E-08 | 5.45E-09 | 1.57E-09 | 3.82E-10 | 6.10E-10 | 2.70E-07 | 2.66E-07 | 2.29E-08 | -- |
| Mercury - Inorganic | 6.14E-09 | 2.64E-09 | 3.68E-10 | 8.87E-10 | 2.15E-10 | 3.43E-10 | 1.63E-08 | 1.91E-08 | 6.18E-09 | 3.46E-09 |
| Methyl Mercury | 2.38E-10 | 1.02E-10 | 1.43E-11 | 1.37E-10 | 3.33E-11 | 5.32E-11 | 1.93E-09 | 1.50E-09 | 6.59E-10 | 9.77E-10 |
| Nickel | 4.27E-08 | 1.83E-08 | 2.56E-09 | 4.32E-08 | 1.05E-08 | 1.67E-08 | 2.11E-07 | 8.54E-08 | 9.55E-09 | -- |
| Phosphorus | 1.28E-09 | 5.50E-10 | 7.68E-11 | 3.70E-10 | 8.97E-11 | 1.43E-10 | 7.40E-07 | 9.63E-07 | 1.25E-07 | -- |
| Selenium | 1.89E-11 | 8.10E-12 | 1.13E-12 | 1.09E-13 | 2.64E-14 | 4.22E-14 | 8.95E-10 | 7.91E-11 | 1.16E-11 | -- |
| Silver | 2.16E-10 | 9.29E-11 | 1.30E-11 | 1.56E-10 | 3.79E-11 | 6.05E-11 | 1.03E-08 | 6.42E-09 | 6.05E-10 | -- |
| Thallium | 2.07E-08 | 8.91E-09 | 1.24E-09 | 5.99E-10 | 1.45E-10 | 2.32E-10 | 7.10E-08 | 3.83E-09 | 2.32E-10 | -- |
| Tin | 2.25E-08 | 9.65E-09 | 1.35E-09 | 6.49E-09 | 1.57E-09 | 2.51E-09 | 6.08E-08 | 4.37E-08 | 3.77E-09 | -- |
| Vanadium | 2.14E-09 | 9.22E-10 | 1.29E-10 | 6.20E-10 | 1.50E-10 | 2.40E-10 | 3.09E-09 | 1.53E-09 | 1.80E-10 | -- |
| Zinc | 9.35E-08 | 4.02E-08 | 5.61E-09 | 5.40E-09 | 1.31E-09 | 2.09E-09 | 1.69E-06 | 1.95E-06 | 2.36E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Tooley**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.50E-10 |
| Anthracene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.98E-11 |
| Fluorene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.80E-11 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.61E-10 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.44E-13 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.81E-12 |
| Bromoform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.59E-12 |
| Carbon Tetrachloride | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.64E-13 |
| Chloroform | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-12 |
| Dichloromethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.11E-10 |
| O-Terphenyl | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.13E-11 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.49E-11 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.62E-11 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.03E-12 |
| 1,2-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.28E-10 |
| Hexachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.38E-12 |
| Pentachlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.22E-10 |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.25E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-08 |
| Arsenic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.12E-09 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.30E-08 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.13E-09 |
| Boron | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.48E-06 |
| Cadmium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.05E-07 |
| Chromium (Total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.12E-09 |
| Chromium VI | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.39E-10 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.07E-08 |
| Lead | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.96E-07 |
| Mercury - Inorganic | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.57E-08 |
| Methyl Mercury | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.65E-09 |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.40E-07 |
| Phosphorus | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.83E-06 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.01E-09 |
| Silver | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.79E-08 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.07E-07 |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.52E-07 |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.00E-09 |
| Zinc | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.14E-06 |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Farmer**

| COPC | Soil/Dust Ingestion- Summer - Outdoor | Soil/Dust Ingestion - Winter - Outdoor | Dust Ingestion - Summer - Indoor | Soil/Dust Dermal - Summer - Outdoor | Soil/Dust Dermal - Winter - Outdoor | Dust Dermal - Summer - Indoor | Ingestion - Aboveground Garden Produce | Ingestion - Aboveground Prot. Garden Produce | Ingestion - Belowground Garden Produce | Ingestion - Home Grown Fruit |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | 1.43E-12 | 6.15E-13 | 8.58E-14 | 8.27E-13 | 2.00E-13 | 3.20E-13 | 8.21E-11 | 1.47E-10 | 1.39E-11 | 2.22E-10 |
| Anthracene | 1.41E-12 | 6.06E-13 | 8.46E-14 | 1.18E-12 | 2.87E-13 | 4.58E-13 | 3.64E-11 | 6.52E-11 | 9.71E-14 | 5.69E-15 |
| Fluorene | 1.42E-12 | 6.11E-13 | 8.53E-14 | 8.22E-13 | 1.99E-13 | 3.18E-13 | 5.47E-11 | 9.82E-11 | 1.23E-13 | 2.14E-14 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | 2.66E-10 | 1.14E-10 | 1.59E-11 | 1.07E-10 | 2.61E-11 | 4.16E-11 | 4.79E-10 | 8.58E-10 | 1.16E-10 | 3.14E-12 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | 1.14E-13 | 4.89E-14 | 6.83E-15 | 9.87E-15 | 2.39E-15 | 3.82E-15 | 2.56E-13 | 2.47E-13 | 5.35E-14 | 6.86E-14 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 8.18E-16 | 3.52E-16 | 4.91E-17 | 4.73E-16 | 1.15E-16 | 1.83E-16 | 3.04E-13 | 5.41E-13 | 3.31E-12 | 5.67E-15 |
| Bromoform | 2.28E-15 | 9.79E-16 | 1.37E-16 | 7.24E-16 | 1.75E-16 | 2.80E-16 | 9.97E-13 | 1.79E-12 | 1.28E-12 | 1.41E-16 |
| Carbon Tetrachloride | 1.63E-16 | 7.02E-17 | 9.79E-18 | 4.72E-16 | 1.14E-16 | 1.83E-16 | 4.06E-14 | 7.24E-14 | 7.09E-13 | 5.47E-16 |
| Chloroform | 3.66E-16 | 1.57E-16 | 2.20E-17 | 1.06E-16 | 2.57E-17 | 4.10E-17 | 2.63E-13 | 4.71E-13 | 1.68E-12 | 2.74E-15 |
| Dichloromethane | 6.56E-14 | 2.82E-14 | 3.94E-15 | 1.90E-14 | 4.60E-15 | 7.35E-15 | 1.20E-10 | 2.14E-10 | 1.08E-09 | 2.85E-13 |
| O-Terphenyl | 4.53E-12 | 1.95E-12 | 2.72E-13 | 2.62E-12 | 6.34E-13 | 1.01E-12 | 3.05E-11 | 5.38E-11 | 4.64E-12 | 1.49E-12 |
| Trichlorofluoromethane (FREON 11) | 1.69E-14 | 7.27E-15 | 1.01E-15 | 9.78E-15 | 2.37E-15 | 3.79E-15 | 6.28E-12 | 1.12E-11 | 6.28E-11 | 1.20E-13 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | 6.43E-13 | 2.76E-13 | 3.86E-14 | 1.86E-13 | 4.50E-14 | 7.19E-14 | 1.11E-11 | 1.99E-11 | 3.08E-11 | 3.77E-15 |
| 1,2,4-Trichlorobenzene | 1.52E-14 | 6.52E-15 | 9.09E-16 | 3.50E-15 | 8.49E-16 | 1.36E-15 | 7.61E-13 | 1.36E-12 | 5.36E-13 | 9.85E-16 |
| 1,2-Dichlorobenzene | 2.04E-13 | 8.76E-14 | 1.22E-14 | 5.89E-14 | 1.43E-14 | 2.28E-14 | 2.36E-11 | 4.18E-11 | 2.28E-10 | 6.29E-13 |
| Hexachlorobenzene | 2.76E-13 | 1.19E-13 | 1.66E-14 | 1.04E-13 | 2.51E-14 | 4.02E-14 | 2.46E-12 | 4.40E-12 | 3.21E-12 | 2.57E-14 |
| Pentachlorobenzene | 9.99E-12 | 4.29E-12 | 5.99E-13 | 2.89E-13 | 7.00E-14 | 1.12E-13 | 1.06E-10 | 1.89E-10 | 8.39E-12 | 8.97E-14 |
| Pentachlorophenol | 4.70E-12 | 2.02E-12 | 2.82E-13 | 1.49E-12 | 3.62E-13 | 5.78E-13 | 1.32E-09 | 9.77E-11 | 3.51E-09 | 3.41E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | 1.39E-09 | 5.96E-10 | 8.31E-11 | 4.00E-10 | 9.70E-11 | 1.55E-10 | 2.43E-08 | 2.10E-08 | 1.90E-09 | -- |
| Arsenic | 1.37E-10 | 5.91E-11 | 8.25E-12 | 1.19E-11 | 2.89E-12 | 4.62E-12 | 2.16E-09 | 4.14E-10 | 5.02E-11 | -- |
| Barium | 9.75E-10 | 4.19E-10 | 5.85E-11 | 2.82E-10 | 6.83E-11 | 1.09E-10 | 1.81E-08 | 1.50E-08 | 6.68E-10 | -- |
| Beryllium | 8.72E-10 | 3.75E-10 | 5.23E-11 | 7.56E-11 | 1.83E-11 | 2.93E-11 | 2.13E-09 | 1.07E-09 | 5.97E-11 | -- |
| Boron | 5.39E-09 | 2.32E-09 | 3.24E-10 | 1.56E-09 | 3.78E-10 | 6.04E-10 | 3.93E-06 | 5.79E-06 | 4.93E-07 | -- |
| Cadmium | 5.75E-09 | 2.47E-09 | 3.45E-10 | 2.33E-09 | 5.64E-10 | 9.01E-10 | 2.23E-07 | 3.42E-07 | 1.68E-08 | -- |
| Chromium (Total) | 4.84E-10 | 2.08E-10 | 2.90E-11 | 5.59E-11 | 1.36E-11 | 2.17E-11 | 1.10E-08 | 1.12E-09 | 9.95E-11 | -- |
| Chromium VI | 6.88E-11 | 2.96E-11 | 4.13E-12 | 1.79E-11 | 4.34E-12 | 6.93E-12 | 1.56E-09 | 1.60E-10 | 1.41E-11 | -- |
| Cobalt | 2.93E-09 | 1.26E-09 | 1.76E-10 | 8.46E-10 | 2.05E-10 | 3.28E-10 | 3.34E-08 | 1.21E-08 | 9.36E-10 | -- |
| Lead | 1.34E-07 | 5.74E-08 | 8.01E-09 | 2.32E-09 | 5.61E-10 | 8.97E-10 | 7.12E-07 | 8.65E-07 | 5.49E-08 | -- |
| Mercury - Inorganic | 6.97E-09 | 3.00E-09 | 4.18E-10 | 1.01E-09 | 2.44E-10 | 3.90E-10 | 3.43E-08 | 4.81E-08 | 1.15E-08 | 1.17E-08 |
| Methyl Mercury | 3.50E-10 | 1.50E-10 | 2.10E-11 | 2.02E-10 | 4.90E-11 | 7.82E-11 | 4.82E-09 | 4.89E-09 | 1.58E-09 | 3.30E-09 |
| Nickel | 6.27E-08 | 2.70E-08 | 3.76E-09 | 6.35E-08 | 1.54E-08 | 2.46E-08 | 5.56E-07 | 2.78E-07 | 2.29E-08 | -- |
| Phosphorus | 1.88E-09 | 8.09E-10 | 1.13E-10 | 5.44E-10 | 1.32E-10 | 2.11E-10 | 1.96E-06 | 3.14E-06 | 3.01E-07 | -- |
| Selenium | 2.77E-11 | 1.19E-11 | 1.66E-12 | 1.60E-13 | 3.88E-14 | 6.20E-14 | 2.35E-09 | 2.57E-10 | 2.79E-11 | -- |
| Silver | 3.18E-10 | 1.37E-10 | 1.91E-11 | 2.30E-10 | 5.57E-11 | 8.89E-11 | 2.71E-08 | 2.09E-08 | 1.45E-09 | -- |
| Thallium | 3.05E-08 | 1.31E-08 | 1.83E-09 | 8.81E-10 | 2.14E-10 | 3.41E-10 | 1.86E-07 | 1.25E-08 | 5.57E-10 | -- |
| Tin | 3.30E-08 | 1.42E-08 | 1.98E-09 | 9.54E-09 | 2.31E-09 | 3.70E-09 | 1.60E-07 | 1.42E-07 | 9.05E-09 | -- |
| Vanadium | 3.15E-09 | 1.36E-09 | 1.89E-10 | 9.11E-10 | 2.21E-10 | 3.53E-10 | 8.13E-09 | 4.98E-09 | 4.32E-10 | -- |
| Zinc | 1.37E-07 | 5.91E-08 | 8.25E-09 | 7.95E-09 | 1.93E-09 | 3.08E-09 | 4.46E-06 | 6.35E-06 | 5.65E-06 | -- |

**Chronic Daily Intake (mg/kg-day) for Mother Receptor Used in Calculation of Infant Exposure due to Consumption of Breast Milk**
**Process Upset Case - 400,000 tpy**
**Farmer**

| COPC | Ingestion - Wild Game | Ingestion - Fish - Lake | Ingestion - Surface Water | Ingestion - Beef | Ingestion - Milk | Ingestion - Pork | Ingestion - Poultry | Ingestion - Egg | Dermal - Surface Water | Total (All Pathways) |
|---|---|---|---|---|---|---|---|---|---|---|
| **PAHs** | | | | | | | | | | |
| Acenaphthene | -- | -- | -- | 1.11E-12 | 2.32E-12 | 1.37E-13 | 2.96E-13 | 2.73E-13 | -- | 4.72E-10 |
| Anthracene | -- | -- | -- | 8.21E-13 | 1.59E-12 | 1.12E-13 | 2.58E-13 | 2.38E-13 | -- | 1.09E-10 |
| Fluorene | -- | -- | -- | 9.85E-13 | 1.97E-12 | 1.26E-13 | 2.78E-13 | 2.57E-13 | -- | 1.60E-10 |
| **PCBs** | | | | | | | | | | |
| Aroclor 1254 (Total PCBs) | -- | -- | -- | 4.98E-09 | 6.23E-09 | 9.40E-10 | 2.50E-11 | 2.31E-11 | -- | 1.42E-08 |
| **Dioxins and Furans** | | | | | | | | | | |
| 2,3,7,8-TCDD Equivalent | -- | -- | -- | 3.85E-12 | 7.03E-12 | 3.62E-13 | 8.88E-15 | 8.19E-15 | -- | 1.21E-11 |
| **VOCs** | | | | | | | | | | |
| 1,1,1-Trichloroethane | -- | -- | -- | 2.85E-10 | 3.81E-10 | 1.03E-11 | 1.33E-13 | 1.23E-13 | -- | 6.81E-10 |
| Bromoform | -- | -- | -- | 7.85E-09 | 1.05E-08 | 2.85E-10 | 3.67E-12 | 3.38E-12 | -- | 1.87E-08 |
| Carbon Tetrachloride | -- | -- | -- | 9.02E-11 | 1.21E-10 | 3.28E-12 | 4.22E-14 | 3.89E-14 | -- | 2.15E-10 |
| Chloroform | -- | -- | -- | 5.47E-11 | 7.33E-11 | 1.99E-12 | 2.56E-14 | 2.36E-14 | -- | 1.32E-10 |
| Dichloromethane | -- | -- | -- | 6.02E-09 | 8.07E-09 | 2.19E-10 | 2.82E-12 | 2.60E-12 | -- | 1.57E-08 |
| O-Terphenyl | -- | -- | -- | 2.80E-10 | 4.24E-10 | 2.65E-11 | 6.52E-13 | 6.02E-13 | -- | 8.33E-10 |
| Trichlorofluoromethane (FREON 11) | -- | -- | -- | 3.25E-08 | 4.35E-08 | 1.18E-09 | 1.52E-11 | 1.40E-11 | -- | 7.73E-08 |
| **Chlorinated Monocyclic Aromatics** | | | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | -- | -- | -- | 9.37E-11 | 1.33E-10 | 5.00E-12 | 1.14E-13 | 1.05E-13 | -- | 2.95E-10 |
| 1,2,4-Trichlorobenzene | -- | -- | -- | 5.74E-11 | 7.73E-11 | 2.13E-12 | 2.80E-14 | 2.58E-14 | -- | 1.39E-10 |
| 1,2-Dichlorobenzene | -- | -- | -- | 1.35E-09 | 1.81E-09 | 4.96E-11 | 6.46E-13 | 5.96E-13 | -- | 3.50E-09 |
| Hexachlorobenzene | -- | -- | -- | 9.31E-11 | 1.27E-10 | 3.96E-12 | 6.01E-14 | 5.55E-14 | -- | 2.35E-10 |
| Pentachlorobenzene | -- | -- | -- | 4.25E-10 | 6.95E-10 | 6.41E-11 | 1.58E-12 | 1.45E-12 | -- | 1.51E-09 |
| Pentachlorophenol | -- | -- | -- | 3.29E-10 | 6.67E-10 | 6.38E-12 | 1.86E-15 | 1.72E-15 | -- | 9.35E-09 |
| **Inorganics** | | | | | | | | | | |
| Antimony | -- | -- | -- | 8.01E-09 | 7.46E-09 | 3.60E-10 | 5.10E-12 | 4.71E-12 | -- | 6.58E-08 |
| Arsenic | -- | -- | -- | 1.50E-09 | 4.12E-10 | 5.40E-11 | 8.31E-13 | 7.67E-13 | -- | 4.82E-09 |
| Barium | -- | -- | -- | 8.01E-10 | 1.73E-08 | 3.37E-11 | 4.82E-13 | 4.45E-13 | -- | 5.37E-08 |
| Beryllium | -- | -- | -- | 1.04E-09 | 7.16E-12 | 1.04E-10 | 2.54E-12 | 2.34E-12 | -- | 5.83E-09 |
| Boron | -- | -- | -- | 3.88E-07 | 8.14E-07 | 1.83E-08 | 2.39E-10 | 2.21E-10 | -- | 1.14E-05 |
| Cadmium | -- | -- | -- | 4.54E-09 | 2.33E-09 | 3.06E-10 | 3.73E-09 | 1.42E-10 | -- | 6.05E-07 |
| Chromium (Total) | -- | -- | -- | 1.99E-08 | 5.03E-08 | 5.95E-10 | 8.15E-12 | 7.52E-12 | -- | 8.38E-08 |
| Chromium VI | -- | -- | -- | 2.83E-09 | 7.15E-09 | 8.47E-11 | 1.16E-12 | 1.07E-12 | -- | 1.19E-08 |
| Cobalt | -- | -- | -- | 2.15E-07 | 4.07E-07 | 9.78E-09 | 1.81E-10 | 1.67E-10 | -- | 6.84E-07 |
| Lead | -- | -- | -- | 6.36E-08 | 4.39E-07 | 5.61E-09 | 1.24E-10 | 1.15E-10 | -- | 2.34E-06 |
| Mercury - Inorganic | -- | -- | -- | 2.44E-08 | 6.70E-08 | 2.27E-11 | 7.04E-10 | 1.14E-09 | -- | 2.11E-07 |
| Methyl Mercury | -- | -- | -- | 3.72E-10 | 1.31E-09 | 1.99E-13 | 5.70E-12 | 9.20E-12 | -- | 1.71E-08 |
| Nickel | -- | -- | -- | 1.11E-06 | 1.63E-06 | 5.90E-08 | 1.15E-09 | 1.06E-09 | -- | 3.85E-06 |
| Phosphorus | -- | -- | -- | 8.19E-06 | 1.77E-05 | 5.55E-07 | 9.78E-09 | 9.02E-09 | -- | 3.19E-05 |
| Selenium | -- | -- | -- | 1.65E-09 | 4.05E-08 | 2.27E-09 | 1.36E-10 | 2.20E-10 | -- | 4.74E-08 |
| Silver | -- | -- | -- | 1.99E-08 | 1.27E-06 | 5.82E-10 | 5.39E-12 | 4.97E-12 | -- | 1.34E-06 |
| Thallium | -- | -- | -- | 2.99E-06 | 1.29E-06 | 1.68E-07 | 3.53E-09 | 3.26E-09 | -- | 4.70E-06 |
| Tin | -- | -- | -- | 4.36E-06 | 7.58E-06 | 3.57E-07 | 8.00E-09 | 7.38E-09 | -- | 1.27E-05 |
| Vanadium | -- | -- | -- | 8.80E-09 | 1.40E-08 | 9.34E-10 | 2.32E-11 | 2.14E-11 | -- | 4.35E-08 |
| Zinc | -- | -- | -- | 6.93E-08 | 2.35E-07 | 4.20E-09 | 7.02E-09 | 1.13E-08 | -- | 1.70E-05 |

# APPENDIX I-11

Revised Inhalation Results – Normal Operations (Project Alone Case) – 140,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0017 | 0.0017 | - | 0.0027 | 0.0027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0011 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.044 | 0.044 | - | 0.023 | 0.023 |
| Hydrogen Fluoride (HF)[ac] | - | 0.013 | 0.013 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.11 | 0.27 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.011 | 0.011 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.018 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0044 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.018 | 0.047 | 0.070 | 0.0064 | 0.077 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.0E-04 | 0.0017 | 1.2E-04 | 5.5E-06 | 1.3E-04 |
| Arsenic | 0.022 | 7.6E-04 | 0.023 | 0.0060 | 7.0E-05 | 0.0061 |
| Barium | 0.0040 | 1.5E-04 | 0.0041 | 8.2E-04 | 1.1E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0060 | 0.043 | 0.030 | 0.0017 | 0.032 |
| Boron[c] | 0.019 | 0.0055 | 0.024 | - | - | - |
| Cadmium | 0.015 | 0.025 | 0.040 | 0.024 | 0.014 | 0.038 |
| Chromium (hexavalent)[ac] | - | 0.0012 | 0.0012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 8.2E-04 | 0.0075 | - | - | - |
| Cobalt | 0.0074 | 0.011 | 0.018 | 0.0060 | 0.0029 | 0.0089 |
| Lead | 0.0081 | 0.012 | 0.020 | 0.0100 | 0.0050 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0091 | 0.0091 | - | 3.8E-04 | 3.8E-04 |
| Nickel[c] | 0.0018 | 0.0053 | 0.0071 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.7E-05 | 0.0038 | 3.0E-04 | 2.4E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.012 | 0.020 | 3.4E-04 | 1.7E-04 | 5.1E-04 |
| Thallium[c] | 0.0073 | 0.014 | 0.021 | - | - | - |
| Tin | 3.7E-04 | 3.2E-04 | 6.9E-04 | 3.0E-04 | 8.8E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 8.4E-04 | 0.0084 | 0.0015 | 5.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0014 | 0.0035 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.3E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.0E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.7E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.0E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.5E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.9E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 6.0E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.6E-04 | 0.0013 | 2.8E-04 | 2.4E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.4E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.0E-08 | 7.0E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.5E-05 | 6.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.9E-08 | 4.9E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-05 | 4.4E-04 | 4.4E-05 | 5.2E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.7E-08 | 2.8E-04 | 1.1E-04 | 6.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.6E-10 | 0.0091 | 0.0035 | 7.2E-11 | 0.0035 |
| Benzene | 0.17 | 6.6E-05 | 0.17 | 0.41 | 5.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0046 | 0.0067 | - | - | - |
| Bromoform | 0.0014 | 5.0E-04 | 0.0019 | 5.4E-04 | 6.3E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 1.1E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-06 | 0.014 | 0.31 | 9.0E-06 | 0.31 |
| Chloroform | 0.0055 | 1.8E-06 | 0.0055 | 0.23 | 2.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.8E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.6E-06 | 2.2E-04 | 0.0058 | 4.0E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.2E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-05 | 0.0032 | 0.0017 | 6.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0011 | 0.55 | 0.38 | 2.6E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.9E-07 | 7.2E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.0E-07 | 6.0E-05 | 0.0014 | 7.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.9E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.8E-08 | 3.1E-05 | 1.9E-05 | 1.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.3E-07 | 0.0024 | 0.045 | 2.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 7.9E-07 | 1.5E-06 | 0.0059 | 0.0022 | 0.0081 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-05 | 5.4E-04 | 0.0066 | 4.1E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0018 | 0.0066 | 0.0083 | 4.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 8.3E-04 | 0.0087 | 0.0079 | 4.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.24 | 0.56 | 1.1 | 0.098 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.1E-04 | 0.026 | 0.55 | 1.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 8.3E-04 | 8.3E-04 | - | 1.0E-03 | 1.0E-03 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.4E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.022 | 0.022 | - | 0.0083 | 0.0083 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0065 | 0.0065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.055 | 0.22 | 0.29 | 0.011 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0069 | 0.0069 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.011 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0029 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0092 | 0.037 | 0.070 | 0.0023 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-05 | 0.0016 | 1.2E-04 | 2.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.8E-04 | 0.022 | 0.0060 | 2.6E-05 | 0.0061 |
| Barium | 0.0040 | 7.7E-05 | 0.0041 | 8.2E-04 | 3.9E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0030 | 0.040 | 0.030 | 6.1E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0028 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.027 | 0.024 | 0.0052 | 0.029 |
| Chromium (hexavalent)[ac] | - | 5.8E-04 | 5.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.1E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0052 | 0.013 | 0.0060 | 0.0011 | 0.0071 |
| Lead | 0.0081 | 0.0060 | 0.014 | 0.0100 | 0.0018 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0045 | 0.0045 | - | 1.4E-04 | 1.4E-04 |
| Nickel[c] | 0.0018 | 0.0026 | 0.0044 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.3E-05 | 0.0037 | 3.0E-04 | 8.9E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0061 | 0.014 | 3.4E-04 | 6.2E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0071 | 0.014 | - | - | - |
| Tin | 3.7E-04 | 1.6E-04 | 5.3E-04 | 3.0E-04 | 3.2E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 4.2E-04 | 0.0080 | 0.0015 | 2.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.2E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.8E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.3E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.7E-07 | 5.7E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.2E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.3E-04 | 0.0012 | 2.8E-04 | 8.9E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-08 | 3.5E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-08 | 2.4E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-06 | 4.3E-04 | 4.4E-05 | 1.9E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-08 | 2.8E-04 | 1.1E-04 | 2.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.8E-10 | 0.0091 | 0.0035 | 2.7E-11 | 0.0035 |
| Benzene | 0.17 | 3.3E-05 | 0.17 | 0.41 | 2.0E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0023 | 0.0044 | - | - | - |
| Bromoform | 0.0014 | 2.5E-04 | 0.0017 | 5.4E-04 | 2.3E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 5.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.0E-07 | 0.014 | 0.31 | 3.3E-06 | 0.31 |
| Chloroform | 0.0055 | 9.2E-07 | 0.0055 | 0.23 | 9.4E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-06 | 2.2E-04 | 0.0058 | 1.5E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.8E-05 | 0.0032 | 0.0017 | 2.5E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.7E-04 | 0.55 | 0.38 | 9.7E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-08 | 6.0E-05 | 0.0014 | 2.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-08 | 3.1E-05 | 1.9E-05 | 4.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-07 | 0.0024 | 0.045 | 7.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.3E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.9E-07 | 1.1E-06 | 0.0059 | 8.0E-04 | 0.0067 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-06 | 5.4E-04 | 0.0066 | 1.5E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 8.8E-04 | 0.0057 | 0.0083 | 1.7E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.1E-04 | 0.0083 | 0.0079 | 1.5E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.45 | 1.1 | 0.041 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.0E-04 | 0.026 | 0.55 | 4.4E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 8.5E-04 | 8.5E-04 | - | 9.8E-04 | 9.8E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.6E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.022 | 0.022 | - | 0.0082 | 0.0082 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0067 | 0.0067 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.057 | 0.22 | 0.29 | 0.011 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0073 | 0.0073 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.012 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0030 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0095 | 0.038 | 0.070 | 0.0023 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.0E-04 | 0.0016 | 1.2E-04 | 2.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.9E-04 | 0.022 | 0.0060 | 2.5E-05 | 0.0061 |
| Barium | 0.0040 | 7.9E-05 | 0.0041 | 8.2E-04 | 3.8E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0031 | 0.040 | 0.030 | 6.0E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0029 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.028 | 0.024 | 0.0051 | 0.029 |
| Chromium (hexavalent)[ac] | - | 6.0E-04 | 6.0E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.2E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0054 | 0.013 | 0.0060 | 0.0010 | 0.0071 |
| Lead | 0.0081 | 0.0062 | 0.014 | 0.0100 | 0.0018 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0047 | 0.0047 | - | 1.4E-04 | 1.4E-04 |
| Nickel[c] | 0.0018 | 0.0027 | 0.0045 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.5E-05 | 0.0037 | 3.0E-04 | 8.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0063 | 0.015 | 3.4E-04 | 6.1E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0073 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.6E-04 | 5.3E-04 | 3.0E-04 | 3.2E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 4.3E-04 | 0.0080 | 0.0015 | 2.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.5E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.7E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.6E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.1E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.2E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.8E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.6E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.5E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.2E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.4E-04 | 0.0012 | 2.8E-04 | 8.7E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.6E-08 | 3.6E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-08 | 2.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.7E-06 | 4.3E-04 | 4.4E-05 | 1.9E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-08 | 2.8E-04 | 1.1E-04 | 2.3E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.9E-10 | 0.0091 | 0.0035 | 2.6E-11 | 0.0035 |
| Benzene | 0.17 | 3.4E-05 | 0.17 | 0.41 | 1.9E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0024 | 0.0045 | - | - | - |
| Bromoform | 0.0014 | 2.6E-04 | 0.0017 | 5.4E-04 | 2.3E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 5.6E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.2E-07 | 0.014 | 0.31 | 3.2E-06 | 0.31 |
| Chloroform | 0.0055 | 9.5E-07 | 0.0055 | 0.23 | 9.2E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.0E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-06 | 2.2E-04 | 0.0058 | 1.4E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-05 | 0.0032 | 0.0017 | 2.4E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.9E-04 | 0.55 | 0.38 | 9.6E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.3E-08 | 6.0E-05 | 0.0014 | 2.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-08 | 3.1E-05 | 1.9E-05 | 4.3E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-07 | 0.0024 | 0.045 | 7.4E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.2E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-07 | 1.1E-06 | 0.0059 | 7.9E-04 | 0.0067 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.1E-06 | 5.4E-04 | 0.0066 | 1.5E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 9.0E-04 | 0.0057 | 0.0083 | 1.6E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.3E-04 | 0.0083 | 0.0079 | 1.5E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.45 | 1.1 | 0.041 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 4.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0014 | 0.0014 | - | 0.0021 | 0.0021 |
| Carbon Monoxide (CO)[c] | 0.069 | 9.1E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.036 | 0.036 | - | 0.018 | 0.018 |
| Hydrogen Fluoride (HF)[ac] | - | 0.011 | 0.011 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.024 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.012 | 0.012 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.020 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0050 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.015 | 0.044 | 0.070 | 0.0050 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.7E-04 | 0.0016 | 1.2E-04 | 4.3E-06 | 1.3E-04 |
| Arsenic | 0.022 | 6.4E-04 | 0.023 | 0.0060 | 5.5E-05 | 0.0061 |
| Barium | 0.0040 | 1.3E-04 | 0.0041 | 8.2E-04 | 8.3E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0051 | 0.042 | 0.030 | 0.0013 | 0.032 |
| Boron[c] | 0.019 | 0.0046 | 0.023 | - | - | - |
| Cadmium | 0.015 | 0.021 | 0.036 | 0.024 | 0.011 | 0.035 |
| Chromium (hexavalent)[ac] | - | 9.7E-04 | 9.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 6.8E-04 | 0.0074 | - | - | - |
| Cobalt | 0.0074 | 0.0088 | 0.016 | 0.0060 | 0.0023 | 0.0083 |
| Lead | 0.0081 | 0.010 | 0.018 | 0.0100 | 0.0039 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0076 | 0.0076 | - | 3.0E-04 | 3.0E-04 |
| Nickel[c] | 0.0018 | 0.0044 | 0.0062 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.3E-05 | 0.0037 | 3.0E-04 | 1.9E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.010 | 0.018 | 3.4E-04 | 1.3E-04 | 4.7E-04 |
| Thallium[c] | 0.0073 | 0.012 | 0.019 | - | - | - |
| Tin | 3.7E-04 | 2.7E-04 | 6.3E-04 | 3.0E-04 | 6.9E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 7.1E-04 | 0.0083 | 0.0015 | 4.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0012 | 0.0033 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 5.6E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.4E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.1E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.1E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.5E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.4E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.3E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.3E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 9.5E-07 | 9.5E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.6E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 9.2E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.0E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.7E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.2E-04 | 0.0012 | 2.8E-04 | 1.9E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.0E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.9E-08 | 5.9E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.3E-05 | 6.7E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.1E-08 | 4.1E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-05 | 4.4E-04 | 4.4E-05 | 4.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.9E-08 | 2.8E-04 | 1.1E-04 | 5.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.7E-10 | 0.0091 | 0.0035 | 5.7E-11 | 0.0035 |
| Benzene | 0.17 | 5.5E-05 | 0.17 | 0.41 | 4.2E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0038 | 0.0059 | - | - | - |
| Bromoform | 0.0014 | 4.2E-04 | 0.0019 | 5.4E-04 | 5.0E-05 | 5.9E-04 |
| Bromomethane | 0.0018 | 9.1E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-06 | 0.014 | 0.31 | 7.1E-06 | 0.31 |
| Chloroform | 0.0055 | 1.5E-06 | 0.0055 | 0.23 | 2.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.2E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.8E-06 | 2.2E-04 | 0.0058 | 3.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 4.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-05 | 0.0032 | 0.0017 | 5.3E-06 | 0.0017 |
| Formaldehyde | 0.55 | 9.6E-04 | 0.55 | 0.38 | 2.1E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.0E-07 | 7.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 8.6E-08 | 6.0E-05 | 0.0014 | 6.2E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.1E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.8E-08 | 3.1E-05 | 1.9E-05 | 9.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.8E-07 | 0.0024 | 0.045 | 1.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 6.6E-07 | 1.4E-06 | 0.0059 | 0.0017 | 0.0076 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.3E-06 | 5.4E-04 | 0.0066 | 3.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0015 | 0.0063 | 0.0083 | 3.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 6.9E-04 | 0.0086 | 0.0079 | 3.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.20 | 0.52 | 1.1 | 0.084 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.8E-04 | 0.026 | 0.55 | 9.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0026 | 0.0026 | - | 0.0035 | 0.0035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0017 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.067 | 0.067 | - | 0.029 | 0.029 |
| Hydrogen Fluoride (HF)[ac] | - | 0.020 | 0.020 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.17 | 0.33 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.013 | 0.013 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.022 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0056 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.028 | 0.057 | 0.070 | 0.0083 | 0.078 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.1E-04 | 0.0018 | 1.2E-04 | 7.1E-06 | 1.3E-04 |
| Arsenic | 0.022 | 0.0012 | 0.023 | 0.0060 | 9.1E-05 | 0.0061 |
| Barium | 0.0040 | 2.4E-04 | 0.0042 | 8.2E-04 | 1.4E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0093 | 0.046 | 0.030 | 0.0022 | 0.032 |
| Boron[c] | 0.019 | 0.0085 | 0.027 | - | - | - |
| Cadmium | 0.015 | 0.039 | 0.054 | 0.024 | 0.018 | 0.042 |
| Chromium (hexavalent)[ac] | - | 0.0018 | 0.0018 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0013 | 0.0080 | - | - | - |
| Cobalt | 0.0074 | 0.016 | 0.024 | 0.0060 | 0.0038 | 0.0098 |
| Lead | 0.0081 | 0.019 | 0.027 | 0.0100 | 0.0065 | 0.016 |
| Mercury - Inorganic[a] | - | 0.014 | 0.014 | - | 4.9E-04 | 4.9E-04 |
| Nickel[c] | 0.0018 | 0.0081 | 0.0099 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.3E-04 | 0.0038 | 3.0E-04 | 3.1E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.019 | 0.027 | 3.4E-04 | 2.2E-04 | 5.6E-04 |
| Thallium[c] | 0.0073 | 0.022 | 0.029 | - | - | - |
| Tin | 3.7E-04 | 4.9E-04 | 8.6E-04 | 3.0E-04 | 1.1E-04 | 4.2E-04 |
| Vanadium | 0.0075 | 0.0013 | 0.0088 | 0.0015 | 7.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0022 | 0.0043 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.1E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.1E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.1E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.6E-05 | 3.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 2.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.7E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.2E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.6E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.7E-06 | 1.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.4E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.1E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 5.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 7.8E-04 | 0.0055 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 4.0E-04 | 0.0014 | 2.8E-04 | 3.1E-05 | 3.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.7E-08 | 9.0E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.1E-07 | 1.1E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.2E-04 | 7.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.6E-08 | 7.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.3E-05 | 4.5E-04 | 4.4E-05 | 6.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.2E-08 | 2.8E-04 | 1.1E-04 | 8.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 8.6E-10 | 0.0091 | 0.0035 | 9.4E-11 | 0.0035 |
| Benzene | 0.17 | 1.0E-04 | 0.17 | 0.41 | 7.0E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0070 | 0.0092 | - | - | - |
| Bromoform | 0.0014 | 7.7E-04 | 0.0022 | 5.4E-04 | 8.2E-05 | 6.2E-04 |
| Bromomethane | 0.0018 | 1.7E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.8E-06 | 0.014 | 0.31 | 1.2E-05 | 0.31 |
| Chloroform | 0.0055 | 2.8E-06 | 0.0055 | 0.23 | 3.3E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.7E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.5E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.0E-06 | 2.3E-04 | 0.0058 | 5.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 6.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-05 | 0.0032 | 0.0017 | 8.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0018 | 0.55 | 0.38 | 3.4E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 9.1E-07 | 7.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.6E-07 | 6.0E-05 | 0.0014 | 1.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.9E-08 | 3.1E-05 | 1.9E-05 | 1.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.1E-07 | 0.0024 | 0.045 | 2.7E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-06 | 1.9E-06 | 0.0059 | 0.0028 | 0.0087 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-05 | 5.5E-04 | 0.0066 | 5.4E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0027 | 0.0075 | 0.0083 | 5.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0013 | 0.0091 | 0.0079 | 5.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.36 | 0.69 | 1.1 | 0.13 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 3.2E-04 | 0.027 | 0.55 | 1.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0016 | 0.0016 | - | 0.0027 | 0.0027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0010 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.042 | 0.042 | - | 0.022 | 0.022 |
| Hydrogen Fluoride (HF)[ac] | - | 0.013 | 0.013 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.11 | 0.27 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.012 | 0.012 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.020 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0050 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.018 | 0.046 | 0.070 | 0.0063 | 0.076 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.9E-04 | 0.0017 | 1.2E-04 | 5.4E-06 | 1.3E-04 |
| Arsenic | 0.022 | 7.3E-04 | 0.023 | 0.0060 | 6.9E-05 | 0.0061 |
| Barium | 0.0040 | 1.5E-04 | 0.0041 | 8.2E-04 | 1.0E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0058 | 0.043 | 0.030 | 0.0016 | 0.032 |
| Boron[c] | 0.019 | 0.0053 | 0.024 | - | - | - |
| Cadmium | 0.015 | 0.024 | 0.039 | 0.024 | 0.014 | 0.038 |
| Chromium (hexavalent)[ac] | - | 0.0011 | 0.0011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 7.9E-04 | 0.0075 | - | - | - |
| Cobalt | 0.0074 | 0.010 | 0.017 | 0.0060 | 0.0029 | 0.0089 |
| Lead | 0.0081 | 0.012 | 0.020 | 0.0100 | 0.0049 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0087 | 0.0087 | - | 3.7E-04 | 3.7E-04 |
| Nickel[c] | 0.0018 | 0.0051 | 0.0069 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.4E-05 | 0.0038 | 3.0E-04 | 2.4E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.012 | 0.020 | 3.4E-04 | 1.7E-04 | 5.1E-04 |
| Thallium[c] | 0.0073 | 0.014 | 0.021 | - | - | - |
| Tin | 3.7E-04 | 3.1E-04 | 6.7E-04 | 3.0E-04 | 8.7E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 8.1E-04 | 0.0084 | 0.0015 | 5.7E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0014 | 0.0035 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.5E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.1E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.7E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.1E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.9E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.1E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.6E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.3E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.3E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.6E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.5E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.9E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.5E-04 | 0.0013 | 2.8E-04 | 2.4E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.8E-08 | 6.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.2E-05 | 6.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.7E-08 | 4.7E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-05 | 4.4E-04 | 4.4E-05 | 5.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.5E-08 | 2.8E-04 | 1.1E-04 | 6.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.4E-10 | 0.0091 | 0.0035 | 7.1E-11 | 0.0035 |
| Benzene | 0.17 | 6.4E-05 | 0.17 | 0.41 | 5.3E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0044 | 0.0065 | - | - | - |
| Bromoform | 0.0014 | 4.8E-04 | 0.0019 | 5.4E-04 | 6.2E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 1.0E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-06 | 0.014 | 0.31 | 8.9E-06 | 0.31 |
| Chloroform | 0.0055 | 1.8E-06 | 0.0055 | 0.23 | 2.5E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.1E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.4E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.4E-06 | 2.2E-04 | 0.0058 | 3.9E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.5E-05 | 0.0032 | 0.0017 | 6.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0011 | 0.55 | 0.38 | 2.6E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.7E-07 | 7.2E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.9E-08 | 6.0E-05 | 0.0014 | 7.8E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.5E-08 | 3.1E-05 | 1.9E-05 | 1.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.2E-07 | 0.0024 | 0.045 | 2.0E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 7.6E-07 | 1.5E-06 | 0.0059 | 0.0022 | 0.0080 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.6E-06 | 5.4E-04 | 0.0066 | 4.1E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0017 | 0.0065 | 0.0083 | 4.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 8.0E-04 | 0.0087 | 0.0079 | 4.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.23 | 0.55 | 1.1 | 0.099 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.0E-04 | 0.026 | 0.55 | 1.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 5.6E-04 | 5.6E-04 | - | 8.2E-04 | 8.2E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 3.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.015 | 0.015 | - | 0.0068 | 0.0068 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0044 | 0.0044 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.037 | 0.20 | 0.29 | 0.0092 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0047 | 0.0047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0079 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0020 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0062 | 0.034 | 0.070 | 0.0019 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.7E-05 | 0.0015 | 1.2E-04 | 1.7E-06 | 1.2E-04 |
| Arsenic | 0.022 | 2.6E-04 | 0.022 | 0.0060 | 2.1E-05 | 0.0061 |
| Barium | 0.0040 | 5.2E-05 | 0.0040 | 8.2E-04 | 3.2E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0020 | 0.039 | 0.030 | 5.0E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0019 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0085 | 0.023 | 0.024 | 0.0042 | 0.028 |
| Chromium (hexavalent)[ac] | - | 3.9E-04 | 3.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.7E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0035 | 0.011 | 0.0060 | 8.8E-04 | 0.0069 |
| Lead | 0.0081 | 0.0041 | 0.012 | 0.0100 | 0.0015 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0030 | 0.0030 | - | 1.1E-04 | 1.1E-04 |
| Nickel[c] | 0.0018 | 0.0018 | 0.0036 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.9E-05 | 0.0037 | 3.0E-04 | 7.3E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0041 | 0.012 | 3.4E-04 | 5.1E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0048 | 0.012 | - | - | - |
| Tin | 3.7E-04 | 1.1E-04 | 4.7E-04 | 3.0E-04 | 2.7E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 2.8E-04 | 0.0078 | 0.0015 | 1.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 4.9E-04 | 0.0026 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.3E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.8E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.9E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 9.3E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.5E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.7E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.0E-05 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.2E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.1E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 9.2E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.9E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.0E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 3.8E-07 | 3.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.2E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.8E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.8E-05 | 0.0011 | 2.8E-04 | 7.3E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 8.2E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.4E-08 | 2.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.5E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.6E-08 | 1.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 5.0E-06 | 4.3E-04 | 4.4E-05 | 1.6E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.6E-08 | 2.8E-04 | 1.1E-04 | 1.9E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.9E-10 | 0.0091 | 0.0035 | 2.2E-11 | 0.0035 |
| Benzene | 0.17 | 2.2E-05 | 0.17 | 0.41 | 1.6E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0015 | 0.0037 | - | - | - |
| Bromoform | 0.0014 | 1.7E-04 | 0.0016 | 5.4E-04 | 1.9E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 3.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.0E-07 | 0.014 | 0.31 | 2.7E-06 | 0.31 |
| Chloroform | 0.0055 | 6.2E-07 | 0.0055 | 0.23 | 7.7E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.1E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.3E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.5E-06 | 2.2E-04 | 0.0058 | 1.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.6E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-05 | 0.0032 | 0.0017 | 2.0E-06 | 0.0017 |
| Formaldehyde | 0.55 | 3.9E-04 | 0.55 | 0.38 | 8.0E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.0E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.5E-08 | 6.0E-05 | 0.0014 | 2.4E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.9E-08 | 3.1E-05 | 1.9E-05 | 3.6E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.1E-07 | 0.0024 | 0.045 | 6.2E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.3E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.7E-07 | 9.8E-07 | 0.0059 | 6.6E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.3E-06 | 5.4E-04 | 0.0066 | 1.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 5.9E-04 | 0.0054 | 0.0083 | 1.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.8E-04 | 0.0082 | 0.0079 | 1.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.079 | 0.41 | 1.1 | 0.032 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 7.0E-05 | 0.026 | 0.55 | 3.6E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 4.1E-04 | 4.1E-04 | - | 7.3E-04 | 7.3E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0061 | 0.0061 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0033 | 0.0033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.0082 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0049 | 0.0049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0082 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0020 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0046 | 0.033 | 0.070 | 0.0017 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-05 | 0.0015 | 1.2E-04 | 1.5E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 1.9E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 2.9E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 4.5E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0014 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0063 | 0.021 | 0.024 | 0.0038 | 0.028 |
| Chromium (hexavalent)[ac] | - | 2.9E-04 | 2.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0100 | 0.0060 | 7.9E-04 | 0.0068 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0014 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0023 | 0.0023 | - | 1.0E-04 | 1.0E-04 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-05 | 0.0037 | 3.0E-04 | 6.5E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 4.5E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 7.9E-05 | 4.5E-04 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 1.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.6E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.7E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.6E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.6E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-05 | 0.0011 | 2.8E-04 | 6.5E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-08 | 1.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 1.4E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-08 | 2.8E-04 | 1.1E-04 | 1.7E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-10 | 0.0091 | 0.0035 | 2.0E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 1.5E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0033 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 1.7E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-07 | 0.014 | 0.31 | 2.4E-06 | 0.31 |
| Chloroform | 0.0055 | 4.6E-07 | 0.0055 | 0.23 | 6.9E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.1E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-06 | 0.0032 | 0.0017 | 1.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.9E-04 | 0.55 | 0.38 | 7.2E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-08 | 6.0E-05 | 0.0014 | 2.1E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 3.2E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-08 | 0.0024 | 0.045 | 5.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.9E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-07 | 9.1E-07 | 0.0059 | 5.9E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-06 | 5.4E-04 | 0.0066 | 1.1E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 4.4E-04 | 0.0053 | 0.0083 | 1.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.1E-04 | 0.0081 | 0.0079 | 1.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.059 | 0.39 | 1.1 | 0.030 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-05 | 0.026 | 0.55 | 3.2E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 4.1E-04 | 4.1E-04 | - | 0.0011 | 0.0011 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0091 | 0.0091 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0033 | 0.0033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.012 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0038 | 0.0038 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0063 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0016 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0046 | 0.033 | 0.070 | 0.0026 | 0.073 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-05 | 0.0015 | 1.2E-04 | 2.2E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 2.8E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 4.3E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 6.8E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0014 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0063 | 0.021 | 0.024 | 0.0057 | 0.030 |
| Chromium (hexavalent)[ac] | - | 2.9E-04 | 2.9E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0100 | 0.0060 | 0.0012 | 0.0072 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0020 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0023 | 0.0023 | - | 1.5E-04 | 1.5E-04 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-05 | 0.0037 | 3.0E-04 | 9.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 6.8E-05 | 4.1E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 8.0E-05 | 4.5E-04 | 3.0E-04 | 3.6E-05 | 3.4E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 2.4E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.6E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 7.0E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.4E-04 | 0.0050 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-05 | 0.0011 | 2.8E-04 | 9.8E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-08 | 1.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 2.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-08 | 2.8E-04 | 1.1E-04 | 2.6E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-10 | 0.0091 | 0.0035 | 2.9E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 2.2E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0033 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 2.5E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-07 | 0.014 | 0.31 | 3.6E-06 | 0.31 |
| Chloroform | 0.0055 | 4.6E-07 | 0.0055 | 0.23 | 1.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.6E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-06 | 0.0032 | 0.0017 | 2.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.9E-04 | 0.55 | 0.38 | 1.1E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-08 | 6.0E-05 | 0.0014 | 3.2E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 4.8E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-08 | 0.0024 | 0.045 | 8.3E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-07 | 9.1E-07 | 0.0059 | 8.8E-04 | 0.0068 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-06 | 5.4E-04 | 0.0066 | 1.7E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 4.4E-04 | 0.0053 | 0.0083 | 1.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.1E-04 | 0.0081 | 0.0079 | 1.7E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.059 | 0.39 | 1.1 | 0.039 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-05 | 0.026 | 0.55 | 4.8E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 6.7E-04 | 6.7E-04 | - | 9.0E-04 | 9.0E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 4.4E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.018 | 0.018 | - | 0.0075 | 0.0075 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0053 | 0.0053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.044 | 0.21 | 0.29 | 0.010 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0081 | 0.0081 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.014 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0034 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0074 | 0.036 | 0.070 | 0.0021 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-05 | 0.0015 | 1.2E-04 | 1.8E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.1E-04 | 0.022 | 0.0060 | 2.3E-05 | 0.0061 |
| Barium | 0.0040 | 6.2E-05 | 0.0040 | 8.2E-04 | 3.5E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0024 | 0.039 | 0.030 | 5.5E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0022 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.010 | 0.025 | 0.024 | 0.0046 | 0.029 |
| Chromium (hexavalent)[ac] | - | 4.7E-04 | 4.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 3.3E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0042 | 0.012 | 0.0060 | 9.6E-04 | 0.0070 |
| Lead | 0.0081 | 0.0049 | 0.013 | 0.0100 | 0.0017 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0037 | 0.0037 | - | 1.2E-04 | 1.2E-04 |
| Nickel[c] | 0.0018 | 0.0021 | 0.0039 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-05 | 0.0037 | 3.0E-04 | 8.0E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0049 | 0.013 | 3.4E-04 | 5.6E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0057 | 0.013 | - | - | - |
| Tin | 3.7E-04 | 1.3E-04 | 5.0E-04 | 3.0E-04 | 2.9E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 3.4E-04 | 0.0079 | 0.0015 | 1.9E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 5.8E-04 | 0.0026 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-06 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.7E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 4.6E-07 | 4.6E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.1E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 2.0E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.1E-04 | 0.0011 | 2.8E-04 | 8.0E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-08 | 2.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-05 | 6.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-08 | 2.0E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-06 | 4.3E-04 | 4.4E-05 | 1.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-08 | 2.8E-04 | 1.1E-04 | 2.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.3E-10 | 0.0091 | 0.0035 | 2.4E-11 | 0.0035 |
| Benzene | 0.17 | 2.7E-05 | 0.17 | 0.41 | 1.8E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0018 | 0.0040 | - | - | - |
| Bromoform | 0.0014 | 2.0E-04 | 0.0016 | 5.4E-04 | 2.1E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 4.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.8E-07 | 0.014 | 0.31 | 3.0E-06 | 0.31 |
| Chloroform | 0.0055 | 7.5E-07 | 0.0055 | 0.23 | 8.5E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-06 | 2.2E-04 | 0.0058 | 1.3E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.5E-05 | 0.0032 | 0.0017 | 2.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 4.6E-04 | 0.55 | 0.38 | 8.7E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.1E-08 | 6.0E-05 | 0.0014 | 2.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-08 | 3.1E-05 | 1.9E-05 | 3.9E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-07 | 0.0024 | 0.045 | 6.8E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-07 | 1.0E-06 | 0.0059 | 7.2E-04 | 0.0066 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-06 | 5.4E-04 | 0.0066 | 1.4E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 7.1E-04 | 0.0055 | 0.0083 | 1.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 3.3E-04 | 0.0082 | 0.0079 | 1.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.095 | 0.42 | 1.1 | 0.040 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-05 | 0.026 | 0.55 | 3.9E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0012 | 0.0012 | - | 0.0026 | 0.0026 |
| Carbon Monoxide (CO)[c] | 0.069 | 7.9E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.031 | 0.031 | - | 0.022 | 0.022 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0094 | 0.0094 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.079 | 0.24 | 0.29 | 0.029 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.011 | 0.011 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.019 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0047 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.013 | 0.042 | 0.070 | 0.0061 | 0.076 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.4E-04 | 0.0016 | 1.2E-04 | 5.3E-06 | 1.3E-04 |
| Arsenic | 0.022 | 5.5E-04 | 0.023 | 0.0060 | 6.7E-05 | 0.0061 |
| Barium | 0.0040 | 1.1E-04 | 0.0041 | 8.2E-04 | 1.0E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0044 | 0.041 | 0.030 | 0.0016 | 0.032 |
| Boron[c] | 0.019 | 0.0040 | 0.023 | - | - | - |
| Cadmium | 0.015 | 0.018 | 0.033 | 0.024 | 0.013 | 0.038 |
| Chromium (hexavalent)[ac] | - | 8.4E-04 | 8.4E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 5.9E-04 | 0.0073 | - | - | - |
| Cobalt | 0.0074 | 0.0076 | 0.015 | 0.0060 | 0.0028 | 0.0088 |
| Lead | 0.0081 | 0.0087 | 0.017 | 0.0100 | 0.0048 | 0.015 |
| Mercury - Inorganic[a] | - | 0.0065 | 0.0065 | - | 3.6E-04 | 3.6E-04 |
| Nickel[c] | 0.0018 | 0.0038 | 0.0056 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.3E-05 | 0.0037 | 3.0E-04 | 2.3E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0088 | 0.017 | 3.4E-04 | 1.6E-04 | 5.0E-04 |
| Thallium[c] | 0.0073 | 0.010 | 0.018 | - | - | - |
| Tin | 3.7E-04 | 2.3E-04 | 6.0E-04 | 3.0E-04 | 8.4E-05 | 3.9E-04 |
| Vanadium | 0.0075 | 6.1E-04 | 0.0082 | 0.0015 | 5.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0010 | 0.0031 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.9E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.8E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.1E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.9E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.0E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.9E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.2E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.0E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.3E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.2E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 8.2E-07 | 8.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.9E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.0E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 7.9E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.0E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.8E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.9E-04 | 0.0012 | 2.8E-04 | 2.3E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.8E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.1E-08 | 5.1E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.4E-05 | 6.6E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.5E-08 | 3.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.1E-05 | 4.4E-04 | 4.4E-05 | 5.0E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.4E-08 | 2.8E-04 | 1.1E-04 | 6.2E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.0E-10 | 0.0091 | 0.0035 | 7.0E-11 | 0.0035 |
| Benzene | 0.17 | 4.8E-05 | 0.17 | 0.41 | 5.1E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0033 | 0.0054 | - | - | - |
| Bromoform | 0.0014 | 3.6E-04 | 0.0018 | 5.4E-04 | 6.0E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 7.9E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.7E-07 | 0.014 | 0.31 | 8.6E-06 | 0.31 |
| Chloroform | 0.0055 | 1.3E-06 | 0.0055 | 0.23 | 2.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 7.0E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.3E-06 | 2.2E-04 | 0.0058 | 3.8E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.0E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.7E-05 | 0.0032 | 0.0017 | 6.5E-06 | 0.0017 |
| Formaldehyde | 0.55 | 8.3E-04 | 0.55 | 0.38 | 2.5E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 4.3E-07 | 7.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.4E-08 | 6.0E-05 | 0.0014 | 7.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.2E-08 | 3.1E-05 | 1.9E-05 | 1.1E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.4E-07 | 0.0024 | 0.045 | 2.0E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 5.7E-07 | 1.3E-06 | 0.0059 | 0.0021 | 0.0080 |
| Xylenes, m-, p- and o- | 5.3E-04 | 7.2E-06 | 5.4E-04 | 0.0066 | 4.0E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0013 | 0.0061 | 0.0083 | 4.3E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 6.0E-04 | 0.0085 | 0.0079 | 4.0E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.17 | 0.50 | 1.1 | 0.096 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.5E-04 | 0.026 | 0.55 | 1.1E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 4.1E-04 | 4.1E-04 | - | 7.1E-04 | 7.1E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.7E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.011 | 0.011 | - | 0.0059 | 0.0059 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0032 | 0.0032 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.027 | 0.19 | 0.29 | 0.0079 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0059 | 0.0059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0099 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0025 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0045 | 0.033 | 0.070 | 0.0017 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.9E-05 | 0.0015 | 1.2E-04 | 1.4E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.9E-04 | 0.022 | 0.0060 | 1.8E-05 | 0.0061 |
| Barium | 0.0040 | 3.8E-05 | 0.0040 | 8.2E-04 | 2.8E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0015 | 0.038 | 0.030 | 4.4E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0014 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0062 | 0.021 | 0.024 | 0.0037 | 0.028 |
| Chromium (hexavalent)[ac] | - | 2.8E-04 | 2.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.0E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0026 | 0.0099 | 0.0060 | 7.6E-04 | 0.0068 |
| Lead | 0.0081 | 0.0030 | 0.011 | 0.0100 | 0.0013 | 0.011 |
| Mercury - Inorganic[a] | - | 0.0022 | 0.0022 | - | 9.8E-05 | 9.8E-05 |
| Nickel[c] | 0.0018 | 0.0013 | 0.0031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.1E-05 | 0.0037 | 3.0E-04 | 6.3E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0030 | 0.011 | 3.4E-04 | 4.4E-05 | 3.9E-04 |
| Thallium[c] | 0.0073 | 0.0035 | 0.011 | - | - | - |
| Tin | 3.7E-04 | 7.8E-05 | 4.5E-04 | 3.0E-04 | 2.3E-05 | 3.2E-04 |
| Vanadium | 0.0075 | 2.1E-04 | 0.0078 | 0.0015 | 1.5E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 3.5E-04 | 0.0024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.2E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.8E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.9E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.3E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.5E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.7E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.4E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 8.9E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.6E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.4E-05 | 0.0011 | 2.8E-04 | 6.3E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.0E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-08 | 1.7E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.8E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-08 | 1.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-06 | 4.3E-04 | 4.4E-05 | 1.4E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-08 | 2.8E-04 | 1.1E-04 | 1.7E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-10 | 0.0091 | 0.0035 | 1.9E-11 | 0.0035 |
| Benzene | 0.17 | 1.6E-05 | 0.17 | 0.41 | 1.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0011 | 0.0032 | - | - | - |
| Bromoform | 0.0014 | 1.2E-04 | 0.0016 | 5.4E-04 | 1.7E-05 | 5.5E-04 |
| Bromomethane | 0.0018 | 2.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.9E-07 | 0.014 | 0.31 | 2.4E-06 | 0.31 |
| Chloroform | 0.0055 | 4.5E-07 | 0.0055 | 0.23 | 6.7E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-06 | 2.2E-04 | 0.0058 | 1.0E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.0E-06 | 0.0032 | 0.0017 | 1.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.8E-04 | 0.55 | 0.38 | 6.9E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-08 | 6.0E-05 | 0.0014 | 2.1E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-08 | 3.1E-05 | 1.9E-05 | 3.1E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.1E-08 | 0.0024 | 0.045 | 5.4E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-07 | 9.1E-07 | 0.0059 | 5.7E-04 | 0.0065 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-06 | 5.4E-04 | 0.0066 | 1.1E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 4.3E-04 | 0.0053 | 0.0083 | 1.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.0E-04 | 0.0081 | 0.0079 | 1.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.058 | 0.39 | 1.1 | 0.031 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.1E-05 | 0.026 | 0.55 | 3.1E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 5.2E-04 | 5.2E-04 | - | 0.0017 | 0.0017 |
| Carbon Monoxide (CO)[c] | 0.069 | 3.4E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.014 | 0.014 | - | 0.014 | 0.014 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0041 | 0.0041 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.034 | 0.20 | 0.29 | 0.019 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0064 | 0.0064 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.011 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0027 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0058 | 0.034 | 0.070 | 0.0039 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.2E-05 | 0.0015 | 1.2E-04 | 3.4E-06 | 1.2E-04 |
| Arsenic | 0.022 | 2.4E-04 | 0.022 | 0.0060 | 4.3E-05 | 0.0061 |
| Barium | 0.0040 | 4.8E-05 | 0.0040 | 8.2E-04 | 6.5E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0019 | 0.039 | 0.030 | 0.0010 | 0.031 |
| Boron[c] | 0.019 | 0.0017 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0080 | 0.023 | 0.024 | 0.0087 | 0.033 |
| Chromium (hexavalent)[ac] | - | 3.6E-04 | 3.6E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 2.6E-04 | 0.0070 | - | - | - |
| Cobalt | 0.0074 | 0.0033 | 0.011 | 0.0060 | 0.0018 | 0.0078 |
| Lead | 0.0081 | 0.0038 | 0.012 | 0.0100 | 0.0031 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0028 | 0.0028 | - | 2.3E-04 | 2.3E-04 |
| Nickel[c] | 0.0018 | 0.0017 | 0.0035 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.7E-05 | 0.0037 | 3.0E-04 | 1.5E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0038 | 0.012 | 3.4E-04 | 1.0E-04 | 4.5E-04 |
| Thallium[c] | 0.0073 | 0.0044 | 0.012 | - | - | - |
| Tin | 3.7E-04 | 1.0E-04 | 4.7E-04 | 3.0E-04 | 5.4E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 2.7E-04 | 0.0078 | 0.0015 | 3.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 4.5E-04 | 0.0025 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.1E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.7E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.3E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 8.7E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.3E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.4E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.1E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.0E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 8.6E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.5E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 3.6E-07 | 3.6E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.4E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.2E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 3.7E-04 | 0.0051 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.2E-05 | 0.0011 | 2.8E-04 | 1.5E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 7.6E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.2E-08 | 2.2E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.3E-05 | 6.3E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.5E-08 | 1.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.7E-06 | 4.3E-04 | 4.4E-05 | 3.2E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-08 | 2.8E-04 | 1.1E-04 | 4.0E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.8E-10 | 0.0091 | 0.0035 | 4.5E-11 | 0.0035 |
| Benzene | 0.17 | 2.1E-05 | 0.17 | 0.41 | 3.3E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0014 | 0.0036 | - | - | - |
| Bromoform | 0.0014 | 1.6E-04 | 0.0016 | 5.4E-04 | 3.9E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 3.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.8E-07 | 0.014 | 0.31 | 5.6E-06 | 0.31 |
| Chloroform | 0.0055 | 5.8E-07 | 0.0055 | 0.23 | 1.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.0E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.1E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.4E-06 | 2.2E-04 | 0.0058 | 2.5E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.2E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-05 | 0.0032 | 0.0017 | 4.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 3.6E-04 | 0.55 | 0.38 | 1.6E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-07 | 6.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.2E-08 | 6.0E-05 | 0.0014 | 4.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.8E-08 | 3.1E-05 | 1.9E-05 | 7.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.0E-07 | 0.0024 | 0.045 | 1.3E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 8.9E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.5E-07 | 9.6E-07 | 0.0059 | 0.0014 | 0.0072 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.1E-06 | 5.4E-04 | 0.0066 | 2.6E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 5.5E-04 | 0.0054 | 0.0083 | 2.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 2.6E-04 | 0.0081 | 0.0079 | 2.6E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.074 | 0.40 | 1.1 | 0.061 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.6E-05 | 0.026 | 0.55 | 7.3E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 3.2E-04 | 3.2E-04 | - | 8.7E-04 | 8.7E-04 |
| Carbon Monoxide (CO)[c] | 0.069 | 2.1E-04 | 0.069 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0085 | 0.0085 | - | 0.0072 | 0.0072 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0026 | 0.0026 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.021 | 0.18 | 0.29 | 0.0097 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0031 | 0.0031 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.0052 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0013 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0036 | 0.032 | 0.070 | 0.0020 | 0.072 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.9E-05 | 0.0015 | 1.2E-04 | 1.8E-06 | 1.2E-04 |
| Arsenic | 0.022 | 1.5E-04 | 0.022 | 0.0060 | 2.3E-05 | 0.0061 |
| Barium | 0.0040 | 3.0E-05 | 0.0040 | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0012 | 0.038 | 0.030 | 5.4E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0011 | 0.020 | - | - | - |
| Cadmium | 0.015 | 0.0050 | 0.020 | 0.024 | 0.0045 | 0.029 |
| Chromium (hexavalent)[ac] | - | 2.3E-04 | 2.3E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 1.6E-04 | 0.0069 | - | - | - |
| Cobalt | 0.0074 | 0.0021 | 0.0094 | 0.0060 | 9.3E-04 | 0.0070 |
| Lead | 0.0081 | 0.0024 | 0.010 | 0.0100 | 0.0016 | 0.012 |
| Mercury - Inorganic[a] | - | 0.0018 | 0.0018 | - | 1.2E-04 | 1.2E-04 |
| Nickel[c] | 0.0018 | 0.0010 | 0.0029 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.7E-05 | 0.0037 | 3.0E-04 | 7.7E-07 | 3.0E-04 |
| Silver | 0.0083 | 0.0024 | 0.011 | 3.4E-04 | 5.4E-05 | 4.0E-04 |
| Thallium[c] | 0.0073 | 0.0028 | 0.010 | - | - | - |
| Tin | 3.7E-04 | 6.2E-05 | 4.3E-04 | 3.0E-04 | 2.8E-05 | 3.3E-04 |
| Vanadium | 0.0075 | 1.6E-04 | 0.0077 | 0.0015 | 1.9E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 2.8E-04 | 0.0023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.3E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.0E-06 | 7.5E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.8E-07 | 7.9E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.1E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.4E-07 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.4E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.9E-06 | 6.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.9E-06 | 3.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.5E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.3E-07 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.7E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.9E-06 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 2.2E-07 | 2.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.0E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.1E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.1E-06 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 1.9E-04 | 0.0049 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.1E-05 | 0.0011 | 2.8E-04 | 7.7E-06 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.8E-09 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.4E-08 | 1.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.5E-05 | 6.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 9.6E-09 | 9.6E-09 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.9E-06 | 4.3E-04 | 4.4E-05 | 1.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.1E-09 | 2.8E-04 | 1.1E-04 | 2.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.1E-10 | 0.0091 | 0.0035 | 2.3E-11 | 0.0035 |
| Benzene | 0.17 | 1.3E-05 | 0.17 | 0.41 | 1.7E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 8.9E-04 | 0.0030 | - | - | - |
| Bromoform | 0.0014 | 9.8E-05 | 0.0015 | 5.4E-04 | 2.0E-05 | 5.6E-04 |
| Bromomethane | 0.0018 | 2.1E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.3E-07 | 0.014 | 0.31 | 2.9E-06 | 0.31 |
| Chloroform | 0.0055 | 3.6E-07 | 0.0055 | 0.23 | 8.2E-06 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.9E-07 | 2.2E-04 | 0.0058 | 1.3E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.2E-06 | 0.0032 | 0.0017 | 2.2E-06 | 0.0017 |
| Formaldehyde | 0.55 | 2.2E-04 | 0.55 | 0.38 | 8.5E-05 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-07 | 6.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.0E-08 | 6.0E-05 | 0.0014 | 2.5E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.6E-08 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.1E-08 | 3.1E-05 | 1.9E-05 | 3.8E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.5E-08 | 0.0024 | 0.045 | 6.6E-07 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.6E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.5E-07 | 8.7E-07 | 0.0059 | 7.0E-04 | 0.0066 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.9E-06 | 5.4E-04 | 0.0066 | 1.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 3.4E-04 | 0.0052 | 0.0083 | 1.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 1.6E-04 | 0.0080 | 0.0079 | 1.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.046 | 0.37 | 1.1 | 0.031 | 1.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.1E-05 | 0.026 | 0.55 | 3.8E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 9.0E-04 | 9.0E-04 | - | 0.0015 | 0.0015 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.9E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.024 | 0.024 | - | 0.012 | 0.012 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0071 | 0.0071 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.060 | 0.22 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0085 | 0.0085 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.014 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0035 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.010 | 0.038 | 0.070 | 0.0034 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.1E-04 | 0.0016 | 1.2E-04 | 3.0E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.2E-04 | 0.022 | 0.0060 | 3.8E-05 | 0.0061 |
| Barium | 0.0040 | 8.4E-05 | 0.0041 | 8.2E-04 | 5.7E-06 | 8.2E-04 |
| Beryllium | 0.037 | 0.0033 | 0.040 | 0.030 | 9.0E-04 | 0.031 |
| Boron[c] | 0.019 | 0.0030 | 0.022 | - | - | - |
| Cadmium | 0.015 | 0.014 | 0.029 | 0.024 | 0.0076 | 0.032 |
| Chromium (hexavalent)[ac] | - | 6.3E-04 | 6.3E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.4E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0057 | 0.013 | 0.0060 | 0.0016 | 0.0076 |
| Lead | 0.0081 | 0.0066 | 0.015 | 0.0100 | 0.0027 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0049 | 0.0049 | - | 2.0E-04 | 2.0E-04 |
| Nickel[c] | 0.0018 | 0.0029 | 0.0047 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.7E-05 | 0.0037 | 3.0E-04 | 1.3E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0066 | 0.015 | 3.4E-04 | 9.1E-05 | 4.3E-04 |
| Thallium[c] | 0.0073 | 0.0077 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.7E-04 | 5.4E-04 | 3.0E-04 | 4.8E-05 | 3.5E-04 |
| Vanadium | 0.0075 | 4.6E-04 | 0.0080 | 0.0015 | 3.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.9E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.7E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.9E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.6E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.9E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.0E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.5E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.3E-05 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.5E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.2E-07 | 6.2E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.1E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.0E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.0E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 3.2E-04 | 0.0051 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.4E-04 | 0.0012 | 2.8E-04 | 1.3E-05 | 2.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.8E-08 | 3.8E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.1E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.7E-08 | 2.7E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.2E-06 | 4.3E-04 | 4.4E-05 | 2.8E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.5E-08 | 2.8E-04 | 1.1E-04 | 3.5E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.0E-10 | 0.0091 | 0.0035 | 3.9E-11 | 0.0035 |
| Benzene | 0.17 | 3.6E-05 | 0.17 | 0.41 | 2.9E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0025 | 0.0046 | - | - | - |
| Bromoform | 0.0014 | 2.7E-04 | 0.0017 | 5.4E-04 | 3.4E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 5.9E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.5E-07 | 0.014 | 0.31 | 4.8E-06 | 0.31 |
| Chloroform | 0.0055 | 1.0E-06 | 0.0055 | 0.23 | 1.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.4E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.3E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.5E-06 | 2.2E-04 | 0.0058 | 2.2E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.8E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.0E-05 | 0.0032 | 0.0017 | 3.7E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.3E-04 | 0.55 | 0.38 | 1.4E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.2E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.6E-08 | 6.0E-05 | 0.0014 | 4.3E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.7E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.1E-08 | 3.1E-05 | 1.9E-05 | 6.4E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.8E-07 | 0.0024 | 0.045 | 1.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 7.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.3E-07 | 1.1E-06 | 0.0059 | 0.0012 | 0.0071 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.4E-06 | 5.4E-04 | 0.0066 | 2.2E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 9.6E-04 | 0.0058 | 0.0083 | 2.4E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.5E-04 | 0.0083 | 0.0079 | 2.2E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.13 | 0.46 | 1.1 | 0.058 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 6.4E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 9.5E-04 | 9.5E-04 | - | 0.0019 | 0.0019 |
| Carbon Monoxide (CO)[c] | 0.069 | 6.3E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.025 | 0.025 | - | 0.016 | 0.016 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0075 | 0.0075 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.063 | 0.22 | 0.29 | 0.022 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.013 | 0.013 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.022 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0055 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.011 | 0.039 | 0.070 | 0.0046 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.1E-04 | 0.0016 | 1.2E-04 | 3.9E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.4E-04 | 0.022 | 0.0060 | 5.0E-05 | 0.0061 |
| Barium | 0.0040 | 8.8E-05 | 0.0041 | 8.2E-04 | 7.6E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0035 | 0.040 | 0.030 | 0.0012 | 0.031 |
| Boron[c] | 0.019 | 0.0032 | 0.022 | - | - | - |
| Cadmium | 0.015 | 0.015 | 0.029 | 0.024 | 0.010 | 0.034 |
| Chromium (hexavalent)[ac] | - | 6.7E-04 | 6.7E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.7E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0060 | 0.013 | 0.0060 | 0.0021 | 0.0081 |
| Lead | 0.0081 | 0.0069 | 0.015 | 0.0100 | 0.0036 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0052 | 0.0052 | - | 2.7E-04 | 2.7E-04 |
| Nickel[c] | 0.0018 | 0.0030 | 0.0048 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.0E-05 | 0.0037 | 3.0E-04 | 1.7E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0070 | 0.015 | 3.4E-04 | 1.2E-04 | 4.6E-04 |
| Thallium[c] | 0.0073 | 0.0081 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.8E-04 | 5.5E-04 | 3.0E-04 | 6.3E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 4.8E-04 | 0.0080 | 0.0015 | 4.2E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 8.3E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.9E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.0E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.3E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.2E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.9E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.7E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.6E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.0E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.7E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.5E-07 | 6.5E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.1E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.7E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.3E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.9E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.3E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.5E-04 | 0.0012 | 2.8E-04 | 1.7E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.0E-08 | 4.0E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.3E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.8E-08 | 2.8E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.6E-06 | 4.4E-04 | 4.4E-05 | 3.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-08 | 2.8E-04 | 1.1E-04 | 4.6E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.2E-10 | 0.0091 | 0.0035 | 5.2E-11 | 0.0035 |
| Benzene | 0.17 | 3.8E-05 | 0.17 | 0.41 | 3.8E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0026 | 0.0047 | - | - | - |
| Bromoform | 0.0014 | 2.9E-04 | 0.0017 | 5.4E-04 | 4.5E-05 | 5.8E-04 |
| Bromomethane | 0.0018 | 6.3E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.9E-07 | 0.014 | 0.31 | 6.4E-06 | 0.31 |
| Chloroform | 0.0055 | 1.1E-06 | 0.0055 | 0.23 | 1.8E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.6E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.6E-06 | 2.2E-04 | 0.0058 | 2.9E-05 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.7E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.1E-05 | 0.0032 | 0.0017 | 4.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.6E-04 | 0.55 | 0.38 | 1.9E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.4E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.9E-08 | 6.0E-05 | 0.0014 | 5.6E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.8E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.3E-08 | 3.1E-05 | 1.9E-05 | 8.5E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-07 | 0.0024 | 0.045 | 1.5E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.0E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.5E-07 | 1.2E-06 | 0.0059 | 0.0016 | 0.0074 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.7E-06 | 5.4E-04 | 0.0066 | 3.0E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0010 | 0.0058 | 0.0083 | 3.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.7E-04 | 0.0083 | 0.0079 | 3.0E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.14 | 0.46 | 1.1 | 0.080 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.2E-04 | 0.026 | 0.55 | 8.5E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.8E-05 | 7.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.5E-04 | 6.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 6.9E-05 | 0.043 |
| Boron | 0.0031 | 4.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.5E-08 | 4.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.6E-09 | 5.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.8E-04 | 2.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.6E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 1.9E-05 | 0.0031 |
| Cadmium | 0.12 | 8.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.1E-05 | 3.1E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.4E-04 | 0.030 |
| Tin | 0.0015 | 5.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.3E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.9E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.5E-10 | 8.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-08 | 3.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-09 | 2.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.0E-11 | 0.12 |
| Benzene | 0.13 | 6.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.4E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.9E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.7E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.9E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.3E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.1E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0035 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.9E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.8E-04 | 2.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.6E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 1.9E-05 | 0.0031 |
| Cadmium | 0.12 | 8.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.1E-05 | 3.1E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.4E-04 | 0.030 |
| Tin | 0.0015 | 5.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.3E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.8E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.6E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.5E-10 | 8.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-08 | 3.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-09 | 2.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.0E-11 | 0.12 |
| Benzene | 0.13 | 6.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.3E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.9E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.6E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.9E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.3E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.1E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0035 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.9E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.9E-05 | 7.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.6E-04 | 6.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 6.9E-05 | 0.043 |
| Boron | 0.0031 | 4.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.6E-08 | 4.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.7E-09 | 5.7E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.7E-05 | 6.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.6E-04 | 5.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0015 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.7E-05 | 0.015 |
| Arsenic | 0.12 | 3.5E-05 | 0.12 |
| Barium | 0.0049 | 2.6E-06 | 0.0050 |
| Beryllium | 0.043 | 5.9E-05 | 0.043 |
| Boron | 0.0031 | 3.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0017 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.0E-06 | 4.0E-06 |
| Cobalt | 0.0060 | 7.2E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.2E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.2E-05 | 6.2E-05 |
| Nickel | 0.045 | 0.0022 | 0.047 |
| Phosphorus | 7.3E-10 | 8.9E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.0E-06 | 0.015 |
| Silver | 0.034 | 4.2E-04 | 0.035 |
| Thallium | 0.029 | 4.8E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.9E-08 | 3.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.4E-09 | 2.4E-09 |
| Hexachlorobenzene | 0.0021 | 2.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.7E-09 | 1.7E-09 |
| Pentachlorophenol | 8.2E-04 | 5.1E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.8E-08 | 6.8E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.8E-09 | 4.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.1E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.0E-10 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.6E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.5E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0070 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.2E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.9E-05 | 7.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.6E-04 | 6.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.0E-05 | 0.015 |
| Arsenic | 0.12 | 4.1E-05 | 0.12 |
| Barium | 0.0049 | 3.1E-06 | 0.0050 |
| Beryllium | 0.043 | 7.0E-05 | 0.043 |
| Boron | 0.0031 | 4.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.7E-06 | 4.7E-06 |
| Cobalt | 0.0060 | 8.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.3E-05 | 7.3E-05 |
| Nickel | 0.045 | 0.0026 | 0.047 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.5E-06 | 0.015 |
| Silver | 0.034 | 4.9E-04 | 0.035 |
| Thallium | 0.029 | 5.7E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.5E-07 | 0.0023 |
| Fluorene[a] | - | 4.6E-08 | 4.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.7E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.8E-09 | 2.8E-09 |
| Hexachlorobenzene | 0.0021 | 3.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.0E-08 | 8.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.7E-09 | 5.7E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.4E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0082 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.9E-05 | 2.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.4E-04 | 2.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0011 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 6.4E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 7.3E-06 | 0.015 |
| Arsenic | 0.12 | 1.5E-05 | 0.12 |
| Barium | 0.0049 | 1.1E-06 | 0.0049 |
| Beryllium | 0.043 | 2.5E-05 | 0.043 |
| Boron | 0.0031 | 1.6E-05 | 0.0031 |
| Cadmium | 0.12 | 7.5E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.7E-06 | 1.7E-06 |
| Cobalt | 0.0060 | 3.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 5.3E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.7E-05 | 2.7E-05 |
| Nickel | 0.045 | 9.3E-04 | 0.046 |
| Phosphorus | 7.3E-10 | 3.8E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.3E-06 | 0.015 |
| Silver | 0.034 | 1.8E-04 | 0.035 |
| Thallium | 0.029 | 2.1E-04 | 0.029 |
| Tin | 0.0015 | 4.7E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 6.2E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.3E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.0E-07 | 0.0023 |
| Fluorene[a] | - | 1.7E-08 | 1.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 9.7E-08 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 7.5E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.1E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.0E-09 | 1.0E-09 |
| Hexachlorobenzene | 0.0021 | 1.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 7.2E-10 | 7.2E-10 |
| Pentachlorophenol | 8.2E-04 | 2.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.9E-08 | 2.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.1E-09 | 2.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.9E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 4.3E-11 | 0.12 |
| Benzene | 0.13 | 5.5E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 7.1E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 6.7E-05 | 0.0054 |
| Bromoform | 0.0046 | 7.4E-06 | 0.0046 |
| Bromomethane | 0.020 | 3.8E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.7E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 9.3E-09 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.5E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.8E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 8.7E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 8.4E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.4E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.2E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.2E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0030 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 8.5E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 5.3E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.2E-05 | 3.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.6E-04 | 2.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0012 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.3E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.0E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 8.0E-06 | 0.015 |
| Arsenic | 0.12 | 1.6E-05 | 0.12 |
| Barium | 0.0049 | 1.2E-06 | 0.0049 |
| Beryllium | 0.043 | 2.8E-05 | 0.043 |
| Boron | 0.0031 | 1.8E-05 | 0.0031 |
| Cadmium | 0.12 | 8.2E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.9E-06 | 1.9E-06 |
| Cobalt | 0.0060 | 3.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 5.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.9E-05 | 2.9E-05 |
| Nickel | 0.045 | 0.0010 | 0.046 |
| Phosphorus | 7.3E-10 | 4.2E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.4E-06 | 0.015 |
| Silver | 0.034 | 2.0E-04 | 0.035 |
| Thallium | 0.029 | 2.3E-04 | 0.029 |
| Tin | 0.0015 | 5.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 6.8E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.8E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.2E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.2E-07 | 0.0023 |
| Fluorene[a] | - | 1.8E-08 | 1.8E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.2E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.4E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.1E-09 | 1.1E-09 |
| Hexachlorobenzene | 0.0021 | 1.2E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 7.9E-10 | 7.9E-10 |
| Pentachlorophenol | 8.2E-04 | 2.4E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.2E-08 | 3.2E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.3E-09 | 2.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.3E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 4.7E-11 | 0.12 |
| Benzene | 0.13 | 6.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 7.8E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 7.4E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.1E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.2E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.0E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.6E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 9.6E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.2E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.9E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.2E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.7E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0033 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 9.2E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 5.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.0E-05 | 4.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.4E-04 | 3.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0015 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 9.0E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.0E-05 | 0.015 |
| Arsenic | 0.12 | 2.1E-05 | 0.12 |
| Barium | 0.0049 | 1.6E-06 | 0.0050 |
| Beryllium | 0.043 | 3.5E-05 | 0.043 |
| Boron | 0.0031 | 2.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0010 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.4E-06 | 2.4E-06 |
| Cobalt | 0.0060 | 4.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.4E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 3.7E-05 | 3.7E-05 |
| Nickel | 0.045 | 0.0013 | 0.046 |
| Phosphorus | 7.3E-10 | 5.4E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.8E-06 | 0.015 |
| Silver | 0.034 | 2.5E-04 | 0.035 |
| Thallium | 0.029 | 2.9E-04 | 0.030 |
| Tin | 0.0015 | 6.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 8.7E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.1E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.8E-07 | 0.0023 |
| Fluorene[a] | - | 2.3E-08 | 2.3E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.3E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.4E-09 | 1.4E-09 |
| Hexachlorobenzene | 0.0021 | 1.5E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.0E-09 | 1.0E-09 |
| Pentachlorophenol | 8.2E-04 | 3.1E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.1E-08 | 4.1E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.9E-09 | 2.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 6.0E-11 | 0.12 |
| Benzene | 0.13 | 7.7E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 9.9E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 9.4E-05 | 0.0054 |
| Bromoform | 0.0046 | 1.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.4E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 7.7E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.9E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 7.5E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.6E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.3E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0042 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.4E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.6E-05 | 2.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.2E-04 | 2.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 9.7E-04 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 5.8E-04 | 0.20 |
| **Metals** | | | |
| Antimony | 0.015 | 6.6E-06 | 0.015 |
| Arsenic | 0.12 | 1.3E-05 | 0.12 |
| Barium | 0.0049 | 1.0E-06 | 0.0049 |
| Beryllium | 0.043 | 2.3E-05 | 0.043 |
| Boron | 0.0031 | 1.5E-05 | 0.0031 |
| Cadmium | 0.12 | 6.7E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.5E-06 | 1.5E-06 |
| Cobalt | 0.0060 | 2.8E-05 | 0.0060 |
| Lead[c] | 0.0066 | 4.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 2.4E-05 | 2.4E-05 |
| Nickel | 0.045 | 8.4E-04 | 0.046 |
| Phosphorus | 7.3E-10 | 3.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.2E-06 | 0.015 |
| Silver | 0.034 | 1.6E-04 | 0.034 |
| Thallium | 0.029 | 1.9E-04 | 0.029 |
| Tin | 0.0015 | 4.2E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 5.6E-07 | 7.7E-04 |
| Zinc | 0.0051 | 1.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.9E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.8E-07 | 0.0023 |
| Fluorene[a] | - | 1.5E-08 | 1.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.7E-08 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.8E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.8E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 9.4E-10 | 9.4E-10 |
| Hexachlorobenzene | 0.0021 | 9.9E-07 | 0.0021 |
| Pentachlorobenzene[a] | - | 6.5E-10 | 6.5E-10 |
| Pentachlorophenol | 8.2E-04 | 2.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.6E-08 | 2.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.9E-09 | 1.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.9E-11 | 0.12 |
| Benzene | 0.13 | 5.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 6.4E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 6.1E-05 | 0.0054 |
| Bromoform | 0.0046 | 6.7E-06 | 0.0046 |
| Bromomethane | 0.020 | 3.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 8.4E-09 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.4E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.1E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.5E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.9E-09 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.6E-09 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.0E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 4.7E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0027 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.6E-05 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.6E-05 | 7.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.3E-04 | 6.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0028 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0017 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.9E-05 | 0.015 |
| Arsenic | 0.12 | 3.9E-05 | 0.12 |
| Barium | 0.0049 | 3.0E-06 | 0.0050 |
| Beryllium | 0.043 | 6.7E-05 | 0.043 |
| Boron | 0.0031 | 4.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.5E-06 | 4.5E-06 |
| Cobalt | 0.0060 | 8.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.4E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.0E-05 | 7.0E-05 |
| Nickel | 0.045 | 0.0024 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.4E-06 | 0.015 |
| Silver | 0.034 | 4.7E-04 | 0.035 |
| Thallium | 0.029 | 5.5E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.3E-07 | 0.0023 |
| Fluorene[a] | - | 4.4E-08 | 4.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.7E-09 | 2.7E-09 |
| Hexachlorobenzene | 0.0021 | 2.9E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.9E-09 | 1.9E-09 |
| Pentachlorophenol | 8.2E-04 | 5.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.7E-08 | 7.7E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.4E-09 | 5.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.9E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.8E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.1E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.4E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.3E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.0E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0079 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.4E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.4E-05 | 3.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 2.9E-04 | 2.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 7.7E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 8.7E-06 | 0.015 |
| Arsenic | 0.12 | 1.8E-05 | 0.12 |
| Barium | 0.0049 | 1.3E-06 | 0.0049 |
| Beryllium | 0.043 | 3.0E-05 | 0.043 |
| Boron | 0.0031 | 2.0E-05 | 0.0031 |
| Cadmium | 0.12 | 8.9E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.0E-06 | 2.0E-06 |
| Cobalt | 0.0060 | 3.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.4E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.2E-05 | 3.2E-05 |
| Nickel | 0.045 | 0.0011 | 0.046 |
| Phosphorus | 7.3E-10 | 4.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.5E-06 | 0.015 |
| Silver | 0.034 | 2.1E-04 | 0.035 |
| Thallium | 0.029 | 2.5E-04 | 0.030 |
| Tin | 0.0015 | 5.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.4E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-07 | 0.0023 |
| Fluorene[a] | - | 2.0E-08 | 2.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-09 | 1.2E-09 |
| Hexachlorobenzene | 0.0021 | 1.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 8.6E-10 | 8.6E-10 |
| Pentachlorophenol | 8.2E-04 | 2.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-08 | 3.5E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-09 | 2.5E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.1E-11 | 0.12 |
| Benzene | 0.13 | 6.6E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 8.5E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 8.0E-05 | 0.0054 |
| Bromoform | 0.0046 | 8.8E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 2.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.4E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.4E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.2E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0036 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.4E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.3E-05 | 5.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.4E-04 | 4.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0020 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0012 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.7E-05 | 0.12 |
| Barium | 0.0049 | 2.1E-06 | 0.0050 |
| Beryllium | 0.043 | 4.6E-05 | 0.043 |
| Boron | 0.0031 | 3.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0014 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.1E-06 | 3.1E-06 |
| Cobalt | 0.0060 | 5.6E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.7E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.9E-05 | 4.9E-05 |
| Nickel | 0.045 | 0.0017 | 0.047 |
| Phosphorus | 7.3E-10 | 7.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.3E-06 | 0.015 |
| Silver | 0.034 | 3.3E-04 | 0.035 |
| Thallium | 0.029 | 3.8E-04 | 0.030 |
| Tin | 0.0015 | 8.6E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 7.9E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 5.4E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.0E-08 | 3.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 3.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.4E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 5.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 3.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.9E-09 | 1.9E-09 |
| Hexachlorobenzene | 0.0021 | 2.0E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.3E-09 | 1.3E-09 |
| Pentachlorophenol | 8.2E-04 | 4.0E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 5.3E-08 | 5.3E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.8E-09 | 3.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 7.2E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.8E-11 | 0.12 |
| Benzene | 0.13 | 1.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.3E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 7.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 5.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 4.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 5.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 9.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 4.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 9.5E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0055 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.7E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.7E-05 | 3.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.1E-04 | 3.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0014 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.4E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 8.2E-04 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 9.3E-06 | 0.015 |
| Arsenic | 0.12 | 1.9E-05 | 0.12 |
| Barium | 0.0049 | 1.4E-06 | 0.0049 |
| Beryllium | 0.043 | 3.2E-05 | 0.043 |
| Boron | 0.0031 | 2.1E-05 | 0.0031 |
| Cadmium | 0.12 | 9.5E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.2E-06 | 2.2E-06 |
| Cobalt | 0.0060 | 3.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 6.8E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.4E-05 | 3.4E-05 |
| Nickel | 0.045 | 0.0012 | 0.046 |
| Phosphorus | 7.3E-10 | 4.9E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.6E-06 | 0.015 |
| Silver | 0.034 | 2.3E-04 | 0.035 |
| Thallium | 0.029 | 2.7E-04 | 0.030 |
| Tin | 0.0015 | 6.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 7.9E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.5E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.8E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.6E-07 | 0.0023 |
| Fluorene[a] | - | 2.1E-08 | 2.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 2.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.6E-08 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.0E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.3E-09 | 1.3E-09 |
| Hexachlorobenzene | 0.0021 | 1.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 9.2E-10 | 9.2E-10 |
| Pentachlorophenol | 8.2E-04 | 2.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.7E-08 | 3.7E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.6E-09 | 2.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.0E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.5E-11 | 0.12 |
| Benzene | 0.13 | 7.0E-07 | 0.13 |
| Biphenyl | 2.3E-06 | 9.1E-09 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 8.6E-05 | 0.0054 |
| Bromoform | 0.0046 | 9.4E-06 | 0.0046 |
| Bromomethane | 0.020 | 4.9E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.5E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.0E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 7.0E-10 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.8E-09 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.0E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.1E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.6E-06 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0038 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 6.8E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.4E-05 | 6.4E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.3E-04 | 5.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0024 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0014 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.6E-05 | 0.015 |
| Arsenic | 0.12 | 3.3E-05 | 0.12 |
| Barium | 0.0049 | 2.5E-06 | 0.0050 |
| Beryllium | 0.043 | 5.6E-05 | 0.043 |
| Boron | 0.0031 | 3.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0016 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.8E-06 | 3.8E-06 |
| Cobalt | 0.0060 | 6.8E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.2E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 5.9E-05 | 5.9E-05 |
| Nickel | 0.045 | 0.0021 | 0.047 |
| Phosphorus | 7.3E-10 | 8.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.8E-06 | 0.015 |
| Silver | 0.034 | 3.9E-04 | 0.035 |
| Thallium | 0.029 | 4.6E-04 | 0.030 |
| Tin | 0.0015 | 1.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 4.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 9.6E-08 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.5E-07 | 0.0023 |
| Fluorene[a] | - | 3.7E-08 | 3.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 3.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 6.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.3E-09 | 2.3E-09 |
| Hexachlorobenzene | 0.0021 | 2.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.6E-09 | 1.6E-09 |
| Pentachlorophenol | 8.2E-04 | 4.9E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.5E-08 | 6.5E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.6E-09 | 4.6E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 8.7E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.5E-11 | 0.12 |
| Benzene | 0.13 | 1.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.6E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 8.5E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.3E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.2E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.1E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0066 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.2E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.0E-05 | 7.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.8E-04 | 5.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0026 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.8E-05 | 0.015 |
| Arsenic | 0.12 | 3.6E-05 | 0.12 |
| Barium | 0.0049 | 2.7E-06 | 0.0050 |
| Beryllium | 0.043 | 6.2E-05 | 0.043 |
| Boron | 0.0031 | 4.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0018 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.1E-06 | 4.1E-06 |
| Cobalt | 0.0060 | 7.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.5E-05 | 6.5E-05 |
| Nickel | 0.045 | 0.0023 | 0.047 |
| Phosphorus | 7.3E-10 | 9.3E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.1E-06 | 0.015 |
| Silver | 0.034 | 4.3E-04 | 0.035 |
| Thallium | 0.029 | 5.1E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.2E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.2E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.9E-07 | 0.0023 |
| Fluorene[a] | - | 4.1E-08 | 4.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.5E-09 | 2.5E-09 |
| Hexachlorobenzene | 0.0021 | 2.7E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.3E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.1E-08 | 7.1E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.0E-09 | 5.0E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.5E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.0E-10 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.6E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.3E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.6E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.8E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0073 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

# APPENDIX I-12

Revised Inhalation Results – Upset Operations (Process Upset Case) – 140,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.017 | 0.017 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.011 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.44 | 0.44 | - | 0.23 | 0.23 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.18 | 0.34 | 0.29 | 0.049 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.18 | 0.86 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.044 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.29 | 0.32 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0020 | 0.0035 | 1.2E-04 | 5.5E-05 | 1.8E-04 |
| Arsenic | 0.022 | 0.0076 | 0.030 | 0.0060 | 7.0E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.1E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.060 | 0.097 | 0.030 | 0.017 | 0.047 |
| Boron[c] | 0.019 | 0.055 | 0.074 | - | - | - |
| Cadmium | 0.015 | 0.25 | 0.27 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.012 | 0.012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0082 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.11 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.13 | 0.0100 | 0.050 | 0.060 |
| Mercury - Inorganic[a] | - | 0.091 | 0.091 | - | 0.0038 | 0.0038 |
| Nickel[c] | 0.0018 | 0.053 | 0.054 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.7E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.15 | - | - | - |
| Tin | 3.7E-04 | 0.0032 | 0.0036 | 3.0E-04 | 8.8E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0084 | 0.016 | 0.0015 | 5.8E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.017 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.3E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.0E-04 | 6.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.7E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.8E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.0E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.5E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.6E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0060 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0026 | 0.0036 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.4E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.0E-07 | 7.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.5E-04 | 0.0014 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.9E-07 | 4.9E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-04 | 5.8E-04 | 4.4E-05 | 5.2E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.7E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.6E-09 | 0.0091 | 0.0035 | 7.2E-10 | 0.0035 |
| Benzene | 0.17 | 6.6E-04 | 0.17 | 0.41 | 5.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.046 | 0.048 | - | - | - |
| Bromoform | 0.0014 | 0.0050 | 0.0064 | 5.4E-04 | 6.3E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0011 | 0.0029 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 9.0E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.8E-06 | 3.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.6E-05 | 2.7E-04 | 0.0058 | 4.0E-04 | 0.0062 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-04 | 0.0035 | 0.0017 | 6.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.38 | 0.0026 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.9E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.0E-06 | 6.1E-05 | 0.0014 | 7.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.9E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.8E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.3E-06 | 0.0024 | 0.045 | 2.1E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.9E-06 | 8.6E-06 | 0.0059 | 0.022 | 0.028 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-04 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.018 | 0.022 | 0.0083 | 4.5E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0083 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.5 | 1.9 | 1.1 | 0.77 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Schools**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0083 | 0.0083 | - | 0.0100 | 0.0100 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0054 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.083 | 0.083 |
| Hydrogen Fluoride (HF)[ac] | - | 0.065 | 0.065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.089 | 0.25 | 0.29 | 0.018 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.069 | 0.069 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.029 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.038 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-04 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0038 | 0.026 | 0.0060 | 2.6E-04 | 0.0063 |
| Barium | 0.0040 | 7.7E-04 | 0.0047 | 8.2E-04 | 3.9E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.030 | 0.067 | 0.030 | 0.0061 | 0.036 |
| Boron[c] | 0.019 | 0.028 | 0.046 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.14 | 0.024 | 0.052 | 0.076 |
| Chromium (hexavalent)[ac] | - | 0.0058 | 0.0058 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0041 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.052 | 0.060 | 0.0060 | 0.011 | 0.017 |
| Lead | 0.0081 | 0.060 | 0.068 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.045 | 0.045 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.026 | 0.028 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.3E-04 | 0.0041 | 3.0E-04 | 8.9E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.061 | 0.069 | 3.4E-04 | 6.2E-04 | 9.6E-04 |
| Thallium[c] | 0.0073 | 0.071 | 0.078 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.3E-04 |
| Vanadium | 0.0075 | 0.0042 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0072 | 0.0093 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.8E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 4.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.7E-06 | 5.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0070 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0013 | 0.0023 | 2.8E-04 | 8.9E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-07 | 9.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-04 | 9.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-07 | 2.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-07 | 2.8E-04 | 1.1E-04 | 2.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.8E-09 | 0.0091 | 0.0035 | 2.7E-10 | 0.0035 |
| Benzene | 0.17 | 3.3E-04 | 0.17 | 0.41 | 2.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.023 | 0.025 | - | - | - |
| Bromoform | 0.0014 | 0.0025 | 0.0039 | 5.4E-04 | 2.3E-04 | 7.7E-04 |
| Bromomethane | 0.0018 | 5.4E-04 | 0.0023 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.0E-06 | 0.014 | 0.31 | 3.3E-05 | 0.31 |
| Chloroform | 0.0055 | 9.2E-06 | 0.0055 | 0.23 | 9.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-05 | 2.4E-04 | 0.0058 | 1.5E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.8E-04 | 0.0033 | 0.0017 | 2.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0057 | 0.55 | 0.38 | 9.7E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-06 | 9.6E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-07 | 6.0E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-07 | 3.1E-05 | 1.9E-05 | 4.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-06 | 0.0024 | 0.045 | 7.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.9E-06 | 4.7E-06 | 0.0059 | 0.0080 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-05 | 5.8E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0088 | 0.014 | 0.0083 | 1.7E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0041 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.77 | 1.1 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0010 | 0.027 | 0.55 | 4.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0085 | 0.0085 | - | 0.0098 | 0.0098 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0056 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.22 | 0.22 | - | 0.082 | 0.082 |
| Hydrogen Fluoride (HF)[ac] | - | 0.067 | 0.067 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.018 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.073 | 0.073 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.12 | 0.80 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.030 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.15 | 0.18 | 0.070 | 0.037 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0010 | 0.0025 | 1.2E-04 | 2.0E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0039 | 0.026 | 0.0060 | 2.5E-04 | 0.0063 |
| Barium | 0.0040 | 7.9E-04 | 0.0048 | 8.2E-04 | 3.8E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.031 | 0.068 | 0.030 | 0.0060 | 0.036 |
| Boron[c] | 0.019 | 0.029 | 0.047 | - | - | - |
| Cadmium | 0.015 | 0.13 | 0.15 | 0.024 | 0.051 | 0.075 |
| Chromium (hexavalent)[ac] | - | 0.0060 | 0.0060 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0042 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.054 | 0.062 | 0.0060 | 0.010 | 0.017 |
| Lead | 0.0081 | 0.062 | 0.070 | 0.0100 | 0.018 | 0.028 |
| Mercury - Inorganic[a] | - | 0.047 | 0.047 | - | 0.0014 | 0.0014 |
| Nickel[c] | 0.0018 | 0.027 | 0.029 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.5E-04 | 0.0041 | 3.0E-04 | 8.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.063 | 0.071 | 3.4E-04 | 6.1E-04 | 9.5E-04 |
| Thallium[c] | 0.0073 | 0.073 | 0.080 | - | - | - |
| Tin | 3.7E-04 | 0.0016 | 0.0020 | 3.0E-04 | 3.2E-04 | 6.2E-04 |
| Vanadium | 0.0075 | 0.0043 | 0.012 | 0.0015 | 2.1E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0075 | 0.0095 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.7E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.6E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-04 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.1E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-04 | 5.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 6.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.9E-06 | 5.9E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.8E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.4E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.6E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.5E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0022 | 0.0069 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0024 | 2.8E-04 | 8.7E-05 | 3.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.6E-07 | 3.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-04 | 9.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-07 | 2.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.7E-05 | 5.0E-04 | 4.4E-05 | 1.9E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-07 | 2.8E-04 | 1.1E-04 | 2.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.9E-09 | 0.0091 | 0.0035 | 2.6E-10 | 0.0035 |
| Benzene | 0.17 | 3.4E-04 | 0.17 | 0.41 | 1.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.024 | 0.026 | - | - | - |
| Bromoform | 0.0014 | 0.0026 | 0.0040 | 5.4E-04 | 2.3E-04 | 7.6E-04 |
| Bromomethane | 0.0018 | 5.6E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.2E-06 | 0.014 | 0.31 | 3.2E-05 | 0.31 |
| Chloroform | 0.0055 | 9.5E-06 | 0.0055 | 0.23 | 9.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.0E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-05 | 2.4E-04 | 0.0058 | 1.4E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.9E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-04 | 0.0034 | 0.0017 | 2.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0059 | 0.55 | 0.38 | 9.6E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-06 | 9.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.3E-07 | 6.1E-05 | 0.0014 | 2.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-07 | 3.1E-05 | 1.9E-05 | 4.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-06 | 0.0024 | 0.045 | 7.4E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-06 | 4.8E-06 | 0.0059 | 0.0079 | 0.014 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.1E-05 | 5.9E-04 | 0.0066 | 1.5E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0090 | 0.014 | 0.0083 | 1.6E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0043 | 0.012 | 0.0079 | 1.5E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.80 | 1.1 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 4.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.014 | 0.014 | - | 0.021 | 0.021 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0091 | 0.078 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.36 | 0.36 | - | 0.18 | 0.18 |
| Hydrogen Fluoride (HF)[ac] | - | 0.11 | 0.11 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.15 | 0.31 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.25 | 0.27 | 0.070 | 0.080 | 0.15 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0017 | 0.0031 | 1.2E-04 | 4.3E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0064 | 0.028 | 0.0060 | 5.5E-04 | 0.0066 |
| Barium | 0.0040 | 0.0013 | 0.0053 | 8.2E-04 | 8.3E-05 | 9.0E-04 |
| Beryllium | 0.037 | 0.051 | 0.087 | 0.030 | 0.013 | 0.043 |
| Boron[c] | 0.019 | 0.046 | 0.065 | - | - | - |
| Cadmium | 0.015 | 0.21 | 0.23 | 0.024 | 0.11 | 0.13 |
| Chromium (hexavalent)[ac] | - | 0.0097 | 0.0097 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0068 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.088 | 0.095 | 0.0060 | 0.023 | 0.029 |
| Lead | 0.0081 | 0.10 | 0.11 | 0.0100 | 0.039 | 0.049 |
| Mercury - Inorganic[a] | - | 0.076 | 0.076 | - | 0.0030 | 0.0030 |
| Nickel[c] | 0.0018 | 0.044 | 0.046 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.3E-04 | 0.0044 | 3.0E-04 | 1.9E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.10 | 0.11 | 3.4E-04 | 0.0013 | 0.0017 |
| Thallium[c] | 0.0073 | 0.12 | 0.13 | - | - | - |
| Tin | 3.7E-04 | 0.0027 | 0.0030 | 3.0E-04 | 6.9E-04 | 1.0E-03 |
| Vanadium | 0.0075 | 0.0071 | 0.015 | 0.0015 | 4.6E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.012 | 0.014 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 5.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.4E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.5E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.1E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.3E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.7E-04 | 8.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.5E-04 | 6.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0014 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.3E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.3E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.5E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 9.5E-06 | 9.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.6E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 9.2E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.0E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0047 | 0.0095 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0022 | 0.0032 | 2.8E-04 | 1.9E-04 | 4.7E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.0E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.3E-04 | 0.0012 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.1E-07 | 4.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-04 | 5.5E-04 | 4.4E-05 | 4.1E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.9E-07 | 2.8E-04 | 1.1E-04 | 5.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.7E-09 | 0.0091 | 0.0035 | 5.7E-10 | 0.0035 |
| Benzene | 0.17 | 5.5E-04 | 0.17 | 0.41 | 4.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.038 | 0.040 | - | - | - |
| Bromoform | 0.0014 | 0.0042 | 0.0056 | 5.4E-04 | 5.0E-04 | 0.0010 |
| Bromomethane | 0.0018 | 9.1E-04 | 0.0027 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-05 | 0.014 | 0.31 | 7.1E-05 | 0.31 |
| Chloroform | 0.0055 | 1.5E-05 | 0.0055 | 0.23 | 2.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.2E-06 | 3.7E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.8E-05 | 2.6E-04 | 0.0058 | 3.2E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 4.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-04 | 0.0035 | 0.0017 | 5.3E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0096 | 0.56 | 0.38 | 0.0021 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.0E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 8.6E-07 | 6.1E-05 | 0.0014 | 6.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.1E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.8E-07 | 3.1E-05 | 1.9E-05 | 9.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.8E-06 | 0.0024 | 0.045 | 1.6E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.1E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 6.6E-06 | 7.3E-06 | 0.0059 | 0.017 | 0.023 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.3E-05 | 6.2E-04 | 0.0066 | 3.3E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.015 | 0.020 | 0.0083 | 3.5E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0069 | 0.015 | 0.0079 | 3.3E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 1.3 | 1.6 | 1.1 | 0.67 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0018 | 0.028 | 0.55 | 9.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.026 | 0.026 | - | 0.035 | 0.035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.017 | 0.086 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.67 | 0.67 | - | 0.29 | 0.29 |
| Hydrogen Fluoride (HF)[ac] | - | 0.20 | 0.20 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.28 | 0.44 | 0.29 | 0.064 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.056 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.45 | 0.48 | 0.070 | 0.13 | 0.20 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0031 | 0.0045 | 1.2E-04 | 7.1E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.012 | 0.034 | 0.0060 | 9.1E-04 | 0.0069 |
| Barium | 0.0040 | 0.0024 | 0.0063 | 8.2E-04 | 1.4E-04 | 9.6E-04 |
| Beryllium | 0.037 | 0.093 | 0.13 | 0.030 | 0.022 | 0.052 |
| Boron[c] | 0.019 | 0.085 | 0.10 | - | - | - |
| Cadmium | 0.015 | 0.39 | 0.41 | 0.024 | 0.18 | 0.21 |
| Chromium (hexavalent)[ac] | - | 0.018 | 0.018 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.013 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.16 | 0.17 | 0.0060 | 0.038 | 0.044 |
| Lead | 0.0081 | 0.19 | 0.19 | 0.0100 | 0.065 | 0.075 |
| Mercury - Inorganic[a] | - | 0.14 | 0.14 | - | 0.0049 | 0.0049 |
| Nickel[c] | 0.0018 | 0.081 | 0.083 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0050 | 3.0E-04 | 3.1E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.19 | 0.20 | 3.4E-04 | 0.0022 | 0.0025 |
| Thallium[c] | 0.0073 | 0.22 | 0.23 | - | - | - |
| Tin | 3.7E-04 | 0.0049 | 0.0053 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.013 | 0.021 | 0.0015 | 7.6E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.022 | 0.024 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-04 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.1E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.5E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.3E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.1E-04 | 9.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.1E-04 | 8.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.6E-04 | 8.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0022 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.7E-05 | 7.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.2E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.6E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.4E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0011 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.6E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0078 | 0.013 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0040 | 0.0051 | 2.8E-04 | 3.1E-04 | 5.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.7E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.1E-06 | 1.1E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0012 | 0.0018 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.6E-07 | 7.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.3E-04 | 6.6E-04 | 4.4E-05 | 6.7E-06 | 5.1E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.2E-07 | 2.8E-04 | 1.1E-04 | 8.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 8.6E-09 | 0.0091 | 0.0035 | 9.4E-10 | 0.0035 |
| Benzene | 0.17 | 0.0010 | 0.17 | 0.41 | 7.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.070 | 0.073 | - | - | - |
| Bromoform | 0.0014 | 0.0077 | 0.0091 | 5.4E-04 | 8.2E-04 | 0.0014 |
| Bromomethane | 0.0018 | 0.0017 | 0.0035 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.8E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 2.8E-05 | 0.0055 | 0.23 | 3.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.7E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.5E-05 | 4.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.0E-05 | 2.9E-04 | 0.0058 | 5.2E-04 | 0.0063 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 6.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-04 | 0.0037 | 0.0017 | 8.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.018 | 0.57 | 0.38 | 0.0034 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 9.1E-06 | 1.6E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.6E-06 | 6.2E-05 | 0.0014 | 1.0E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.9E-07 | 3.2E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.1E-06 | 0.0024 | 0.045 | 2.7E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.9E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.3E-05 | 0.0059 | 0.028 | 0.034 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.9E-04 | 0.0066 | 5.4E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.027 | 0.032 | 0.0083 | 5.8E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.013 | 0.021 | 0.0079 | 5.4E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 2.4 | 2.7 | 1.1 | 0.99 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0032 | 0.029 | 0.55 | 0.0015 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.016 | 0.016 | - | 0.027 | 0.027 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.010 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.42 | 0.42 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.17 | 0.33 | 0.29 | 0.049 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.050 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.28 | 0.31 | 0.070 | 0.10 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0019 | 0.0034 | 1.2E-04 | 5.4E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0073 | 0.029 | 0.0060 | 6.9E-04 | 0.0067 |
| Barium | 0.0040 | 0.0015 | 0.0055 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.058 | 0.095 | 0.030 | 0.016 | 0.047 |
| Boron[c] | 0.019 | 0.053 | 0.072 | - | - | - |
| Cadmium | 0.015 | 0.24 | 0.26 | 0.024 | 0.14 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.011 | 0.011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0079 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.10 | 0.11 | 0.0060 | 0.029 | 0.035 |
| Lead | 0.0081 | 0.12 | 0.12 | 0.0100 | 0.049 | 0.059 |
| Mercury - Inorganic[a] | - | 0.087 | 0.087 | - | 0.0037 | 0.0037 |
| Nickel[c] | 0.0018 | 0.051 | 0.053 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.4E-04 | 0.0045 | 3.0E-04 | 2.4E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0017 | 0.0020 |
| Thallium[c] | 0.0073 | 0.14 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0031 | 0.0034 | 3.0E-04 | 8.7E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0081 | 0.016 | 0.0015 | 5.7E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.1E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.7E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.1E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-04 | 7.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.9E-04 | 6.3E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.1E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.6E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.5E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.9E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.3E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.3E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.6E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.5E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0059 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0025 | 0.0035 | 2.8E-04 | 2.4E-04 | 5.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.8E-07 | 6.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.2E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.7E-07 | 4.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.7E-04 | 4.4E-05 | 5.1E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.5E-07 | 2.8E-04 | 1.1E-04 | 6.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.4E-09 | 0.0091 | 0.0035 | 7.1E-10 | 0.0035 |
| Benzene | 0.17 | 6.4E-04 | 0.17 | 0.41 | 5.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.044 | 0.046 | - | - | - |
| Bromoform | 0.0014 | 0.0048 | 0.0063 | 5.4E-04 | 6.2E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0010 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 8.9E-05 | 0.31 |
| Chloroform | 0.0055 | 1.8E-05 | 0.0055 | 0.23 | 2.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.4E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.4E-05 | 2.6E-04 | 0.0058 | 3.9E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.5E-04 | 0.0035 | 0.0017 | 6.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.38 | 0.0026 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.7E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.9E-07 | 6.1E-05 | 0.0014 | 7.8E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.5E-07 | 3.1E-05 | 1.9E-05 | 1.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.2E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.6E-06 | 8.3E-06 | 0.0059 | 0.022 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.6E-05 | 6.3E-04 | 0.0066 | 4.1E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.017 | 0.022 | 0.0083 | 4.4E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0080 | 0.016 | 0.0079 | 4.1E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.5 | 1.8 | 1.1 | 0.78 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0020 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0054 | 0.0054 | - | 0.0082 | 0.0082 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0036 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.068 | 0.068 |
| Hydrogen Fluoride (HF)[ac] | - | 0.043 | 0.043 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.059 | 0.22 | 0.29 | 0.015 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.047 | 0.047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.079 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.097 | 0.12 | 0.070 | 0.031 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.5E-04 | 0.0021 | 1.2E-04 | 1.7E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0025 | 0.025 | 0.0060 | 2.1E-04 | 0.0062 |
| Barium | 0.0040 | 5.0E-04 | 0.0045 | 8.2E-04 | 3.2E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.020 | 0.057 | 0.030 | 0.0050 | 0.035 |
| Boron[c] | 0.019 | 0.018 | 0.037 | - | - | - |
| Cadmium | 0.015 | 0.083 | 0.098 | 0.024 | 0.042 | 0.067 |
| Chromium (hexavalent)[ac] | - | 0.0038 | 0.0038 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0027 | 0.0094 | - | - | - |
| Cobalt | 0.0074 | 0.034 | 0.042 | 0.0060 | 0.0088 | 0.015 |
| Lead | 0.0081 | 0.040 | 0.048 | 0.0100 | 0.015 | 0.025 |
| Mercury - Inorganic[a] | - | 0.030 | 0.030 | - | 0.0011 | 0.0011 |
| Nickel[c] | 0.0018 | 0.017 | 0.019 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.9E-04 | 0.0040 | 3.0E-04 | 7.3E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.040 | 0.048 | 3.4E-04 | 5.1E-04 | 8.5E-04 |
| Thallium[c] | 0.0073 | 0.046 | 0.054 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 2.7E-04 | 5.7E-04 |
| Vanadium | 0.0075 | 0.0028 | 0.010 | 0.0015 | 1.8E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0047 | 0.0068 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.7E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 9.1E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.6E-05 | 7.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.5E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.8E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.1E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 9.0E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.7E-06 | 3.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.2E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
### Hospitals

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0018 | 0.0066 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.6E-04 | 0.0019 | 2.8E-04 | 7.3E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 8.0E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.3E-07 | 2.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.5E-04 | 8.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.6E-07 | 1.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.9E-05 | 4.8E-04 | 4.4E-05 | 1.6E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 1.9E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.8E-09 | 0.0091 | 0.0035 | 2.2E-10 | 0.0035 |
| Benzene | 0.17 | 2.2E-04 | 0.17 | 0.41 | 1.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.015 | 0.017 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0031 | 5.4E-04 | 1.9E-04 | 7.3E-04 |
| Bromomethane | 0.0018 | 3.6E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.9E-06 | 0.014 | 0.31 | 2.7E-05 | 0.31 |
| Chloroform | 0.0055 | 6.1E-06 | 0.0055 | 0.23 | 7.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.2E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.5E-05 | 2.3E-04 | 0.0058 | 1.2E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.6E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 2.0E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0038 | 0.55 | 0.38 | 8.0E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.4E-07 | 6.0E-05 | 0.0014 | 2.4E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.6E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.9E-07 | 3.1E-05 | 1.9E-05 | 3.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.1E-06 | 0.0024 | 0.045 | 6.2E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.6E-06 | 3.3E-06 | 0.0059 | 0.0066 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.3E-05 | 5.7E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0058 | 0.011 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0027 | 0.011 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.51 | 0.84 | 1.1 | 0.26 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.9E-04 | 0.027 | 0.55 | 3.6E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0041 | 0.0041 | - | 0.0073 | 0.0073 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.061 | 0.061 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.045 | 0.21 | 0.29 | 0.013 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.082 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.028 | 0.098 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 1.5E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.9E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.9E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0045 | 0.035 |
| Boron[c] | 0.019 | 0.014 | 0.032 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.038 | 0.062 |
| Chromium (hexavalent)[ac] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.0079 | 0.014 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.014 | 0.024 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0010 | 0.0010 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 6.5E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 4.5E-04 | 8.0E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 7.9E-04 | 0.0012 | 3.0E-04 | 2.4E-04 | 5.4E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.6E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.6E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0016 | 0.0064 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 6.5E-05 | 3.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.4E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 1.7E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-09 | 0.0091 | 0.0035 | 2.0E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.5E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.7E-04 | 7.1E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 2.4E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 6.9E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.1E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 1.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.38 | 7.2E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 2.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 5.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0059 | 0.012 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.1E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0044 | 0.0092 | 0.0083 | 1.2E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.1E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.39 | 0.71 | 1.1 | 0.24 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-04 | 0.027 | 0.55 | 3.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0041 | 0.0041 | - | 0.011 | 0.011 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.091 | 0.091 |
| Hydrogen Fluoride (HF)[ac] | - | 0.033 | 0.033 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.045 | 0.21 | 0.29 | 0.020 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.038 | 0.038 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.063 | 0.74 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.016 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.073 | 0.10 | 0.070 | 0.041 | 0.11 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.0E-04 | 0.0020 | 1.2E-04 | 2.2E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 2.8E-04 | 0.0063 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 4.3E-05 | 8.6E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0068 | 0.037 |
| Boron[c] | 0.019 | 0.014 | 0.032 | - | - | - |
| Cadmium | 0.015 | 0.063 | 0.078 | 0.024 | 0.057 | 0.081 |
| Chromium (hexavalent)[ac] | - | 0.0029 | 0.0029 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.034 | 0.0060 | 0.012 | 0.018 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.020 | 0.030 |
| Mercury - Inorganic[a] | - | 0.023 | 0.023 | - | 0.0015 | 0.0015 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.2E-04 | 0.0039 | 3.0E-04 | 9.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.039 | 3.4E-04 | 6.8E-04 | 0.0010 |
| Thallium[c] | 0.0073 | 0.035 | 0.043 | - | - | - |
| Tin | 3.7E-04 | 8.0E-04 | 0.0012 | 3.0E-04 | 3.6E-04 | 6.6E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 2.4E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0036 | 0.0057 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.9E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.0E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.5E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 7.0E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.8E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.4E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.1E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0024 | 0.0072 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.5E-04 | 0.0017 | 2.8E-04 | 9.8E-05 | 3.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.1E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.8E-07 | 1.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.9E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 2.1E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.2E-07 | 2.8E-04 | 1.1E-04 | 2.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-09 | 0.0091 | 0.0035 | 2.9E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 2.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.014 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 2.5E-04 | 7.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.0E-06 | 0.014 | 0.31 | 3.6E-05 | 0.31 |
| Chloroform | 0.0055 | 4.6E-06 | 0.0055 | 0.23 | 1.0E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.6E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.2E-05 | 0.0033 | 0.0017 | 2.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0029 | 0.55 | 0.38 | 0.0011 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.6E-07 | 6.0E-05 | 0.0014 | 3.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 4.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.2E-07 | 0.0024 | 0.045 | 8.3E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 5.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.0E-06 | 2.7E-06 | 0.0059 | 0.0088 | 0.015 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.5E-05 | 5.6E-04 | 0.0066 | 1.7E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0044 | 0.0092 | 0.0083 | 1.8E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0021 | 0.0099 | 0.0079 | 1.7E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.39 | 0.71 | 1.1 | 0.30 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.2E-04 | 0.027 | 0.55 | 4.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0067 | 0.0067 | - | 0.0090 | 0.0090 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.075 | 0.075 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.072 | 0.23 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.081 | 0.081 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.034 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.034 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 3.5E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0055 | 0.036 |
| Boron[c] | 0.019 | 0.022 | 0.041 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.046 | 0.071 |
| Chromium (hexavalent)[ac] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.0096 | 0.016 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.017 | 0.027 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 8.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 5.6E-04 | 9.0E-04 |
| Thallium[c] | 0.0073 | 0.057 | 0.064 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 2.9E-04 | 5.9E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0058 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.7E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0020 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 8.0E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 1.7E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.3E-09 | 0.0091 | 0.0035 | 2.4E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 1.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.018 | 0.021 | - | - | - |
| Bromoform | 0.0014 | 0.0020 | 0.0035 | 5.4E-04 | 2.1E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.8E-06 | 0.014 | 0.31 | 3.0E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 8.5E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.5E-04 | 0.0033 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.38 | 8.7E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.1E-07 | 6.0E-05 | 0.0014 | 2.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 3.9E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 6.8E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.8E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.0072 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 1.4E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0071 | 0.012 | 0.0083 | 1.5E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 1.4E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.62 | 0.95 | 1.1 | 0.33 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-04 | 0.027 | 0.55 | 3.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.012 | 0.012 | - | 0.026 | 0.026 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0079 | 0.077 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.31 | 0.31 | - | 0.22 | 0.22 |
| Hydrogen Fluoride (HF)[ac] | - | 0.094 | 0.094 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.13 | 0.29 | 0.29 | 0.047 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.11 | 0.11 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.19 | 0.87 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.047 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.21 | 0.24 | 0.070 | 0.098 | 0.17 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0014 | 0.0029 | 1.2E-04 | 5.3E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0055 | 0.028 | 0.0060 | 6.7E-04 | 0.0067 |
| Barium | 0.0040 | 0.0011 | 0.0051 | 8.2E-04 | 1.0E-04 | 9.2E-04 |
| Beryllium | 0.037 | 0.044 | 0.080 | 0.030 | 0.016 | 0.046 |
| Boron[c] | 0.019 | 0.040 | 0.059 | - | - | - |
| Cadmium | 0.015 | 0.18 | 0.20 | 0.024 | 0.13 | 0.16 |
| Chromium (hexavalent)[ac] | - | 0.0084 | 0.0084 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0059 | 0.013 | - | - | - |
| Cobalt | 0.0074 | 0.076 | 0.083 | 0.0060 | 0.028 | 0.034 |
| Lead | 0.0081 | 0.087 | 0.095 | 0.0100 | 0.048 | 0.058 |
| Mercury - Inorganic[a] | - | 0.065 | 0.065 | - | 0.0036 | 0.0036 |
| Nickel[c] | 0.0018 | 0.038 | 0.040 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.3E-04 | 0.0043 | 3.0E-04 | 2.3E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.088 | 0.096 | 3.4E-04 | 0.0016 | 0.0020 |
| Thallium[c] | 0.0073 | 0.10 | 0.11 | - | - | - |
| Tin | 3.7E-04 | 0.0023 | 0.0027 | 3.0E-04 | 8.4E-04 | 0.0011 |
| Vanadium | 0.0075 | 0.0061 | 0.014 | 0.0015 | 5.6E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.010 | 0.013 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.8E-05 | 7.9E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.1E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.0E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.9E-05 | 7.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.2E-04 | 5.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0017 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.6E-05 | 7.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.0E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.2E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 8.2E-06 | 8.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.9E-05 | 3.7E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.0E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 7.9E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 5.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.6E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0058 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0019 | 0.0029 | 2.8E-04 | 2.3E-04 | 5.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.8E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 5.1E-07 | 5.1E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.4E-04 | 0.0011 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.5E-07 | 3.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.1E-04 | 5.3E-04 | 4.4E-05 | 5.0E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.4E-07 | 2.8E-04 | 1.1E-04 | 6.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.0E-09 | 0.0091 | 0.0035 | 7.0E-10 | 0.0035 |
| Benzene | 0.17 | 4.8E-04 | 0.17 | 0.41 | 5.1E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.033 | 0.035 | - | - | - |
| Bromoform | 0.0014 | 0.0036 | 0.0050 | 5.4E-04 | 6.0E-04 | 0.0011 |
| Bromomethane | 0.0018 | 7.9E-04 | 0.0026 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.7E-06 | 0.014 | 0.31 | 8.6E-05 | 0.31 |
| Chloroform | 0.0055 | 1.3E-05 | 0.0055 | 0.23 | 2.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 7.0E-06 | 3.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.3E-05 | 2.5E-04 | 0.0058 | 3.8E-04 | 0.0061 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 5.0E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.7E-04 | 0.0034 | 0.0017 | 6.5E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0083 | 0.56 | 0.38 | 0.0025 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 4.3E-06 | 1.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.4E-07 | 6.1E-05 | 0.0014 | 7.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 4.2E-07 | 3.1E-05 | 1.9E-05 | 1.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.4E-06 | 0.0024 | 0.045 | 2.0E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.4E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 5.7E-06 | 6.4E-06 | 0.0059 | 0.021 | 0.027 |
| Xylenes, m-, p- and o- | 5.3E-04 | 7.2E-05 | 6.1E-04 | 0.0066 | 4.0E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.013 | 0.017 | 0.0083 | 4.3E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0060 | 0.014 | 0.0079 | 4.0E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.1 | 1.4 | 1.1 | 0.75 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0015 | 0.028 | 0.55 | 0.0011 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0041 | 0.0041 | - | 0.0067 | 0.0067 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0027 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.11 | 0.11 | - | 0.056 | 0.056 |
| Hydrogen Fluoride (HF)[ac] | - | 0.032 | 0.032 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.044 | 0.21 | 0.29 | 0.012 | 0.30 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.059 | 0.059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.099 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.025 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.072 | 0.10 | 0.070 | 0.025 | 0.096 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.9E-04 | 0.0020 | 1.2E-04 | 1.4E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0019 | 0.024 | 0.0060 | 1.7E-04 | 0.0062 |
| Barium | 0.0040 | 3.8E-04 | 0.0044 | 8.2E-04 | 2.6E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.015 | 0.052 | 0.030 | 0.0042 | 0.034 |
| Boron[c] | 0.019 | 0.014 | 0.032 | - | - | - |
| Cadmium | 0.015 | 0.062 | 0.077 | 0.024 | 0.035 | 0.059 |
| Chromium (hexavalent)[ac] | - | 0.0028 | 0.0028 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0020 | 0.0087 | - | - | - |
| Cobalt | 0.0074 | 0.026 | 0.033 | 0.0060 | 0.0072 | 0.013 |
| Lead | 0.0081 | 0.030 | 0.038 | 0.0100 | 0.012 | 0.022 |
| Mercury - Inorganic[a] | - | 0.022 | 0.022 | - | 9.3E-04 | 9.3E-04 |
| Nickel[c] | 0.0018 | 0.013 | 0.015 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.1E-04 | 0.0039 | 3.0E-04 | 6.0E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.030 | 0.038 | 3.4E-04 | 4.2E-04 | 7.6E-04 |
| Thallium[c] | 0.0073 | 0.035 | 0.042 | - | - | - |
| Tin | 3.7E-04 | 7.8E-04 | 0.0011 | 3.0E-04 | 2.2E-04 | 5.2E-04 |
| Vanadium | 0.0075 | 0.0021 | 0.0096 | 0.0015 | 1.4E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0035 | 0.0056 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.2E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.8E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.9E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.3E-05 | 4.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.7E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.4E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.8E-06 | 2.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.3E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.7E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 8.9E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0015 | 0.0062 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 6.4E-04 | 0.0017 | 2.8E-04 | 6.0E-05 | 3.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.0E-08 | 9.2E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-07 | 1.7E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.8E-04 | 7.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.7E-05 | 4.6E-04 | 4.4E-05 | 1.3E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-07 | 2.8E-04 | 1.1E-04 | 1.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.4E-09 | 0.0091 | 0.0035 | 1.8E-10 | 0.0035 |
| Benzene | 0.17 | 1.6E-04 | 0.17 | 0.41 | 1.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.011 | 0.013 | - | - | - |
| Bromoform | 0.0014 | 0.0012 | 0.0027 | 5.4E-04 | 1.6E-04 | 6.9E-04 |
| Bromomethane | 0.0018 | 2.7E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.9E-06 | 0.014 | 0.31 | 2.2E-05 | 0.31 |
| Chloroform | 0.0055 | 4.5E-06 | 0.0055 | 0.23 | 6.4E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.4E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-05 | 2.3E-04 | 0.0058 | 1.0E-04 | 0.0058 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 9.0E-05 | 0.0033 | 0.0017 | 1.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0028 | 0.55 | 0.38 | 6.6E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.5E-06 | 8.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-07 | 6.0E-05 | 0.0014 | 2.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-07 | 3.1E-05 | 1.9E-05 | 3.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.1E-07 | 0.0024 | 0.045 | 5.1E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 3.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-06 | 2.7E-06 | 0.0059 | 0.0054 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-05 | 5.6E-04 | 0.0066 | 1.0E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0043 | 0.0091 | 0.0083 | 1.1E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0020 | 0.0099 | 0.0079 | 1.0E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.38 | 0.71 | 1.1 | 0.25 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.1E-04 | 0.027 | 0.55 | 2.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0052 | 0.0052 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0034 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.14 | 0.14 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.041 | 0.041 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.056 | 0.22 | 0.29 | 0.031 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.064 | 0.064 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.11 | 0.79 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.027 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.092 | 0.12 | 0.070 | 0.063 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 6.2E-04 | 0.0021 | 1.2E-04 | 3.4E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0024 | 0.024 | 0.0060 | 4.3E-04 | 0.0065 |
| Barium | 0.0040 | 4.8E-04 | 0.0045 | 8.2E-04 | 6.5E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.019 | 0.056 | 0.030 | 0.010 | 0.041 |
| Boron[c] | 0.019 | 0.017 | 0.036 | - | - | - |
| Cadmium | 0.015 | 0.080 | 0.094 | 0.024 | 0.087 | 0.11 |
| Chromium (hexavalent)[ac] | - | 0.0036 | 0.0036 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0026 | 0.0093 | - | - | - |
| Cobalt | 0.0074 | 0.033 | 0.040 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.038 | 0.046 | 0.0100 | 0.031 | 0.041 |
| Mercury - Inorganic[a] | - | 0.028 | 0.028 | - | 0.0023 | 0.0023 |
| Nickel[c] | 0.0018 | 0.017 | 0.018 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.7E-04 | 0.0039 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.038 | 0.046 | 3.4E-04 | 0.0010 | 0.0014 |
| Thallium[c] | 0.0073 | 0.044 | 0.052 | - | - | - |
| Tin | 3.7E-04 | 0.0010 | 0.0014 | 3.0E-04 | 5.4E-04 | 8.5E-04 |
| Vanadium | 0.0075 | 0.0026 | 0.010 | 0.0015 | 3.6E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0045 | 0.0066 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.1E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.6E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 9.3E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 3.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 8.7E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.3E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 6.3E-05 | 7.2E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 9.4E-05 | 4.4E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 8.6E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 9.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.6E-06 | 3.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.7E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.1E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0037 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 8.2E-04 | 0.0018 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 7.6E-08 | 9.4E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.2E-07 | 2.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.3E-04 | 8.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.5E-07 | 1.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.7E-05 | 4.7E-04 | 4.4E-05 | 3.2E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.5E-07 | 2.8E-04 | 1.1E-04 | 4.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.8E-09 | 0.0091 | 0.0035 | 4.5E-10 | 0.0035 |
| Benzene | 0.17 | 2.1E-04 | 0.17 | 0.41 | 3.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0030 | 5.4E-04 | 3.9E-04 | 9.2E-04 |
| Bromomethane | 0.0018 | 3.4E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.8E-06 | 0.014 | 0.31 | 5.6E-05 | 0.31 |
| Chloroform | 0.0055 | 5.8E-06 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.0E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.1E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.4E-05 | 2.3E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.2E-04 | 0.0033 | 0.0017 | 4.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0036 | 0.55 | 0.38 | 0.0016 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.9E-06 | 8.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 3.2E-07 | 6.0E-05 | 0.0014 | 4.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.5E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.8E-07 | 3.1E-05 | 1.9E-05 | 7.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.0E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 8.9E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 2.5E-06 | 3.2E-06 | 0.0059 | 0.014 | 0.019 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.1E-05 | 5.7E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0055 | 0.010 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0026 | 0.010 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.48 | 0.81 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 6.6E-04 | 0.027 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0032 | 0.0032 | - | 0.0087 | 0.0087 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0021 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.085 | 0.085 | - | 0.072 | 0.072 |
| Hydrogen Fluoride (HF)[ac] | - | 0.026 | 0.026 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.035 | 0.20 | 0.29 | 0.016 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.031 | 0.031 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.052 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.058 | 0.086 | 0.070 | 0.033 | 0.10 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.9E-04 | 0.0019 | 1.2E-04 | 1.8E-05 | 1.4E-04 |
| Arsenic | 0.022 | 0.0015 | 0.024 | 0.0060 | 2.3E-04 | 0.0063 |
| Barium | 0.0040 | 3.0E-04 | 0.0043 | 8.2E-04 | 3.4E-05 | 8.5E-04 |
| Beryllium | 0.037 | 0.012 | 0.049 | 0.030 | 0.0054 | 0.036 |
| Boron[c] | 0.019 | 0.011 | 0.029 | - | - | - |
| Cadmium | 0.015 | 0.050 | 0.064 | 0.024 | 0.045 | 0.069 |
| Chromium (hexavalent)[ac] | - | 0.0023 | 0.0023 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0016 | 0.0083 | - | - | - |
| Cobalt | 0.0074 | 0.021 | 0.028 | 0.0060 | 0.0093 | 0.015 |
| Lead | 0.0081 | 0.024 | 0.032 | 0.0100 | 0.016 | 0.026 |
| Mercury - Inorganic[a] | - | 0.018 | 0.018 | - | 0.0012 | 0.0012 |
| Nickel[c] | 0.0018 | 0.010 | 0.012 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.7E-04 | 0.0038 | 3.0E-04 | 7.7E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.024 | 0.032 | 3.4E-04 | 5.4E-04 | 8.8E-04 |
| Thallium[c] | 0.0073 | 0.028 | 0.035 | - | - | - |
| Tin | 3.7E-04 | 6.2E-04 | 9.9E-04 | 3.0E-04 | 2.8E-04 | 5.8E-04 |
| Vanadium | 0.0075 | 0.0016 | 0.0092 | 0.0015 | 1.9E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0028 | 0.0049 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.3E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.0E-05 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.1E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.9E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.7E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.9E-05 | 4.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 5.5E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.7E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.9E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.2E-06 | 2.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 3.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.1E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0019 | 0.0067 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.1E-04 | 0.0015 | 2.8E-04 | 7.7E-05 | 3.6E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.8E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.4E-07 | 1.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.5E-04 | 7.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 9.6E-08 | 9.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.9E-05 | 4.6E-04 | 4.4E-05 | 1.7E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.1E-08 | 2.8E-04 | 1.1E-04 | 2.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.1E-09 | 0.0091 | 0.0035 | 2.3E-10 | 0.0035 |
| Benzene | 0.17 | 1.3E-04 | 0.17 | 0.41 | 1.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0089 | 0.011 | - | - | - |
| Bromoform | 0.0014 | 9.8E-04 | 0.0024 | 5.4E-04 | 2.0E-04 | 7.4E-04 |
| Bromomethane | 0.0018 | 2.1E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.3E-06 | 0.014 | 0.31 | 2.9E-05 | 0.31 |
| Chloroform | 0.0055 | 3.6E-06 | 0.0055 | 0.23 | 8.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.9E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.9E-06 | 2.3E-04 | 0.0058 | 1.3E-04 | 0.0059 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 1.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.2E-05 | 0.0032 | 0.0017 | 2.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0022 | 0.55 | 0.38 | 8.5E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-06 | 7.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.0E-07 | 6.0E-05 | 0.0014 | 2.5E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.1E-07 | 3.1E-05 | 1.9E-05 | 3.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.5E-07 | 0.0024 | 0.045 | 6.6E-06 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 4.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.5E-06 | 2.3E-06 | 0.0059 | 0.0070 | 0.013 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.9E-05 | 5.5E-04 | 0.0066 | 1.3E-04 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0034 | 0.0083 | 0.0083 | 1.4E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0016 | 0.0095 | 0.0079 | 1.3E-04 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.30 | 0.63 | 1.1 | 0.24 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.1E-04 | 0.027 | 0.55 | 3.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0090 | 0.0090 | - | 0.015 | 0.015 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0059 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.24 | 0.24 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.071 | 0.071 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.097 | 0.26 | 0.29 | 0.027 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.085 | 0.085 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.14 | 0.82 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.035 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.16 | 0.19 | 0.070 | 0.055 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.0E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0042 | 0.026 | 0.0060 | 3.8E-04 | 0.0064 |
| Barium | 0.0040 | 8.4E-04 | 0.0048 | 8.2E-04 | 5.7E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.033 | 0.070 | 0.030 | 0.0090 | 0.039 |
| Boron[c] | 0.019 | 0.030 | 0.049 | - | - | - |
| Cadmium | 0.015 | 0.14 | 0.15 | 0.024 | 0.076 | 0.100 |
| Chromium (hexavalent)[ac] | - | 0.0063 | 0.0063 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0044 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.057 | 0.065 | 0.0060 | 0.016 | 0.022 |
| Lead | 0.0081 | 0.066 | 0.074 | 0.0100 | 0.027 | 0.037 |
| Mercury - Inorganic[a] | - | 0.049 | 0.049 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.029 | 0.031 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.7E-04 | 0.0041 | 3.0E-04 | 1.3E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.066 | 0.075 | 3.4E-04 | 9.1E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.077 | 0.084 | - | - | - |
| Tin | 3.7E-04 | 0.0017 | 0.0021 | 3.0E-04 | 4.8E-04 | 7.8E-04 |
| Vanadium | 0.0075 | 0.0046 | 0.012 | 0.0015 | 3.1E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0079 | 0.0100 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.9E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.6E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.9E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.5E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-04 | 5.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.3E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.4E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.5E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.2E-06 | 6.2E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.0E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.0E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.0E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0032 | 0.0080 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0014 | 0.0025 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-07 | 9.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.8E-07 | 3.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.1E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.7E-07 | 2.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.2E-05 | 5.1E-04 | 4.4E-05 | 2.8E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.5E-07 | 2.8E-04 | 1.1E-04 | 3.5E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.0E-09 | 0.0091 | 0.0035 | 3.9E-10 | 0.0035 |
| Benzene | 0.17 | 3.6E-04 | 0.17 | 0.41 | 2.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.025 | 0.027 | - | - | - |
| Bromoform | 0.0014 | 0.0027 | 0.0042 | 5.4E-04 | 3.4E-04 | 8.8E-04 |
| Bromomethane | 0.0018 | 5.9E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.5E-06 | 0.014 | 0.31 | 4.8E-05 | 0.31 |
| Chloroform | 0.0055 | 1.0E-05 | 0.0055 | 0.23 | 1.4E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.4E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.3E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.5E-05 | 2.4E-04 | 0.0058 | 2.2E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 2.8E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.0E-04 | 0.0034 | 0.0017 | 3.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0063 | 0.55 | 0.38 | 0.0014 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.2E-06 | 9.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.6E-07 | 6.1E-05 | 0.0014 | 4.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.1E-07 | 3.1E-05 | 1.9E-05 | 6.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.8E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 7.8E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.3E-06 | 5.0E-06 | 0.0059 | 0.012 | 0.018 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.4E-05 | 5.9E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0096 | 0.014 | 0.0083 | 2.4E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0045 | 0.012 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.84 | 1.2 | 1.1 | 0.46 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0011 | 0.027 | 0.55 | 6.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0095 | 0.0095 | - | 0.019 | 0.019 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0063 | 0.075 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.25 | 0.25 | - | 0.16 | 0.16 |
| Hydrogen Fluoride (HF)[ac] | - | 0.075 | 0.075 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.10 | 0.26 | 0.29 | 0.035 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.055 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.17 | 0.20 | 0.070 | 0.073 | 0.14 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0011 | 0.0026 | 1.2E-04 | 3.9E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0044 | 0.026 | 0.0060 | 5.0E-04 | 0.0065 |
| Barium | 0.0040 | 8.8E-04 | 0.0049 | 8.2E-04 | 7.6E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.035 | 0.071 | 0.030 | 0.012 | 0.042 |
| Boron[c] | 0.019 | 0.032 | 0.050 | - | - | - |
| Cadmium | 0.015 | 0.15 | 0.16 | 0.024 | 0.10 | 0.12 |
| Chromium (hexavalent)[ac] | - | 0.0067 | 0.0067 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0047 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.060 | 0.068 | 0.0060 | 0.021 | 0.027 |
| Lead | 0.0081 | 0.069 | 0.078 | 0.0100 | 0.036 | 0.046 |
| Mercury - Inorganic[a] | - | 0.052 | 0.052 | - | 0.0027 | 0.0027 |
| Nickel[c] | 0.0018 | 0.030 | 0.032 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.0E-04 | 0.0042 | 3.0E-04 | 1.7E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.070 | 0.078 | 3.4E-04 | 0.0012 | 0.0015 |
| Thallium[c] | 0.0073 | 0.081 | 0.089 | - | - | - |
| Tin | 3.7E-04 | 0.0018 | 0.0022 | 3.0E-04 | 6.3E-04 | 9.3E-04 |
| Vanadium | 0.0075 | 0.0048 | 0.012 | 0.0015 | 4.2E-04 | 0.0020 |
| Zinc[c] | 0.0021 | 0.0083 | 0.010 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.0E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.3E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.2E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.9E-05 | 7.4E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.7E-04 | 5.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0012 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.6E-05 | 7.0E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.0E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.7E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 6.5E-06 | 6.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.1E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.7E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.3E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0043 | 0.0091 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0015 | 0.0025 | 2.8E-04 | 1.7E-04 | 4.5E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.0E-07 | 4.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.3E-04 | 0.0010 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.6E-05 | 5.1E-04 | 4.4E-05 | 3.7E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-07 | 2.8E-04 | 1.1E-04 | 4.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.2E-09 | 0.0091 | 0.0035 | 5.2E-10 | 0.0035 |
| Benzene | 0.17 | 3.8E-04 | 0.17 | 0.41 | 3.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.026 | 0.028 | - | - | - |
| Bromoform | 0.0014 | 0.0029 | 0.0043 | 5.4E-04 | 4.5E-04 | 9.9E-04 |
| Bromomethane | 0.0018 | 6.3E-04 | 0.0024 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.9E-06 | 0.014 | 0.31 | 6.4E-05 | 0.31 |
| Chloroform | 0.0055 | 1.1E-05 | 0.0055 | 0.23 | 1.8E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.6E-06 | 3.5E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.6E-05 | 2.5E-04 | 0.0058 | 2.9E-04 | 0.0060 |
| Ethylbenzene[b] | - | - | - | 0.0012 | 3.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.1E-04 | 0.0034 | 0.0017 | 4.8E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0066 | 0.56 | 0.38 | 0.0019 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.4E-06 | 1.0E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.9E-07 | 6.1E-05 | 0.0014 | 5.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.8E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.3E-07 | 3.1E-05 | 1.9E-05 | 8.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-06 | 0.0024 | 0.045 | 1.5E-05 | 0.045 |
| Trichlorofluoromethane[b] | - | - | - | 3.6E-04 | 1.0E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 4.5E-06 | 5.3E-06 | 0.0059 | 0.016 | 0.022 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.7E-05 | 5.9E-04 | 0.0066 | 3.0E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.010 | 0.015 | 0.0083 | 3.2E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0047 | 0.013 | 0.0079 | 3.0E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 0.89 | 1.2 | 1.1 | 0.64 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0012 | 0.027 | 0.55 | 8.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.5E-04 | 9.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.7E-06 | 6.7E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.2E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.9E-09 | 7.9E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.1E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 8.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.9E-05 | 4.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.1E-04 | 4.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.5E-05 | 0.12 |
| Barium | 0.0049 | 1.9E-06 | 0.0050 |
| Beryllium | 0.043 | 4.3E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.9E-06 | 2.9E-06 |
| Cobalt | 0.0060 | 5.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.1E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.6E-05 | 4.6E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.1E-04 | 0.035 |
| Thallium | 0.029 | 3.6E-04 | 0.030 |
| Tin | 0.0015 | 8.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.6E-07 | 0.0023 |
| Fluorene[a] | - | 5.5E-08 | 5.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.4E-09 | 3.4E-09 |
| Hexachlorobenzene | 0.0021 | 3.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.6E-08 | 9.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.8E-09 | 6.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0048 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.1E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.9E-05 | 4.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.1E-04 | 4.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.5E-05 | 0.12 |
| Barium | 0.0049 | 1.9E-06 | 0.0050 |
| Beryllium | 0.043 | 4.3E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.9E-06 | 2.9E-06 |
| Cobalt | 0.0060 | 5.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.1E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.5E-05 | 4.5E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.5E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.0E-04 | 0.035 |
| Thallium | 0.029 | 3.5E-04 | 0.030 |
| Tin | 0.0015 | 8.0E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.6E-07 | 0.0023 |
| Fluorene[a] | - | 5.5E-08 | 5.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.4E-09 | 3.4E-09 |
| Hexachlorobenzene | 0.0021 | 3.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.6E-08 | 9.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.8E-09 | 6.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.9E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.9E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.6E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0048 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.1E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.5E-04 | 9.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.8E-06 | 6.8E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.3E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.9E-09 | 7.9E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.2E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 8.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.7E-05 | 9.7E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.1E-04 | 8.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0026 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0026 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.5E-05 | 0.015 |
| Arsenic | 0.12 | 5.0E-05 | 0.12 |
| Barium | 0.0049 | 3.8E-06 | 0.0050 |
| Beryllium | 0.043 | 8.6E-05 | 0.043 |
| Boron | 0.0031 | 5.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0025 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.8E-06 | 5.8E-06 |
| Cobalt | 0.0060 | 1.0E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.0E-05 | 9.0E-05 |
| Nickel | 0.045 | 0.0031 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.3E-06 | 0.015 |
| Silver | 0.034 | 6.0E-04 | 0.035 |
| Thallium | 0.029 | 7.0E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.2E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.8E-09 | 6.8E-09 |
| Hexachlorobenzene | 0.0021 | 7.2E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.7E-09 | 4.7E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.9E-07 | 1.9E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.8E-10 | 0.12 |
| Benzene | 0.13 | 3.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.4E-04 | 0.0058 |
| Bromoform | 0.0046 | 4.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 7.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.8E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.6E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 7.4E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.5E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0095 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.6E-04 | 9.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0030 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.9E-05 | 0.015 |
| Arsenic | 0.12 | 5.9E-05 | 0.12 |
| Barium | 0.0049 | 4.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.8E-06 | 6.8E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.1E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0037 | 0.049 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.1E-06 | 0.015 |
| Silver | 0.034 | 7.1E-04 | 0.035 |
| Thallium | 0.029 | 8.3E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.0E-09 | 8.0E-09 |
| Hexachlorobenzene | 0.0021 | 8.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.5E-09 | 5.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.2E-07 | 2.2E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.3E-10 | 0.12 |
| Benzene | 0.13 | 4.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 5.2E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 9.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 8.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.1E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.2E-05 | 4.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.5E-04 | 3.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0011 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0011 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.1E-05 | 0.015 |
| Arsenic | 0.12 | 2.2E-05 | 0.12 |
| Barium | 0.0049 | 1.6E-06 | 0.0050 |
| Beryllium | 0.043 | 3.7E-05 | 0.043 |
| Boron | 0.0031 | 2.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0011 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.5E-06 | 2.5E-06 |
| Cobalt | 0.0060 | 4.5E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.7E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 3.9E-05 | 3.9E-05 |
| Nickel | 0.045 | 0.0013 | 0.046 |
| Phosphorus | 7.3E-10 | 5.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.9E-06 | 0.015 |
| Silver | 0.034 | 2.6E-04 | 0.035 |
| Thallium | 0.029 | 3.0E-04 | 0.030 |
| Tin | 0.0015 | 6.8E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 9.0E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.3E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.7E-07 | 0.0023 |
| Fluorene[a] | - | 4.7E-08 | 4.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.7E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.7E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.9E-09 | 2.9E-09 |
| Hexachlorobenzene | 0.0021 | 3.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.0E-09 | 2.0E-09 |
| Pentachlorophenol | 8.2E-04 | 6.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.2E-08 | 8.2E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.8E-09 | 5.8E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.2E-10 | 0.12 |
| Benzene | 0.13 | 1.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.9E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.6E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.2E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.6E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.9E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.3E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.2E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.0E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0041 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.7E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 4.6E-05 | 4.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.8E-04 | 3.8E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0012 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0012 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.2E-05 | 0.015 |
| Arsenic | 0.12 | 2.4E-05 | 0.12 |
| Barium | 0.0049 | 1.8E-06 | 0.0050 |
| Beryllium | 0.043 | 4.0E-05 | 0.043 |
| Boron | 0.0031 | 2.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0012 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.7E-06 | 2.7E-06 |
| Cobalt | 0.0060 | 4.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 8.5E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.2E-05 | 4.2E-05 |
| Nickel | 0.045 | 0.0015 | 0.046 |
| Phosphorus | 7.3E-10 | 6.1E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.0E-06 | 0.015 |
| Silver | 0.034 | 2.8E-04 | 0.035 |
| Thallium | 0.029 | 3.3E-04 | 0.030 |
| Tin | 0.0015 | 7.4E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 9.8E-07 | 7.7E-04 |
| Zinc | 0.0051 | 3.4E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Hexachlorobenzene | 0.0021 | 3.4E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.0E-08 | 9.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.3E-10 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.9E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0045 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 8.5E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.8E-05 | 5.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.9E-04 | 4.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0015 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.5E-05 | 0.015 |
| Arsenic | 0.12 | 3.0E-05 | 0.12 |
| Barium | 0.0049 | 2.3E-06 | 0.0050 |
| Beryllium | 0.043 | 5.1E-05 | 0.043 |
| Boron | 0.0031 | 3.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0015 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.5E-06 | 3.5E-06 |
| Cobalt | 0.0060 | 6.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.1E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 5.4E-05 | 5.4E-05 |
| Nickel | 0.045 | 0.0019 | 0.047 |
| Phosphorus | 7.3E-10 | 7.8E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.6E-06 | 0.015 |
| Silver | 0.034 | 3.6E-04 | 0.035 |
| Thallium | 0.029 | 4.2E-04 | 0.030 |
| Tin | 0.0015 | 9.5E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.3E-06 | 7.7E-04 |
| Zinc | 0.0051 | 4.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 7.9E-07 | 0.0023 |
| Fluorene[a] | - | 6.5E-08 | 6.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.2E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 7.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.1E-09 | 4.1E-09 |
| Hexachlorobenzene | 0.0021 | 4.3E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.8E-09 | 2.8E-09 |
| Pentachlorophenol | 8.2E-04 | 8.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.1E-07 | 1.1E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 8.1E-09 | 8.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.5E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 2.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.6E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 9.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 4.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 9.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.3E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0057 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.1E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 3.8E-05 | 3.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 3.1E-04 | 3.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0010 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 1.8E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0010 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 9.6E-06 | 0.015 |
| Arsenic | 0.12 | 2.0E-05 | 0.12 |
| Barium | 0.0049 | 1.5E-06 | 0.0050 |
| Beryllium | 0.043 | 3.3E-05 | 0.043 |
| Boron | 0.0031 | 2.1E-05 | 0.0031 |
| Cadmium | 0.12 | 9.8E-04 | 0.12 |
| Chromium (hexavalent)[a] | - | 2.2E-06 | 2.2E-06 |
| Cobalt | 0.0060 | 4.0E-05 | 0.0060 |
| Lead[c] | 0.0066 | 7.0E-05 | 0.0066 |
| Mercury - Inorganic[a] | - | 3.5E-05 | 3.5E-05 |
| Nickel | 0.045 | 0.0012 | 0.046 |
| Phosphorus | 7.3E-10 | 5.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 1.7E-06 | 0.015 |
| Silver | 0.034 | 2.3E-04 | 0.035 |
| Thallium | 0.029 | 2.7E-04 | 0.030 |
| Tin | 0.0015 | 6.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 8.1E-07 | 7.7E-04 |
| Zinc | 0.0051 | 2.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.1E-07 | 0.0023 |
| Fluorene[a] | - | 4.2E-08 | 4.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.6E-09 | 2.6E-09 |
| Hexachlorobenzene | 0.0021 | 2.8E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.6E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.4E-08 | 7.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.2E-09 | 5.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.9E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.8E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.9E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.7E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.9E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.9E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.9E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.2E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0037 | 0.94 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 7.0E-05 | 0.0073 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.1E-04 | 1.1E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.1E-04 | 9.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0029 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.5E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0030 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.8E-05 | 0.015 |
| Arsenic | 0.12 | 5.7E-05 | 0.12 |
| Barium | 0.0049 | 4.3E-06 | 0.0050 |
| Beryllium | 0.043 | 9.7E-05 | 0.043 |
| Boron | 0.0031 | 6.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0028 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.5E-06 | 6.5E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.0E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.0E-04 | 1.0E-04 |
| Nickel | 0.045 | 0.0035 | 0.048 |
| Phosphorus | 7.3E-10 | 1.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.9E-06 | 0.015 |
| Silver | 0.034 | 6.8E-04 | 0.035 |
| Thallium | 0.029 | 7.9E-04 | 0.030 |
| Tin | 0.0015 | 1.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.2E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Fluorene[a] | - | 1.2E-07 | 1.2E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.3E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.3E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.3E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.6E-09 | 7.6E-09 |
| Hexachlorobenzene | 0.0021 | 8.1E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 5.3E-09 | 5.3E-09 |
| Pentachlorophenol | 8.2E-04 | 1.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.1E-07 | 2.1E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.5E-08 | 1.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 3.2E-10 | 0.12 |
| Benzene | 0.13 | 4.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.2E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.9E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 8.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.0E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.1E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.8E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.1E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.9E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.1E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 8.4E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.7E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.0E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.0E-05 | 5.0E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.2E-04 | 4.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0013 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0013 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.6E-05 | 0.12 |
| Barium | 0.0049 | 2.0E-06 | 0.0050 |
| Beryllium | 0.043 | 4.4E-05 | 0.043 |
| Boron | 0.0031 | 2.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0013 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.0E-06 | 3.0E-06 |
| Cobalt | 0.0060 | 5.4E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.2E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.6E-05 | 4.6E-05 |
| Nickel | 0.045 | 0.0016 | 0.046 |
| Phosphorus | 7.3E-10 | 6.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.2E-06 | 0.015 |
| Silver | 0.034 | 3.1E-04 | 0.035 |
| Thallium | 0.029 | 3.6E-04 | 0.030 |
| Tin | 0.0015 | 8.1E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.7E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.7E-07 | 0.0023 |
| Fluorene[a] | - | 5.6E-08 | 5.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.8E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.1E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.5E-09 | 3.5E-09 |
| Hexachlorobenzene | 0.0021 | 3.7E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorophenol | 8.2E-04 | 7.4E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.8E-08 | 9.8E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.9E-09 | 6.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 1.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.1E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.0E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.4E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.1E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0049 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.2E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.6E-05 | 7.6E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.4E-04 | 6.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0020 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.7E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0021 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.9E-05 | 0.015 |
| Arsenic | 0.12 | 4.0E-05 | 0.12 |
| Barium | 0.0049 | 3.0E-06 | 0.0050 |
| Beryllium | 0.043 | 6.7E-05 | 0.043 |
| Boron | 0.0031 | 4.3E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0020 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.5E-06 | 4.5E-06 |
| Cobalt | 0.0060 | 8.2E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.4E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.1E-05 | 7.1E-05 |
| Nickel | 0.045 | 0.0025 | 0.047 |
| Phosphorus | 7.3E-10 | 1.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.4E-06 | 0.015 |
| Silver | 0.034 | 4.7E-04 | 0.035 |
| Thallium | 0.029 | 5.5E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.0E-06 | 0.0023 |
| Fluorene[a] | - | 8.5E-08 | 8.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 8.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 9.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.3E-09 | 5.3E-09 |
| Hexachlorobenzene | 0.0021 | 5.6E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 3.7E-09 | 3.7E-09 |
| Pentachlorophenol | 8.2E-04 | 1.1E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.5E-07 | 1.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.1E-08 | 1.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.0E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.2E-10 | 0.12 |
| Benzene | 0.13 | 2.8E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 3.4E-04 | 0.0057 |
| Bromoform | 0.0046 | 3.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 6.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.4E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 7.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.2E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.2E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.5E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.3E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 7.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 5.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.2E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.6E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0075 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.4E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 5.3E-05 | 5.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 4.4E-04 | 4.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0014 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 2.0E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0014 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.3E-05 | 0.015 |
| Arsenic | 0.12 | 2.8E-05 | 0.12 |
| Barium | 0.0049 | 2.1E-06 | 0.0050 |
| Beryllium | 0.043 | 4.7E-05 | 0.043 |
| Boron | 0.0031 | 3.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0014 | 0.12 |
| Chromium (hexavalent)[a] | - | 3.2E-06 | 3.2E-06 |
| Cobalt | 0.0060 | 5.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 9.9E-05 | 0.0067 |
| Mercury - Inorganic[a] | - | 4.9E-05 | 4.9E-05 |
| Nickel | 0.045 | 0.0017 | 0.047 |
| Phosphorus | 7.3E-10 | 7.1E-13 | 7.3E-10 |
| Selenium | 0.015 | 2.4E-06 | 0.015 |
| Silver | 0.034 | 3.3E-04 | 0.035 |
| Thallium | 0.029 | 3.8E-04 | 0.030 |
| Tin | 0.0015 | 8.7E-06 | 0.0015 |
| Vanadium | 7.7E-04 | 1.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 3.9E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 7.2E-07 | 0.0023 |
| Fluorene[a] | - | 6.0E-08 | 6.0E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.7E-09 | 3.7E-09 |
| Hexachlorobenzene | 0.0021 | 3.9E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 2.6E-09 | 2.6E-09 |
| Pentachlorophenol | 8.2E-04 | 7.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.0E-07 | 1.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 7.4E-09 | 7.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.5E-10 | 0.12 |
| Benzene | 0.13 | 2.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.4E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.4E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.3E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.7E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.4E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 8.4E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.0E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.9E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 4.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 8.3E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0052 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 1.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 9.9E-05 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.2E-05 | 9.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.7E-04 | 7.7E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0024 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0025 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.3E-05 | 0.015 |
| Arsenic | 0.12 | 4.8E-05 | 0.12 |
| Barium | 0.0049 | 3.6E-06 | 0.0050 |
| Beryllium | 0.043 | 8.1E-05 | 0.043 |
| Boron | 0.0031 | 5.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0024 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.5E-06 | 5.5E-06 |
| Cobalt | 0.0060 | 9.9E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.7E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.5E-05 | 8.5E-05 |
| Nickel | 0.045 | 0.0030 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.1E-06 | 0.015 |
| Silver | 0.034 | 5.7E-04 | 0.035 |
| Thallium | 0.029 | 6.7E-04 | 0.030 |
| Tin | 0.0015 | 1.5E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.8E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.8E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 1.0E-07 | 1.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.7E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.4E-09 | 6.4E-09 |
| Hexachlorobenzene | 0.0021 | 6.8E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.5E-09 | 4.5E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.8E-07 | 1.8E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.7E-10 | 0.12 |
| Benzene | 0.13 | 3.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.2E-04 | 0.0057 |
| Bromoform | 0.0046 | 4.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.4E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 7.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.7E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.5E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.7E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.4E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.2E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 7.1E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.4E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0090 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.7E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.0E-04 | 1.0E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.5E-04 | 8.5E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.2E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0027 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.6E-05 | 0.015 |
| Arsenic | 0.12 | 5.3E-05 | 0.12 |
| Barium | 0.0049 | 4.0E-06 | 0.0050 |
| Beryllium | 0.043 | 8.9E-05 | 0.043 |
| Boron | 0.0031 | 5.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.0E-06 | 6.0E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.9E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.4E-05 | 9.4E-05 |
| Nickel | 0.045 | 0.0033 | 0.048 |
| Phosphorus | 7.3E-10 | 1.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.5E-06 | 0.015 |
| Silver | 0.034 | 6.3E-04 | 0.035 |
| Thallium | 0.029 | 7.3E-04 | 0.030 |
| Tin | 0.0015 | 1.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.2E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 140,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.1E-09 | 7.1E-09 |
| Hexachlorobenzene | 0.0021 | 7.5E-06 | 0.0021 |
| Pentachlorobenzene[a] | - | 4.9E-09 | 4.9E-09 |
| Pentachlorophenol | 8.2E-04 | 1.5E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.0E-07 | 2.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 2.9E-10 | 0.12 |
| Benzene | 0.13 | 3.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 4.6E-04 | 0.0058 |
| Bromoform | 0.0046 | 5.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 8.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.9E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.0E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.8E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.6E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.9E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.0E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 7.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.6E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.2E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0099 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.9E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

# APPENDIX I-13

Revised Inhalation Results – Normal Operations (Project Alone Case) – 400,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0036 | 0.0036 | - | 0.0051 | 0.0051 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0024 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.094 | 0.094 | - | 0.043 | 0.043 |
| Hydrogen Fluoride (HF)[ac] | - | 0.028 | 0.028 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.24 | 0.40 | 0.29 | 0.057 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.020 | 0.020 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.034 | 0.72 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0085 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.040 | 0.068 | 0.070 | 0.012 | 0.082 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.3E-04 | 0.0019 | 1.2E-04 | 1.0E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0017 | 0.024 | 0.0060 | 1.3E-04 | 0.0062 |
| Barium | 0.0040 | 3.3E-04 | 0.0043 | 8.2E-04 | 2.0E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.013 | 0.050 | 0.030 | 0.0032 | 0.033 |
| Boron[c] | 0.019 | 0.012 | 0.031 | - | - | - |
| Cadmium | 0.015 | 0.055 | 0.070 | 0.024 | 0.027 | 0.051 |
| Chromium (hexavalent)[a] | - | 0.0025 | 0.0025 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0018 | 0.0085 | - | - | - |
| Cobalt | 0.0074 | 0.023 | 0.030 | 0.0060 | 0.0055 | 0.012 |
| Lead | 0.0081 | 0.026 | 0.034 | 0.0100 | 0.0095 | 0.019 |
| Mercury - Inorganic[a] | - | 0.020 | 0.020 | - | 7.1E-04 | 7.1E-04 |
| Nickel[c] | 0.0018 | 0.011 | 0.013 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.9E-04 | 0.0039 | 3.0E-04 | 4.6E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.026 | 0.035 | 3.4E-04 | 3.2E-04 | 6.6E-04 |
| Thallium[c] | 0.0073 | 0.031 | 0.038 | - | - | - |
| Tin | 3.7E-04 | 6.9E-04 | 0.0011 | 3.0E-04 | 1.7E-04 | 4.7E-04 |
| Vanadium | 0.0075 | 0.0018 | 0.0094 | 0.0015 | 1.1E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0031 | 0.0052 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.5E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.1E-05 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 6.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.0E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.6E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.0E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 6.5E-05 | 4.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 3.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.4E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.9E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.9E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 6.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.5E-06 | 2.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.8E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.5E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.9E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0011 | 0.0059 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.7E-04 | 0.0016 | 2.8E-04 | 4.6E-05 | 3.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 5.3E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.5E-07 | 1.5E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.6E-04 | 7.7E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.1E-07 | 1.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.2E-05 | 4.6E-04 | 4.4E-05 | 9.8E-07 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.0E-07 | 2.8E-04 | 1.1E-04 | 1.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 8.9E-10 | 0.0091 | 0.0035 | 1.0E-10 | 0.0035 |
| Benzene | 0.17 | 1.4E-04 | 0.17 | 0.41 | 1.0E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0073 | 0.0094 | - | - | - |
| Bromoform | 0.0014 | 8.0E-04 | 0.0022 | 5.4E-04 | 8.7E-05 | 6.2E-04 |
| Bromomethane | 0.0018 | 2.4E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.9E-06 | 0.014 | 0.31 | 1.2E-05 | 0.31 |
| Chloroform | 0.0055 | 4.0E-06 | 0.0055 | 0.23 | 4.8E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.4E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.1E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 9.9E-06 | 2.3E-04 | 0.0058 | 7.6E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 9.8E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.9E-05 | 0.0032 | 0.0017 | 9.4E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0025 | 0.55 | 0.38 | 5.0E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.3E-06 | 7.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.2E-07 | 6.0E-05 | 0.0014 | 1.5E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.1E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.2E-07 | 3.1E-05 | 1.9E-05 | 2.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 7.2E-07 | 0.0024 | 0.045 | 3.9E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.7E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.7E-06 | 2.4E-06 | 0.0059 | 0.0041 | 0.010 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.2E-05 | 5.6E-04 | 0.0066 | 7.8E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0038 | 0.0086 | 0.0083 | 8.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0018 | 0.0097 | 0.0079 | 7.9E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.51 | 0.84 | 1.1 | 0.19 | 1.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.5E-04 | 0.027 | 0.55 | 2.2E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0021 | 0.0021 | - | 0.0022 | 0.0022 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0014 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.055 | 0.055 | - | 0.019 | 0.019 |
| Hydrogen Fluoride (HF)[ac] | - | 0.017 | 0.017 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.14 | 0.30 | 0.29 | 0.025 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.018 | 0.018 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.029 | 0.71 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0074 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.023 | 0.052 | 0.070 | 0.0053 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.5E-04 | 0.0017 | 1.2E-04 | 4.5E-06 | 1.3E-04 |
| Arsenic | 0.022 | 9.7E-04 | 0.023 | 0.0060 | 5.8E-05 | 0.0061 |
| Barium | 0.0040 | 1.9E-04 | 0.0042 | 8.2E-04 | 8.8E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0077 | 0.044 | 0.030 | 0.0014 | 0.032 |
| Boron[c] | 0.019 | 0.0070 | 0.026 | - | - | - |
| Cadmium | 0.015 | 0.032 | 0.047 | 0.024 | 0.012 | 0.036 |
| Chromium (hexavalent)[a] | - | 0.0015 | 0.0015 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0010 | 0.0078 | - | - | - |
| Cobalt | 0.0074 | 0.013 | 0.021 | 0.0060 | 0.0024 | 0.0084 |
| Lead | 0.0081 | 0.015 | 0.023 | 0.0100 | 0.0041 | 0.014 |
| Mercury - Inorganic[a] | - | 0.012 | 0.012 | - | 3.1E-04 | 3.1E-04 |
| Nickel[c] | 0.0018 | 0.0067 | 0.0085 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.1E-04 | 0.0038 | 3.0E-04 | 2.0E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.015 | 0.024 | 3.4E-04 | 1.4E-04 | 4.8E-04 |
| Thallium[c] | 0.0073 | 0.018 | 0.025 | - | - | - |
| Tin | 3.7E-04 | 4.0E-04 | 7.7E-04 | 3.0E-04 | 7.3E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 0.0011 | 0.0086 | 0.0015 | 4.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0018 | 0.0039 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 8.6E-06 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 6.7E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.5E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 9.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.5E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.8E-05 | 3.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.4E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 8.0E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.5E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.8E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.4E-06 | 1.4E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 6.9E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.8E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 8.7E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.0E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 3.3E-04 | 0.0014 | 2.8E-04 | 2.0E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.1E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 8.9E-08 | 8.9E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 9.5E-05 | 7.0E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 6.2E-08 | 6.2E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.9E-05 | 4.5E-04 | 4.4E-05 | 4.3E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 5.9E-08 | 2.8E-04 | 1.1E-04 | 5.3E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.2E-10 | 0.0091 | 0.0035 | 4.4E-11 | 0.0035 |
| Benzene | 0.17 | 8.4E-05 | 0.17 | 0.41 | 4.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0043 | 0.0064 | - | - | - |
| Bromoform | 0.0014 | 4.7E-04 | 0.0019 | 5.4E-04 | 3.8E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 1.4E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.1E-06 | 0.014 | 0.31 | 5.5E-06 | 0.31 |
| Chloroform | 0.0055 | 2.3E-06 | 0.0055 | 0.23 | 2.1E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 8.0E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.2E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 5.8E-06 | 2.3E-04 | 0.0058 | 3.3E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 4.3E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.4E-05 | 0.0032 | 0.0017 | 4.1E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0015 | 0.55 | 0.38 | 2.2E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 7.5E-07 | 7.3E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.3E-07 | 6.0E-05 | 0.0014 | 6.5E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 6.3E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 7.3E-08 | 3.1E-05 | 1.9E-05 | 9.9E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.2E-07 | 0.0024 | 0.045 | 1.7E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.0E-06 | 1.7E-06 | 0.0059 | 0.0018 | 0.0077 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.3E-05 | 5.5E-04 | 0.0066 | 3.4E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0022 | 0.0071 | 0.0083 | 3.7E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0010 | 0.0089 | 0.0079 | 3.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.30 | 0.63 | 1.1 | 0.096 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.7E-04 | 0.026 | 0.55 | 9.6E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0023 | 0.0023 | - | 0.0022 | 0.0022 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0015 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.060 | 0.060 | - | 0.018 | 0.018 |
| Hydrogen Fluoride (HF)[ac] | - | 0.018 | 0.018 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.15 | 0.31 | 0.29 | 0.025 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.019 | 0.019 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.031 | 0.71 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0079 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.025 | 0.054 | 0.070 | 0.0052 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.7E-04 | 0.0017 | 1.2E-04 | 4.5E-06 | 1.3E-04 |
| Arsenic | 0.022 | 0.0010 | 0.023 | 0.0060 | 5.7E-05 | 0.0061 |
| Barium | 0.0040 | 2.1E-04 | 0.0042 | 8.2E-04 | 8.6E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0083 | 0.045 | 0.030 | 0.0014 | 0.032 |
| Boron[c] | 0.019 | 0.0076 | 0.026 | - | - | - |
| Cadmium | 0.015 | 0.035 | 0.050 | 0.024 | 0.011 | 0.036 |
| Chromium (hexavalent)[a] | - | 0.0016 | 0.0016 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0011 | 0.0078 | - | - | - |
| Cobalt | 0.0074 | 0.014 | 0.022 | 0.0060 | 0.0024 | 0.0084 |
| Lead | 0.0081 | 0.017 | 0.025 | 0.0100 | 0.0041 | 0.014 |
| Mercury - Inorganic[a] | - | 0.012 | 0.012 | - | 3.1E-04 | 3.1E-04 |
| Nickel[c] | 0.0018 | 0.0072 | 0.0091 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.2E-04 | 0.0038 | 3.0E-04 | 2.0E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.017 | 0.025 | 3.4E-04 | 1.4E-04 | 4.8E-04 |
| Thallium[c] | 0.0073 | 0.019 | 0.027 | - | - | - |
| Tin | 3.7E-04 | 4.4E-04 | 8.1E-04 | 3.0E-04 | 7.2E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 0.0012 | 0.0087 | 0.0015 | 4.7E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0020 | 0.0041 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.3E-06 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.2E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.1E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.5E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.8E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.8E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.9E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.1E-05 | 3.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.4E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 8.7E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.8E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.2E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.6E-06 | 1.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 7.5E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.7E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.5E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 9.4E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 5.0E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.9E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 3.6E-04 | 0.0014 | 2.8E-04 | 2.0E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.3E-08 | 9.0E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 9.7E-08 | 9.7E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.0E-04 | 7.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 6.8E-08 | 6.8E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.1E-05 | 4.5E-04 | 4.4E-05 | 4.2E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.4E-08 | 2.8E-04 | 1.1E-04 | 5.3E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.6E-10 | 0.0091 | 0.0035 | 4.3E-11 | 0.0035 |
| Benzene | 0.17 | 9.1E-05 | 0.17 | 0.41 | 4.4E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0046 | 0.0067 | - | - | - |
| Bromoform | 0.0014 | 5.1E-04 | 0.0019 | 5.4E-04 | 3.8E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 1.5E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-06 | 0.014 | 0.31 | 5.4E-06 | 0.31 |
| Chloroform | 0.0055 | 2.5E-06 | 0.0055 | 0.23 | 2.1E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 8.7E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.3E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.3E-06 | 2.3E-04 | 0.0058 | 3.3E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 4.2E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-05 | 0.0032 | 0.0017 | 4.0E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0016 | 0.55 | 0.38 | 2.2E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 8.2E-07 | 7.4E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.4E-07 | 6.0E-05 | 0.0014 | 6.4E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 6.8E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 7.9E-08 | 3.1E-05 | 1.9E-05 | 9.7E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.5E-07 | 0.0024 | 0.045 | 1.7E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.1E-06 | 1.8E-06 | 0.0059 | 0.0018 | 0.0077 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.4E-05 | 5.5E-04 | 0.0066 | 3.4E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0024 | 0.0072 | 0.0083 | 3.7E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0011 | 0.0090 | 0.0079 | 3.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.32 | 0.65 | 1.1 | 0.097 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.9E-04 | 0.027 | 0.55 | 9.5E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0030 | 0.0030 | - | 0.0048 | 0.0048 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0020 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.079 | 0.079 | - | 0.040 | 0.040 |
| Hydrogen Fluoride (HF)[ac] | - | 0.024 | 0.024 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.20 | 0.36 | 0.29 | 0.054 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.032 | 0.032 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.053 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.034 | 0.062 | 0.070 | 0.011 | 0.082 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.6E-04 | 0.0018 | 1.2E-04 | 9.8E-06 | 1.3E-04 |
| Arsenic | 0.022 | 0.0014 | 0.023 | 0.0060 | 1.3E-04 | 0.0062 |
| Barium | 0.0040 | 2.8E-04 | 0.0043 | 8.2E-04 | 1.9E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.011 | 0.048 | 0.030 | 0.0030 | 0.033 |
| Boron[c] | 0.019 | 0.010 | 0.029 | - | - | - |
| Cadmium | 0.015 | 0.046 | 0.061 | 0.024 | 0.025 | 0.049 |
| Chromium (hexavalent)[a] | - | 0.0021 | 0.0021 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0015 | 0.0082 | - | - | - |
| Cobalt | 0.0074 | 0.019 | 0.027 | 0.0060 | 0.0052 | 0.011 |
| Lead | 0.0081 | 0.022 | 0.030 | 0.0100 | 0.0090 | 0.019 |
| Mercury - Inorganic[a] | - | 0.017 | 0.017 | - | 6.7E-04 | 6.7E-04 |
| Nickel[c] | 0.0018 | 0.0096 | 0.011 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.6E-04 | 0.0038 | 3.0E-04 | 4.3E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.022 | 0.030 | 3.4E-04 | 3.0E-04 | 6.4E-04 |
| Thallium[c] | 0.0073 | 0.026 | 0.033 | - | - | - |
| Tin | 3.7E-04 | 5.8E-04 | 9.5E-04 | 3.0E-04 | 1.6E-04 | 4.6E-04 |
| Vanadium | 0.0075 | 0.0015 | 0.0091 | 0.0015 | 1.0E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0026 | 0.0047 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 9.6E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.0E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.1E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.7E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.5E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.5E-05 | 4.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 3.1E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.0E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.6E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.1E-06 | 2.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.7E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.0E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 6.6E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0011 | 0.0058 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 4.8E-04 | 0.0015 | 2.8E-04 | 4.3E-05 | 3.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.4E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.3E-07 | 1.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.4E-04 | 7.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 8.9E-08 | 8.9E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.7E-05 | 4.5E-04 | 4.4E-05 | 9.3E-07 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 8.5E-08 | 2.8E-04 | 1.1E-04 | 1.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 7.5E-10 | 0.0091 | 0.0035 | 9.6E-11 | 0.0035 |
| Benzene | 0.17 | 1.2E-04 | 0.17 | 0.41 | 9.6E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0061 | 0.0082 | - | - | - |
| Bromoform | 0.0014 | 6.7E-04 | 0.0021 | 5.4E-04 | 8.3E-05 | 6.2E-04 |
| Bromomethane | 0.0018 | 2.0E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.6E-06 | 0.014 | 0.31 | 1.2E-05 | 0.31 |
| Chloroform | 0.0055 | 3.4E-06 | 0.0055 | 0.23 | 4.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.2E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.8E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 8.3E-06 | 2.3E-04 | 0.0058 | 7.2E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 9.3E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.9E-05 | 0.0032 | 0.0017 | 8.9E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0021 | 0.55 | 0.38 | 4.7E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.1E-06 | 7.7E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.9E-07 | 6.0E-05 | 0.0014 | 1.4E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 9.0E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.0E-07 | 3.1E-05 | 1.9E-05 | 2.1E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.0E-07 | 0.0024 | 0.045 | 3.7E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.6E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.4E-06 | 2.2E-06 | 0.0059 | 0.0039 | 0.0098 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.8E-05 | 5.5E-04 | 0.0066 | 7.4E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0032 | 0.0080 | 0.0083 | 8.0E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0015 | 0.0094 | 0.0079 | 7.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.43 | 0.76 | 1.1 | 0.20 | 1.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 3.9E-04 | 0.027 | 0.55 | 2.1E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0045 | 0.0045 | - | 0.0063 | 0.0063 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0029 | 0.072 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.12 | 0.12 | - | 0.053 | 0.053 |
| Hydrogen Fluoride (HF)[ac] | - | 0.035 | 0.035 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.30 | 0.46 | 0.29 | 0.071 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.034 | 0.034 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.057 | 0.74 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.014 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.050 | 0.078 | 0.070 | 0.015 | 0.085 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 5.4E-04 | 0.0020 | 1.2E-04 | 1.3E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0021 | 0.024 | 0.0060 | 1.6E-04 | 0.0062 |
| Barium | 0.0040 | 4.1E-04 | 0.0044 | 8.2E-04 | 2.5E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.016 | 0.053 | 0.030 | 0.0039 | 0.034 |
| Boron[c] | 0.019 | 0.015 | 0.034 | - | - | - |
| Cadmium | 0.015 | 0.069 | 0.083 | 0.024 | 0.033 | 0.057 |
| Chromium (hexavalent)[a] | - | 0.0031 | 0.0031 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0022 | 0.0089 | - | - | - |
| Cobalt | 0.0074 | 0.028 | 0.036 | 0.0060 | 0.0068 | 0.013 |
| Lead | 0.0081 | 0.033 | 0.041 | 0.0100 | 0.012 | 0.022 |
| Mercury - Inorganic[a] | - | 0.024 | 0.024 | - | 8.8E-04 | 8.8E-04 |
| Nickel[c] | 0.0018 | 0.014 | 0.016 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 2.4E-04 | 0.0039 | 3.0E-04 | 5.6E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.033 | 0.041 | 3.4E-04 | 3.9E-04 | 7.3E-04 |
| Thallium[c] | 0.0073 | 0.038 | 0.046 | - | - | - |
| Tin | 3.7E-04 | 8.6E-04 | 0.0012 | 3.0E-04 | 2.1E-04 | 5.1E-04 |
| Vanadium | 0.0075 | 0.0023 | 0.0098 | 0.0015 | 1.4E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0039 | 0.0060 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.8E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.4E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 8.0E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 7.5E-06 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 5.4E-05 | 7.1E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.7E-05 | 7.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 8.1E-05 | 4.3E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 4.0E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 7.4E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 8.2E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 3.1E-06 | 3.1E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.5E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.2E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 3.0E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 9.8E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0014 | 0.0062 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 7.1E-04 | 0.0017 | 2.8E-04 | 5.6E-05 | 3.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 6.6E-08 | 9.3E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.9E-07 | 1.9E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.0E-04 | 8.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.3E-07 | 1.3E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 4.0E-05 | 4.7E-04 | 4.4E-05 | 1.2E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.3E-07 | 2.8E-04 | 1.1E-04 | 1.5E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.1E-09 | 0.0091 | 0.0035 | 1.2E-10 | 0.0035 |
| Benzene | 0.17 | 1.8E-04 | 0.17 | 0.41 | 1.3E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0091 | 0.011 | - | - | - |
| Bromoform | 0.0014 | 9.9E-04 | 0.0024 | 5.4E-04 | 1.1E-04 | 6.4E-04 |
| Bromomethane | 0.0018 | 2.9E-04 | 0.0021 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.4E-06 | 0.014 | 0.31 | 1.5E-05 | 0.31 |
| Chloroform | 0.0055 | 5.0E-06 | 0.0055 | 0.23 | 6.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.7E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.6E-06 | 3.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.2E-05 | 2.3E-04 | 0.0058 | 9.4E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 1.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 7.3E-05 | 0.0032 | 0.0017 | 1.2E-05 | 0.0017 |
| Formaldehyde | 0.55 | 0.0031 | 0.55 | 0.38 | 6.2E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.6E-06 | 8.2E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.8E-07 | 6.0E-05 | 0.0014 | 1.8E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.3E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.6E-07 | 3.1E-05 | 1.9E-05 | 2.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 8.9E-07 | 0.0024 | 0.045 | 4.8E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 3.4E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 2.1E-06 | 2.9E-06 | 0.0059 | 0.0051 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.7E-05 | 5.6E-04 | 0.0066 | 9.7E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0047 | 0.0096 | 0.0083 | 1.0E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0022 | 0.010 | 0.0079 | 9.7E-05 | 0.0080 |
| Respiratory Irritants | 0.33 | 0.64 | 0.96 | 1.1 | 0.25 | 1.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 5.8E-04 | 0.027 | 0.55 | 2.7E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0035 | 0.0035 | - | 0.0059 | 0.0059 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0023 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.091 | 0.091 | - | 0.049 | 0.049 |
| Hydrogen Fluoride (HF)[ac] | - | 0.027 | 0.027 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.23 | 0.39 | 0.29 | 0.066 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.032 | 0.032 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.053 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.039 | 0.067 | 0.070 | 0.014 | 0.084 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 4.2E-04 | 0.0019 | 1.2E-04 | 1.2E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0016 | 0.024 | 0.0060 | 1.5E-04 | 0.0062 |
| Barium | 0.0040 | 3.2E-04 | 0.0043 | 8.2E-04 | 2.3E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.013 | 0.049 | 0.030 | 0.0036 | 0.034 |
| Boron[c] | 0.019 | 0.012 | 0.030 | - | - | - |
| Cadmium | 0.015 | 0.053 | 0.068 | 0.024 | 0.031 | 0.055 |
| Chromium (hexavalent)[a] | - | 0.0024 | 0.0024 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0017 | 0.0084 | - | - | - |
| Cobalt | 0.0074 | 0.022 | 0.029 | 0.0060 | 0.0063 | 0.012 |
| Lead | 0.0081 | 0.025 | 0.033 | 0.0100 | 0.011 | 0.021 |
| Mercury - Inorganic[a] | - | 0.019 | 0.019 | - | 8.2E-04 | 8.2E-04 |
| Nickel[c] | 0.0018 | 0.011 | 0.013 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.8E-04 | 0.0039 | 3.0E-04 | 5.3E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.025 | 0.034 | 3.4E-04 | 3.7E-04 | 7.1E-04 |
| Thallium[c] | 0.0073 | 0.030 | 0.037 | - | - | - |
| Tin | 3.7E-04 | 6.7E-04 | 0.0010 | 3.0E-04 | 1.9E-04 | 4.9E-04 |
| Vanadium | 0.0075 | 0.0018 | 0.0093 | 0.0015 | 1.3E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0030 | 0.0051 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.4E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.1E-05 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 6.2E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.3E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 5.8E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.5E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.2E-05 | 7.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.9E-05 | 6.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 6.3E-05 | 4.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 3.8E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.3E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 5.7E-06 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.8E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 6.3E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.4E-06 | 2.4E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 2.3E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 7.6E-05 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0013 | 0.0061 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 5.5E-04 | 0.0016 | 2.8E-04 | 5.3E-05 | 3.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 5.1E-08 | 9.1E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.5E-07 | 1.5E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.6E-04 | 7.7E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.0E-07 | 1.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.1E-05 | 4.6E-04 | 4.4E-05 | 1.1E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 9.8E-08 | 2.8E-04 | 1.1E-04 | 1.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 8.6E-10 | 0.0091 | 0.0035 | 1.2E-10 | 0.0035 |
| Benzene | 0.17 | 1.4E-04 | 0.17 | 0.41 | 1.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0071 | 0.0092 | - | - | - |
| Bromoform | 0.0014 | 7.7E-04 | 0.0022 | 5.4E-04 | 1.0E-04 | 6.4E-04 |
| Bromomethane | 0.0018 | 2.3E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.9E-06 | 0.014 | 0.31 | 1.4E-05 | 0.31 |
| Chloroform | 0.0055 | 3.9E-06 | 0.0055 | 0.23 | 5.6E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.0E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 9.6E-06 | 2.3E-04 | 0.0058 | 8.8E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 1.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 5.7E-05 | 0.0032 | 0.0017 | 1.1E-05 | 0.0017 |
| Formaldehyde | 0.55 | 0.0024 | 0.55 | 0.38 | 5.8E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.2E-06 | 7.8E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.2E-07 | 6.0E-05 | 0.0014 | 1.7E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.0E-06 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.2E-07 | 3.1E-05 | 1.9E-05 | 2.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 6.9E-07 | 0.0024 | 0.045 | 4.5E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 3.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.7E-06 | 2.4E-06 | 0.0059 | 0.0048 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.1E-05 | 5.5E-04 | 0.0066 | 9.1E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0037 | 0.0085 | 0.0083 | 9.8E-05 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0017 | 0.0096 | 0.0079 | 9.1E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.49 | 0.82 | 1.1 | 0.23 | 1.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 4.5E-04 | 0.027 | 0.55 | 2.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 8.0E-04 | 8.0E-04 | - | 0.0018 | 0.0018 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.2E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.021 | 0.021 | - | 0.015 | 0.015 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0063 | 0.0063 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.053 | 0.21 | 0.29 | 0.020 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.012 | 0.012 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.020 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0049 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0089 | 0.037 | 0.070 | 0.0043 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.6E-05 | 0.0016 | 1.2E-04 | 3.7E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.7E-04 | 0.022 | 0.0060 | 4.7E-05 | 0.0061 |
| Barium | 0.0040 | 7.4E-05 | 0.0041 | 8.2E-04 | 7.1E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0029 | 0.040 | 0.030 | 0.0011 | 0.031 |
| Boron[c] | 0.019 | 0.0027 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.012 | 0.027 | 0.024 | 0.0094 | 0.034 |
| Chromium (hexavalent)[a] | - | 5.6E-04 | 5.6E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 3.9E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0051 | 0.012 | 0.0060 | 0.0020 | 0.0080 |
| Lead | 0.0081 | 0.0058 | 0.014 | 0.0100 | 0.0034 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0044 | 0.0044 | - | 2.5E-04 | 2.5E-04 |
| Nickel[c] | 0.0018 | 0.0025 | 0.0044 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.2E-05 | 0.0037 | 3.0E-04 | 1.6E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0058 | 0.014 | 3.4E-04 | 1.1E-04 | 4.5E-04 |
| Thallium[c] | 0.0073 | 0.0068 | 0.014 | - | - | - |
| Tin | 3.7E-04 | 1.5E-04 | 5.2E-04 | 3.0E-04 | 5.9E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 4.1E-04 | 0.0080 | 0.0015 | 3.9E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.0E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.2E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.5E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.2E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.5E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 9.6E-06 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.6E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.4E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.0E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.2E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.5E-07 | 5.5E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.6E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.3E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.3E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.0E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.3E-04 | 0.0011 | 2.8E-04 | 1.6E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.4E-08 | 3.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.6E-05 | 6.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.4E-08 | 2.4E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.2E-06 | 4.3E-04 | 4.4E-05 | 3.5E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.2E-08 | 2.8E-04 | 1.1E-04 | 4.3E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.0E-10 | 0.0091 | 0.0035 | 3.6E-11 | 0.0035 |
| Benzene | 0.17 | 3.2E-05 | 0.17 | 0.41 | 3.6E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0016 | 0.0037 | - | - | - |
| Bromoform | 0.0014 | 1.8E-04 | 0.0016 | 5.4E-04 | 3.1E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 5.2E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.2E-07 | 0.014 | 0.31 | 4.4E-06 | 0.31 |
| Chloroform | 0.0055 | 8.9E-07 | 0.0055 | 0.23 | 1.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.0E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.7E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.2E-06 | 2.2E-04 | 0.0058 | 2.7E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 3.5E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.3E-05 | 0.0032 | 0.0017 | 3.3E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.5E-04 | 0.55 | 0.38 | 1.8E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.9E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.9E-08 | 6.0E-05 | 0.0014 | 5.3E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.4E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.8E-08 | 3.1E-05 | 1.9E-05 | 8.0E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-07 | 0.0024 | 0.045 | 1.4E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.7E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.8E-07 | 1.1E-06 | 0.0059 | 0.0015 | 0.0074 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.8E-06 | 5.4E-04 | 0.0066 | 2.8E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 8.4E-04 | 0.0057 | 0.0083 | 3.0E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.0E-04 | 0.0083 | 0.0079 | 2.8E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.11 | 0.44 | 1.1 | 0.074 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.0E-04 | 0.026 | 0.55 | 7.8E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 8.3E-04 | 8.3E-04 | - | 0.0019 | 0.0019 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.4E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.022 | 0.022 | - | 0.015 | 0.015 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0065 | 0.0065 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.055 | 0.22 | 0.29 | 0.021 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.013 | 0.013 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.022 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0054 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0092 | 0.037 | 0.070 | 0.0044 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.9E-05 | 0.0016 | 1.2E-04 | 3.8E-06 | 1.2E-04 |
| Arsenic | 0.022 | 3.8E-04 | 0.022 | 0.0060 | 4.8E-05 | 0.0061 |
| Barium | 0.0040 | 7.7E-05 | 0.0041 | 8.2E-04 | 7.3E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0030 | 0.040 | 0.030 | 0.0011 | 0.031 |
| Boron[c] | 0.019 | 0.0028 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.027 | 0.024 | 0.0096 | 0.034 |
| Chromium (hexavalent)[a] | - | 5.8E-04 | 5.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.1E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0053 | 0.013 | 0.0060 | 0.0020 | 0.0080 |
| Lead | 0.0081 | 0.0060 | 0.014 | 0.0100 | 0.0034 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0045 | 0.0045 | - | 2.6E-04 | 2.6E-04 |
| Nickel[c] | 0.0018 | 0.0026 | 0.0045 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.4E-05 | 0.0037 | 3.0E-04 | 1.7E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0061 | 0.014 | 3.4E-04 | 1.2E-04 | 4.6E-04 |
| Thallium[c] | 0.0073 | 0.0071 | 0.014 | - | - | - |
| Tin | 3.7E-04 | 1.6E-04 | 5.3E-04 | 3.0E-04 | 6.1E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 4.2E-04 | 0.0080 | 0.0015 | 4.0E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.2E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.4E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.6E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.4E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.7E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.9E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.5E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.2E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.5E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.7E-07 | 5.7E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.7E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.5E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.4E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.8E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.1E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.3E-04 | 0.0012 | 2.8E-04 | 1.7E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.5E-08 | 3.5E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.7E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.5E-08 | 2.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.5E-06 | 4.3E-04 | 4.4E-05 | 3.6E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.3E-08 | 2.8E-04 | 1.1E-04 | 4.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.0E-10 | 0.0091 | 0.0035 | 3.7E-11 | 0.0035 |
| Benzene | 0.17 | 3.3E-05 | 0.17 | 0.41 | 3.7E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0017 | 0.0038 | - | - | - |
| Bromoform | 0.0014 | 1.8E-04 | 0.0016 | 5.4E-04 | 3.2E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 5.4E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.4E-07 | 0.014 | 0.31 | 4.5E-06 | 0.31 |
| Chloroform | 0.0055 | 9.2E-07 | 0.0055 | 0.23 | 1.8E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.2E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.9E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.3E-06 | 2.2E-04 | 0.0058 | 2.8E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 3.6E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.3E-05 | 0.0032 | 0.0017 | 3.4E-06 | 0.0017 |
| Formaldehyde | 0.55 | 5.7E-04 | 0.55 | 0.38 | 1.8E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.0E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.1E-08 | 6.0E-05 | 0.0014 | 5.4E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.9E-08 | 3.1E-05 | 1.9E-05 | 8.2E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-07 | 0.0024 | 0.045 | 1.4E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.9E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.0E-07 | 1.1E-06 | 0.0059 | 0.0015 | 0.0074 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.0E-06 | 5.4E-04 | 0.0066 | 2.8E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 8.8E-04 | 0.0057 | 0.0083 | 3.1E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.1E-04 | 0.0083 | 0.0079 | 2.9E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.45 | 1.1 | 0.077 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 8.0E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 1.0E-03 | 1.0E-03 | - | 0.0022 | 0.0022 |
| Carbon Monoxide (CO)[c] | 0.069 | 6.6E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.026 | 0.026 | - | 0.018 | 0.018 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0079 | 0.0079 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.066 | 0.23 | 0.29 | 0.024 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.011 | 0.011 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.018 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0044 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.011 | 0.039 | 0.070 | 0.0051 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.2E-04 | 0.0016 | 1.2E-04 | 4.4E-06 | 1.3E-04 |
| Arsenic | 0.022 | 4.6E-04 | 0.022 | 0.0060 | 5.6E-05 | 0.0061 |
| Barium | 0.0040 | 9.3E-05 | 0.0041 | 8.2E-04 | 8.4E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0036 | 0.040 | 0.030 | 0.0013 | 0.032 |
| Boron[c] | 0.019 | 0.0033 | 0.022 | - | - | - |
| Cadmium | 0.015 | 0.015 | 0.030 | 0.024 | 0.011 | 0.035 |
| Chromium (hexavalent)[a] | - | 7.0E-04 | 7.0E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.9E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0063 | 0.014 | 0.0060 | 0.0023 | 0.0084 |
| Lead | 0.0081 | 0.0073 | 0.015 | 0.0100 | 0.0040 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0055 | 0.0055 | - | 3.0E-04 | 3.0E-04 |
| Nickel[c] | 0.0018 | 0.0032 | 0.0050 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.3E-05 | 0.0037 | 3.0E-04 | 1.9E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0073 | 0.016 | 3.4E-04 | 1.3E-04 | 4.8E-04 |
| Thallium[c] | 0.0073 | 0.0085 | 0.016 | - | - | - |
| Tin | 3.7E-04 | 1.9E-04 | 5.6E-04 | 3.0E-04 | 7.0E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 5.1E-04 | 0.0081 | 0.0015 | 4.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 8.7E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.1E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.2E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.8E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.6E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.7E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.4E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 8.3E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.8E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.4E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.8E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.7E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.3E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.8E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.9E-07 | 6.9E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.3E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.5E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.6E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 4.1E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.2E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.8E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.6E-04 | 0.0012 | 2.8E-04 | 1.9E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.5E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.3E-08 | 4.3E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.5E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.0E-08 | 3.0E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 9.0E-06 | 4.4E-04 | 4.4E-05 | 4.1E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.8E-08 | 2.8E-04 | 1.1E-04 | 5.1E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.5E-10 | 0.0091 | 0.0035 | 4.2E-11 | 0.0035 |
| Benzene | 0.17 | 4.0E-05 | 0.17 | 0.41 | 4.3E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0020 | 0.0041 | - | - | - |
| Bromoform | 0.0014 | 2.2E-04 | 0.0017 | 5.4E-04 | 3.7E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 6.6E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 5.3E-07 | 0.014 | 0.31 | 5.3E-06 | 0.31 |
| Chloroform | 0.0055 | 1.1E-06 | 0.0055 | 0.23 | 2.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.8E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.9E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.8E-06 | 2.2E-04 | 0.0058 | 3.2E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 4.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.6E-05 | 0.0032 | 0.0017 | 4.0E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.9E-04 | 0.55 | 0.38 | 2.1E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.6E-07 | 7.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 6.2E-08 | 6.0E-05 | 0.0014 | 6.3E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.0E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.5E-08 | 3.1E-05 | 1.9E-05 | 9.5E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.0E-07 | 0.0024 | 0.045 | 1.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.8E-07 | 1.2E-06 | 0.0059 | 0.0017 | 0.0076 |
| Xylenes, m-, p- and o- | 5.3E-04 | 6.0E-06 | 5.4E-04 | 0.0066 | 3.3E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0011 | 0.0059 | 0.0083 | 3.6E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 5.0E-04 | 0.0084 | 0.0079 | 3.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.14 | 0.47 | 1.1 | 0.082 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.3E-04 | 0.026 | 0.55 | 9.2E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0018 | 0.0018 | - | 0.0024 | 0.0024 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0012 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.048 | 0.048 | - | 0.020 | 0.020 |
| Hydrogen Fluoride (HF)[ac] | - | 0.015 | 0.015 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.12 | 0.28 | 0.29 | 0.027 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.019 | 0.019 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.032 | 0.71 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0081 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.020 | 0.049 | 0.070 | 0.0056 | 0.076 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.2E-04 | 0.0017 | 1.2E-04 | 4.8E-06 | 1.3E-04 |
| Arsenic | 0.022 | 8.5E-04 | 0.023 | 0.0060 | 6.1E-05 | 0.0061 |
| Barium | 0.0040 | 1.7E-04 | 0.0042 | 8.2E-04 | 9.3E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0067 | 0.044 | 0.030 | 0.0015 | 0.032 |
| Boron[c] | 0.019 | 0.0062 | 0.025 | - | - | - |
| Cadmium | 0.015 | 0.028 | 0.043 | 0.024 | 0.012 | 0.036 |
| Chromium (hexavalent)[a] | - | 0.0013 | 0.0013 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 9.1E-04 | 0.0076 | - | - | - |
| Cobalt | 0.0074 | 0.012 | 0.019 | 0.0060 | 0.0025 | 0.0086 |
| Lead | 0.0081 | 0.013 | 0.022 | 0.0100 | 0.0044 | 0.014 |
| Mercury - Inorganic[a] | - | 0.010 | 0.010 | - | 3.3E-04 | 3.3E-04 |
| Nickel[c] | 0.0018 | 0.0059 | 0.0077 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 9.7E-05 | 0.0038 | 3.0E-04 | 2.1E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.014 | 0.022 | 3.4E-04 | 1.5E-04 | 4.9E-04 |
| Thallium[c] | 0.0073 | 0.016 | 0.023 | - | - | - |
| Tin | 3.7E-04 | 3.6E-04 | 7.2E-04 | 3.0E-04 | 7.7E-05 | 3.8E-04 |
| Vanadium | 0.0075 | 9.4E-04 | 0.0085 | 0.0015 | 5.1E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0016 | 0.0037 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 7.5E-06 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.9E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.3E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.2E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.1E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 8.2E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.2E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.5E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.3E-05 | 3.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.5E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 7.0E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.0E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 9.8E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.4E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.3E-06 | 1.3E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 6.1E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 8.2E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.2E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 7.6E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 5.3E-04 | 0.0053 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.9E-04 | 0.0013 | 2.8E-04 | 2.1E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.7E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.9E-08 | 7.9E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 8.3E-05 | 6.9E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.5E-08 | 5.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.7E-05 | 4.4E-04 | 4.4E-05 | 4.5E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 5.2E-08 | 2.8E-04 | 1.1E-04 | 5.6E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.6E-10 | 0.0091 | 0.0035 | 4.7E-11 | 0.0035 |
| Benzene | 0.17 | 7.4E-05 | 0.17 | 0.41 | 4.7E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0037 | 0.0059 | - | - | - |
| Bromoform | 0.0014 | 4.1E-04 | 0.0018 | 5.4E-04 | 4.0E-05 | 5.8E-04 |
| Bromomethane | 0.0018 | 1.2E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 9.8E-07 | 0.014 | 0.31 | 5.8E-06 | 0.31 |
| Chloroform | 0.0055 | 2.1E-06 | 0.0055 | 0.23 | 2.2E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 7.0E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.1E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 5.1E-06 | 2.3E-04 | 0.0058 | 3.5E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 4.5E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.0E-05 | 0.0032 | 0.0017 | 4.3E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0013 | 0.55 | 0.38 | 2.3E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 6.6E-07 | 7.3E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.1E-07 | 6.0E-05 | 0.0014 | 6.9E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 6.4E-08 | 3.1E-05 | 1.9E-05 | 1.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.7E-07 | 0.0024 | 0.045 | 1.8E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 8.8E-07 | 1.6E-06 | 0.0059 | 0.0019 | 0.0078 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.1E-05 | 5.5E-04 | 0.0066 | 3.6E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0020 | 0.0068 | 0.0083 | 3.9E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 9.2E-04 | 0.0088 | 0.0079 | 3.6E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.26 | 0.59 | 1.1 | 0.10 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.4E-04 | 0.026 | 0.55 | 1.0E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0029 | 0.0029 | - | 0.0061 | 0.0061 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0019 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.076 | 0.076 | - | 0.051 | 0.051 |
| Hydrogen Fluoride (HF)[ac] | - | 0.023 | 0.023 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.19 | 0.35 | 0.29 | 0.068 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.030 | 0.030 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.050 | 0.73 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.013 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.032 | 0.060 | 0.070 | 0.014 | 0.084 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 3.5E-04 | 0.0018 | 1.2E-04 | 1.2E-05 | 1.3E-04 |
| Arsenic | 0.022 | 0.0013 | 0.023 | 0.0060 | 1.6E-04 | 0.0062 |
| Barium | 0.0040 | 2.7E-04 | 0.0043 | 8.2E-04 | 2.4E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.011 | 0.047 | 0.030 | 0.0037 | 0.034 |
| Boron[c] | 0.019 | 0.0097 | 0.028 | - | - | - |
| Cadmium | 0.015 | 0.044 | 0.059 | 0.024 | 0.031 | 0.056 |
| Chromium (hexavalent)[a] | - | 0.0020 | 0.0020 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0014 | 0.0081 | - | - | - |
| Cobalt | 0.0074 | 0.018 | 0.026 | 0.0060 | 0.0065 | 0.013 |
| Lead | 0.0081 | 0.021 | 0.029 | 0.0100 | 0.011 | 0.021 |
| Mercury - Inorganic[a] | - | 0.016 | 0.016 | - | 8.4E-04 | 8.4E-04 |
| Nickel[c] | 0.0018 | 0.0092 | 0.011 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.5E-04 | 0.0038 | 3.0E-04 | 5.4E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.021 | 0.029 | 3.4E-04 | 3.8E-04 | 7.2E-04 |
| Thallium[c] | 0.0073 | 0.025 | 0.032 | - | - | - |
| Tin | 3.7E-04 | 5.6E-04 | 9.2E-04 | 3.0E-04 | 2.0E-04 | 5.0E-04 |
| Vanadium | 0.0075 | 0.0015 | 0.0090 | 0.0015 | 1.3E-04 | 0.0017 |
| Zinc[c] | 0.0021 | 0.0025 | 0.0046 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 9.2E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.1E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.9E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.8E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.5E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.4E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.2E-05 | 4.0E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 3.9E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.8E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.3E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 2.0E-06 | 2.0E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 9.5E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 2.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.9E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 6.3E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0013 | 0.0061 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 4.6E-04 | 0.0015 | 2.8E-04 | 5.4E-05 | 3.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.2E-08 | 9.0E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.2E-07 | 1.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.3E-04 | 7.4E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 8.5E-08 | 8.5E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.6E-05 | 4.5E-04 | 4.4E-05 | 1.2E-06 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 8.1E-08 | 2.8E-04 | 1.1E-04 | 1.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 7.1E-10 | 0.0091 | 0.0035 | 1.2E-10 | 0.0035 |
| Benzene | 0.17 | 1.2E-04 | 0.17 | 0.41 | 1.2E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0058 | 0.0080 | - | - | - |
| Bromoform | 0.0014 | 6.4E-04 | 0.0021 | 5.4E-04 | 1.0E-04 | 6.4E-04 |
| Bromomethane | 0.0018 | 1.9E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.5E-06 | 0.014 | 0.31 | 1.5E-05 | 0.31 |
| Chloroform | 0.0055 | 3.2E-06 | 0.0055 | 0.23 | 5.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.7E-06 | 3.1E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.9E-06 | 2.3E-04 | 0.0058 | 9.0E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 1.2E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.7E-05 | 0.0032 | 0.0017 | 1.1E-05 | 0.0017 |
| Formaldehyde | 0.55 | 0.0020 | 0.55 | 0.38 | 5.9E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.0E-06 | 7.6E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.8E-07 | 6.0E-05 | 0.0014 | 1.8E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 8.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.0E-07 | 3.1E-05 | 1.9E-05 | 2.7E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.7E-07 | 0.0024 | 0.045 | 4.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 3.2E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.4E-06 | 2.1E-06 | 0.0059 | 0.0049 | 0.011 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.7E-05 | 5.5E-04 | 0.0066 | 9.3E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0031 | 0.0079 | 0.0083 | 1.0E-04 | 0.0084 |
| Nasal Irritants | 0.0079 | 0.0014 | 0.0093 | 0.0079 | 9.3E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.41 | 0.74 | 1.1 | 0.23 | 1.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 3.7E-04 | 0.027 | 0.55 | 2.6E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 9.7E-04 | 9.7E-04 | - | 0.0018 | 0.0018 |
| Carbon Monoxide (CO)[c] | 0.069 | 6.4E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.026 | 0.026 | - | 0.015 | 0.015 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0077 | 0.0077 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.064 | 0.23 | 0.29 | 0.021 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.014 | 0.014 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.023 | 0.70 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0058 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.011 | 0.039 | 0.070 | 0.0043 | 0.074 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.2E-04 | 0.0016 | 1.2E-04 | 3.7E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.5E-04 | 0.022 | 0.0060 | 4.8E-05 | 0.0061 |
| Barium | 0.0040 | 9.0E-05 | 0.0041 | 8.2E-04 | 7.2E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0035 | 0.040 | 0.030 | 0.0011 | 0.031 |
| Boron[c] | 0.019 | 0.0033 | 0.022 | - | - | - |
| Cadmium | 0.015 | 0.015 | 0.030 | 0.024 | 0.0095 | 0.034 |
| Chromium (hexavalent)[a] | - | 6.8E-04 | 6.8E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.8E-04 | 0.0072 | - | - | - |
| Cobalt | 0.0074 | 0.0062 | 0.014 | 0.0060 | 0.0020 | 0.0080 |
| Lead | 0.0081 | 0.0071 | 0.015 | 0.0100 | 0.0034 | 0.013 |
| Mercury - Inorganic[a] | - | 0.0053 | 0.0053 | - | 2.6E-04 | 2.6E-04 |
| Nickel[c] | 0.0018 | 0.0031 | 0.0049 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 5.1E-05 | 0.0037 | 3.0E-04 | 1.6E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0071 | 0.015 | 3.4E-04 | 1.1E-04 | 4.6E-04 |
| Thallium[c] | 0.0073 | 0.0083 | 0.016 | - | - | - |
| Tin | 3.7E-04 | 1.9E-04 | 5.5E-04 | 3.0E-04 | 6.0E-05 | 3.6E-04 |
| Vanadium | 0.0075 | 4.9E-04 | 0.0080 | 0.0015 | 4.0E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 8.5E-04 | 0.0029 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.0E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.1E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 6.4E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.6E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 4.3E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 8.0E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.8E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.7E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.6E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 5.1E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.8E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 6.7E-07 | 6.7E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.2E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.4E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 6.4E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 4.0E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.1E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.1E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.5E-04 | 0.0012 | 2.8E-04 | 1.6E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.4E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.1E-08 | 4.1E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 4.4E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.9E-08 | 2.9E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 8.8E-06 | 4.4E-04 | 4.4E-05 | 3.5E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.7E-08 | 2.8E-04 | 1.1E-04 | 4.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.4E-10 | 0.0091 | 0.0035 | 3.6E-11 | 0.0035 |
| Benzene | 0.17 | 3.9E-05 | 0.17 | 0.41 | 3.6E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0020 | 0.0041 | - | - | - |
| Bromoform | 0.0014 | 2.2E-04 | 0.0017 | 5.4E-04 | 3.1E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 6.4E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 5.2E-07 | 0.014 | 0.31 | 4.5E-06 | 0.31 |
| Chloroform | 0.0055 | 1.1E-06 | 0.0055 | 0.23 | 1.7E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.7E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.7E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.7E-06 | 2.2E-04 | 0.0058 | 2.7E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 3.5E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.6E-05 | 0.0032 | 0.0017 | 3.4E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.7E-04 | 0.55 | 0.38 | 1.8E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.5E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 6.0E-08 | 6.0E-05 | 0.0014 | 5.4E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.9E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.4E-08 | 3.1E-05 | 1.9E-05 | 8.1E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.9E-07 | 0.0024 | 0.045 | 1.4E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.8E-07 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.6E-07 | 1.2E-06 | 0.0059 | 0.0015 | 0.0074 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.8E-06 | 5.4E-04 | 0.0066 | 2.8E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0010 | 0.0059 | 0.0083 | 3.0E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.8E-04 | 0.0084 | 0.0079 | 2.8E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.14 | 0.47 | 1.1 | 0.078 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.3E-04 | 0.026 | 0.55 | 7.9E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0015 | 0.0015 | - | 0.0035 | 0.0035 |
| Carbon Monoxide (CO)[c] | 0.069 | 9.8E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.039 | 0.039 | - | 0.029 | 0.029 |
| Hydrogen Fluoride (HF)[ac] | - | 0.012 | 0.012 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.099 | 0.26 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.015 | 0.015 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.025 | 0.71 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0062 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.017 | 0.045 | 0.070 | 0.0083 | 0.078 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.8E-04 | 0.0016 | 1.2E-04 | 7.1E-06 | 1.3E-04 |
| Arsenic | 0.022 | 6.9E-04 | 0.023 | 0.0060 | 9.1E-05 | 0.0061 |
| Barium | 0.0040 | 1.4E-04 | 0.0041 | 8.2E-04 | 1.4E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0055 | 0.042 | 0.030 | 0.0022 | 0.032 |
| Boron[c] | 0.019 | 0.0050 | 0.024 | - | - | - |
| Cadmium | 0.015 | 0.023 | 0.038 | 0.024 | 0.018 | 0.042 |
| Chromium (hexavalent)[a] | - | 0.0010 | 0.0010 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 7.4E-04 | 0.0075 | - | - | - |
| Cobalt | 0.0074 | 0.0095 | 0.017 | 0.0060 | 0.0038 | 0.0098 |
| Lead | 0.0081 | 0.011 | 0.019 | 0.0100 | 0.0065 | 0.016 |
| Mercury - Inorganic[a] | - | 0.0082 | 0.0082 | - | 4.9E-04 | 4.9E-04 |
| Nickel[c] | 0.0018 | 0.0048 | 0.0066 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.9E-05 | 0.0038 | 3.0E-04 | 3.1E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.011 | 0.019 | 3.4E-04 | 2.2E-04 | 5.6E-04 |
| Thallium[c] | 0.0073 | 0.013 | 0.020 | - | - | - |
| Tin | 3.7E-04 | 2.9E-04 | 6.6E-04 | 3.0E-04 | 1.1E-04 | 4.2E-04 |
| Vanadium | 0.0075 | 7.6E-04 | 0.0083 | 0.0015 | 7.6E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0013 | 0.0034 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.1E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.7E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.7E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.8E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.5E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.6E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.8E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.7E-05 | 3.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 2.2E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.7E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.5E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.9E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.7E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.0E-06 | 1.0E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.9E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 9.9E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.2E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.3E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 7.8E-04 | 0.0055 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 2.4E-04 | 0.0013 | 2.8E-04 | 3.1E-05 | 3.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.2E-08 | 8.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.4E-08 | 6.4E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.7E-05 | 6.8E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.4E-08 | 4.4E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-05 | 4.4E-04 | 4.4E-05 | 6.7E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.2E-08 | 2.8E-04 | 1.1E-04 | 8.4E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.7E-10 | 0.0091 | 0.0035 | 6.9E-11 | 0.0035 |
| Benzene | 0.17 | 6.0E-05 | 0.17 | 0.41 | 7.0E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0030 | 0.0052 | - | - | - |
| Bromoform | 0.0014 | 3.3E-04 | 0.0018 | 5.4E-04 | 6.0E-05 | 6.0E-04 |
| Bromomethane | 0.0018 | 9.8E-05 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.0E-07 | 0.014 | 0.31 | 8.6E-06 | 0.31 |
| Chloroform | 0.0055 | 1.7E-06 | 0.0055 | 0.23 | 3.3E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.7E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.8E-07 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.1E-06 | 2.2E-04 | 0.0058 | 5.2E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 6.8E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.4E-05 | 0.0032 | 0.0017 | 6.5E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0010 | 0.55 | 0.38 | 3.4E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.4E-07 | 7.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.3E-08 | 6.0E-05 | 0.0014 | 1.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.5E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.2E-08 | 3.1E-05 | 1.9E-05 | 1.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.0E-07 | 0.0024 | 0.045 | 2.7E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.9E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 7.1E-07 | 1.4E-06 | 0.0059 | 0.0028 | 0.0087 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.0E-06 | 5.4E-04 | 0.0066 | 5.4E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0016 | 0.0064 | 0.0083 | 5.8E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 7.5E-04 | 0.0086 | 0.0079 | 5.4E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.21 | 0.54 | 1.1 | 0.13 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.9E-04 | 0.026 | 0.55 | 1.5E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 8.7E-04 | 8.7E-04 | - | 0.0021 | 0.0021 |
| Carbon Monoxide (CO)[c] | 0.069 | 5.7E-04 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.023 | 0.023 | - | 0.017 | 0.017 |
| Hydrogen Fluoride (HF)[ac] | - | 0.0068 | 0.0068 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.057 | 0.22 | 0.29 | 0.023 | 0.31 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.0077 | 0.0077 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.013 | 0.69 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0032 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.0096 | 0.038 | 0.070 | 0.0049 | 0.075 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 1.0E-04 | 0.0016 | 1.2E-04 | 4.2E-06 | 1.2E-04 |
| Arsenic | 0.022 | 4.0E-04 | 0.022 | 0.0060 | 5.4E-05 | 0.0061 |
| Barium | 0.0040 | 8.0E-05 | 0.0041 | 8.2E-04 | 8.2E-06 | 8.3E-04 |
| Beryllium | 0.037 | 0.0032 | 0.040 | 0.030 | 0.0013 | 0.031 |
| Boron[c] | 0.019 | 0.0029 | 0.021 | - | - | - |
| Cadmium | 0.015 | 0.013 | 0.028 | 0.024 | 0.011 | 0.035 |
| Chromium (hexavalent)[a] | - | 6.1E-04 | 6.1E-04 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 4.3E-04 | 0.0071 | - | - | - |
| Cobalt | 0.0074 | 0.0055 | 0.013 | 0.0060 | 0.0022 | 0.0083 |
| Lead | 0.0081 | 0.0063 | 0.014 | 0.0100 | 0.0039 | 0.014 |
| Mercury - Inorganic[a] | - | 0.0047 | 0.0047 | - | 2.9E-04 | 2.9E-04 |
| Nickel[c] | 0.0018 | 0.0028 | 0.0046 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.6E-05 | 0.0037 | 3.0E-04 | 1.9E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.0064 | 0.015 | 3.4E-04 | 1.3E-04 | 4.7E-04 |
| Thallium[c] | 0.0073 | 0.0074 | 0.015 | - | - | - |
| Tin | 3.7E-04 | 1.7E-04 | 5.3E-04 | 3.0E-04 | 6.8E-05 | 3.7E-04 |
| Vanadium | 0.0075 | 4.4E-04 | 0.0080 | 0.0015 | 4.5E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 7.6E-04 | 0.0028 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.5E-06 | 0.0030 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.8E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.5E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.7E-07 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.5E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 7.2E-06 | 6.7E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.6E-05 | 3.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 1.3E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.3E-06 | 6.6E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.4E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.6E-07 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.6E-05 | 0.0029 | - | - | - |
| Fluorene[ac] | - | 5.9E-07 | 5.9E-07 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 7.2E-07 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.7E-07 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.6E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.9E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 4.6E-04 | 0.0052 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 1.4E-04 | 0.0012 | 2.8E-04 | 1.9E-05 | 3.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.3E-08 | 8.7E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.7E-08 | 3.7E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.9E-05 | 6.5E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.6E-08 | 2.6E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.8E-06 | 4.3E-04 | 4.4E-05 | 4.0E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.4E-08 | 2.8E-04 | 1.1E-04 | 5.0E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.1E-10 | 0.0091 | 0.0035 | 4.1E-11 | 0.0035 |
| Benzene | 0.17 | 3.5E-05 | 0.17 | 0.41 | 4.1E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0018 | 0.0039 | - | - | - |
| Bromoform | 0.0014 | 1.9E-04 | 0.0016 | 5.4E-04 | 3.6E-05 | 5.7E-04 |
| Bromomethane | 0.0018 | 5.7E-05 | 0.0018 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.6E-07 | 0.014 | 0.31 | 5.1E-06 | 0.31 |
| Chloroform | 0.0055 | 9.7E-07 | 0.0055 | 0.23 | 2.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 5.1E-07 | 2.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.4E-06 | 2.2E-04 | 0.0058 | 3.1E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 4.0E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.4E-05 | 0.0032 | 0.0017 | 3.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 6.0E-04 | 0.55 | 0.38 | 2.0E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 3.1E-07 | 6.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 5.4E-08 | 6.0E-05 | 0.0014 | 6.1E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.6E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.0E-08 | 3.1E-05 | 1.9E-05 | 9.2E-09 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.7E-07 | 0.0024 | 0.045 | 1.6E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 4.1E-07 | 1.1E-06 | 0.0059 | 0.0017 | 0.0076 |
| Xylenes, m-, p- and o- | 5.3E-04 | 5.2E-06 | 5.4E-04 | 0.0066 | 3.2E-05 | 0.0066 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 9.2E-04 | 0.0057 | 0.0083 | 3.5E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 4.3E-04 | 0.0083 | 0.0079 | 3.2E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.12 | 0.45 | 1.1 | 0.075 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.1E-04 | 0.026 | 0.55 | 8.9E-05 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0020 | 0.0020 | - | 0.0032 | 0.0032 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0013 | 0.070 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.052 | 0.052 | - | 0.026 | 0.026 |
| Hydrogen Fluoride (HF)[ac] | - | 0.016 | 0.016 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.13 | 0.29 | 0.29 | 0.035 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.023 | 0.023 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.038 | 0.72 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.0095 | 0.30 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.022 | 0.050 | 0.070 | 0.0074 | 0.078 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.4E-04 | 0.0017 | 1.2E-04 | 6.4E-06 | 1.3E-04 |
| Arsenic | 0.022 | 9.2E-04 | 0.023 | 0.0060 | 8.2E-05 | 0.0061 |
| Barium | 0.0040 | 1.8E-04 | 0.0042 | 8.2E-04 | 1.2E-05 | 8.3E-04 |
| Beryllium | 0.037 | 0.0073 | 0.044 | 0.030 | 0.0019 | 0.032 |
| Boron[c] | 0.019 | 0.0067 | 0.025 | - | - | - |
| Cadmium | 0.015 | 0.031 | 0.045 | 0.024 | 0.016 | 0.041 |
| Chromium (hexavalent)[a] | - | 0.0014 | 0.0014 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 9.8E-04 | 0.0077 | - | - | - |
| Cobalt | 0.0074 | 0.013 | 0.020 | 0.0060 | 0.0034 | 0.0094 |
| Lead | 0.0081 | 0.015 | 0.023 | 0.0100 | 0.0058 | 0.016 |
| Mercury - Inorganic[a] | - | 0.011 | 0.011 | - | 4.4E-04 | 4.4E-04 |
| Nickel[c] | 0.0018 | 0.0063 | 0.0082 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.0E-04 | 0.0038 | 3.0E-04 | 2.8E-06 | 3.0E-04 |
| Silver | 0.0083 | 0.015 | 0.023 | 3.4E-04 | 2.0E-04 | 5.4E-04 |
| Thallium[c] | 0.0073 | 0.017 | 0.024 | - | - | - |
| Tin | 3.7E-04 | 3.8E-04 | 7.5E-04 | 3.0E-04 | 1.0E-04 | 4.0E-04 |
| Vanadium | 0.0075 | 0.0010 | 0.0086 | 0.0015 | 6.8E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0017 | 0.0038 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 8.1E-06 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 6.3E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.6E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.3E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 8.8E-07 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.4E-05 | 6.8E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.7E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.6E-05 | 3.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 2.0E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 7.6E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.3E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.6E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.4E-06 | 1.4E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 6.6E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.1E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.3E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 8.3E-05 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.4E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 7.0E-04 | 0.0054 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 3.2E-04 | 0.0013 | 2.8E-04 | 2.8E-05 | 3.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.9E-08 | 8.9E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 8.5E-08 | 8.5E-08 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 9.0E-05 | 7.0E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.9E-08 | 5.9E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.8E-05 | 4.4E-04 | 4.4E-05 | 6.0E-07 | 4.4E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 5.6E-08 | 2.8E-04 | 1.1E-04 | 7.5E-09 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.9E-10 | 0.0091 | 0.0035 | 6.2E-11 | 0.0035 |
| Benzene | 0.17 | 8.0E-05 | 0.17 | 0.41 | 6.2E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0040 | 0.0062 | - | - | - |
| Bromoform | 0.0014 | 4.4E-04 | 0.0019 | 5.4E-04 | 5.4E-05 | 5.9E-04 |
| Bromomethane | 0.0018 | 1.3E-04 | 0.0019 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.1E-06 | 0.014 | 0.31 | 7.7E-06 | 0.31 |
| Chloroform | 0.0055 | 2.2E-06 | 0.0055 | 0.23 | 3.0E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 7.6E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.2E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 5.5E-06 | 2.3E-04 | 0.0058 | 4.7E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 6.1E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.2E-05 | 0.0032 | 0.0017 | 5.8E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0014 | 0.55 | 0.38 | 3.1E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 7.1E-07 | 7.3E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.2E-07 | 6.0E-05 | 0.0014 | 9.2E-07 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.9E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 6.9E-08 | 3.1E-05 | 1.9E-05 | 1.4E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.0E-07 | 0.0024 | 0.045 | 2.4E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.7E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 9.5E-07 | 1.7E-06 | 0.0059 | 0.0025 | 0.0084 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.2E-05 | 5.5E-04 | 0.0066 | 4.8E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0021 | 0.0069 | 0.0083 | 5.2E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 9.9E-04 | 0.0089 | 0.0079 | 4.8E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.28 | 0.61 | 1.1 | 0.13 | 1.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 2.6E-04 | 0.026 | 0.55 | 1.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0024 | 0.0024 | - | 0.0044 | 0.0044 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0016 | 0.071 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.064 | 0.064 | - | 0.036 | 0.036 |
| Hydrogen Fluoride (HF)[ac] | - | 0.019 | 0.019 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.16 | 0.32 | 0.29 | 0.049 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.034 | 0.034 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.056 | 0.74 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.014 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.027 | 0.055 | 0.070 | 0.010 | 0.080 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 2.9E-04 | 0.0018 | 1.2E-04 | 8.9E-06 | 1.3E-04 |
| Arsenic | 0.022 | 0.0011 | 0.023 | 0.0060 | 1.1E-04 | 0.0061 |
| Barium | 0.0040 | 2.3E-04 | 0.0042 | 8.2E-04 | 1.7E-05 | 8.4E-04 |
| Beryllium | 0.037 | 0.0089 | 0.046 | 0.030 | 0.0027 | 0.033 |
| Boron[c] | 0.019 | 0.0082 | 0.027 | - | - | - |
| Cadmium | 0.015 | 0.038 | 0.052 | 0.024 | 0.023 | 0.047 |
| Chromium (hexavalent)[a] | - | 0.0017 | 0.0017 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0012 | 0.0079 | - | - | - |
| Cobalt | 0.0074 | 0.016 | 0.023 | 0.0060 | 0.0047 | 0.011 |
| Lead | 0.0081 | 0.018 | 0.026 | 0.0100 | 0.0081 | 0.018 |
| Mercury - Inorganic[a] | - | 0.013 | 0.013 | - | 6.1E-04 | 6.1E-04 |
| Nickel[c] | 0.0018 | 0.0078 | 0.0096 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 1.3E-04 | 0.0038 | 3.0E-04 | 3.9E-06 | 3.1E-04 |
| Silver | 0.0083 | 0.018 | 0.026 | 3.4E-04 | 2.7E-04 | 6.1E-04 |
| Thallium[c] | 0.0073 | 0.021 | 0.028 | - | - | - |
| Tin | 3.7E-04 | 4.7E-04 | 8.4E-04 | 3.0E-04 | 1.4E-04 | 4.4E-04 |
| Vanadium | 0.0075 | 0.0012 | 0.0088 | 0.0015 | 9.4E-05 | 0.0016 |
| Zinc[c] | 0.0021 | 0.0021 | 0.0042 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.0E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.8E-06 | 7.6E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.4E-06 | 8.0E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.1E-06 | 6.9E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.0E-05 | 6.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.0E-05 | 6.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.4E-05 | 3.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 2.8E-04 | 0.068 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.3E-06 | 6.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.0E-06 | 4.7E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.3E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.5E-05 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 1.7E-06 | 1.7E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.1E-06 | 3.4E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 1.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 5.4E-05 | 0.0014 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Project Alone Case | Project Case | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 9.7E-04 | 0.0057 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 3.9E-04 | 0.0014 | 2.8E-04 | 3.9E-05 | 3.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.6E-08 | 9.0E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.0E-07 | 1.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 1.1E-04 | 7.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.3E-08 | 7.3E-08 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.2E-05 | 4.5E-04 | 4.4E-05 | 8.4E-07 | 4.5E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.9E-08 | 2.8E-04 | 1.1E-04 | 1.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 6.1E-10 | 0.0091 | 0.0035 | 8.6E-11 | 0.0035 |
| Benzene | 0.17 | 9.8E-05 | 0.17 | 0.41 | 8.7E-05 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.0050 | 0.0071 | - | - | - |
| Bromoform | 0.0014 | 5.4E-04 | 0.0020 | 5.4E-04 | 7.5E-05 | 6.1E-04 |
| Bromomethane | 0.0018 | 1.6E-04 | 0.0020 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.3E-06 | 0.014 | 0.31 | 1.1E-05 | 0.31 |
| Chloroform | 0.0055 | 2.7E-06 | 0.0055 | 0.23 | 4.1E-05 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.3E-07 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.4E-06 | 3.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.7E-06 | 2.3E-04 | 0.0058 | 6.5E-05 | 0.0058 |
| Ethylbenzene | - | - | - | 0.0012 | 8.4E-08 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.0E-05 | 0.0032 | 0.0017 | 8.0E-06 | 0.0017 |
| Formaldehyde | 0.55 | 0.0017 | 0.55 | 0.38 | 4.3E-04 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 8.8E-07 | 7.5E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.5E-07 | 6.0E-05 | 0.0014 | 1.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.3E-07 | 6.2E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.5E-08 | 3.1E-05 | 1.9E-05 | 1.9E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.9E-07 | 0.0024 | 0.045 | 3.3E-06 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.3E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-06 | 1.9E-06 | 0.0059 | 0.0035 | 0.0094 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-05 | 5.5E-04 | 0.0066 | 6.7E-05 | 0.0067 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0026 | 0.0074 | 0.0083 | 7.3E-05 | 0.0083 |
| Nasal Irritants | 0.0079 | 0.0012 | 0.0091 | 0.0079 | 6.7E-05 | 0.0079 |
| Respiratory Irritants | 0.33 | 0.35 | 0.68 | 1.1 | 0.19 | 1.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 3.2E-04 | 0.027 | 0.55 | 1.9E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0065 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0039 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.4E-05 | 0.015 |
| Arsenic | 0.12 | 9.0E-05 | 0.12 |
| Barium | 0.0049 | 6.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0045 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.0E-05 | 1.0E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.2E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.6E-04 | 1.6E-04 |
| Nickel | 0.045 | 0.0056 | 0.050 |
| Phosphorus | 7.3E-10 | 2.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.7E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.8E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 1.0E-07 | 1.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.6E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.3E-09 | 6.3E-09 |
| Pentachlorobenzene[a] | - | 4.4E-09 | 4.4E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.8E-07 | 1.8E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.4E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.9E-10 | 0.12 |
| Benzene | 0.13 | 3.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 3.0E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.4E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.1E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.4E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.1E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.7E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 6.9E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.4E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.2E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.8E-05 | 8.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.3E-04 | 7.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.6E-05 | 0.12 |
| Barium | 0.0049 | 3.4E-06 | 0.0050 |
| Beryllium | 0.043 | 7.7E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.2E-06 | 5.2E-06 |
| Cobalt | 0.0060 | 9.4E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.1E-05 | 8.1E-05 |
| Nickel | 0.045 | 0.0028 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.9E-06 | 0.015 |
| Silver | 0.034 | 5.5E-04 | 0.035 |
| Thallium | 0.029 | 6.3E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.5E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.9E-08 | 8.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.2E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0091 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.8E-05 | 8.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.3E-04 | 7.3E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.5E-05 | 0.12 |
| Barium | 0.0049 | 3.4E-06 | 0.0050 |
| Beryllium | 0.043 | 7.7E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.2E-06 | 5.2E-06 |
| Cobalt | 0.0060 | 9.4E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.1E-05 | 8.1E-05 |
| Nickel | 0.045 | 0.0028 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.9E-06 | 0.015 |
| Silver | 0.034 | 5.4E-04 | 0.035 |
| Thallium | 0.029 | 6.3E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.5E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.0E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.1E-07 | 0.0023 |
| Fluorene[a] | - | 5.1E-08 | 5.1E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.3E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.4E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.9E-08 | 8.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.3E-09 | 6.3E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.1E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.1E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.8E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0091 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.6E-04 | 1.6E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0013 | 0.0013 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0059 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.5E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0035 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.0E-05 | 0.015 |
| Arsenic | 0.12 | 8.2E-05 | 0.12 |
| Barium | 0.0049 | 6.2E-06 | 0.0050 |
| Beryllium | 0.043 | 1.4E-04 | 0.043 |
| Boron | 0.0031 | 9.0E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0041 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.4E-06 | 9.4E-06 |
| Cobalt | 0.0060 | 1.7E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.9E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0051 | 0.050 |
| Phosphorus | 7.3E-10 | 2.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.0E-06 | 0.015 |
| Silver | 0.034 | 9.8E-04 | 0.035 |
| Thallium | 0.029 | 0.0011 | 0.030 |
| Tin | 0.0015 | 2.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.4E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Fluorene[a] | - | 9.2E-08 | 9.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 9.6E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.7E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.7E-09 | 5.7E-09 |
| Pentachlorobenzene[a] | - | 4.0E-09 | 4.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.2E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.6E-07 | 1.6E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.1E-08 | 1.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 3.0E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.7E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.3E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.0E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.5E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 6.3E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.016 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.9E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0048 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.6E-05 | 0.12 |
| Barium | 0.0049 | 5.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.6E-06 | 7.6E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.4E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0041 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.7E-06 | 0.015 |
| Silver | 0.034 | 7.9E-04 | 0.035 |
| Thallium | 0.029 | 9.2E-04 | 0.030 |
| Tin | 0.0015 | 2.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.9E-07 | 0.0023 |
| Fluorene[a] | - | 7.4E-08 | 7.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorobenzene[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorophenol | 8.2E-04 | 9.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.2E-09 | 9.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 5.0E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.4E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0014 | 0.0014 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0062 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.2E-05 | 0.015 |
| Arsenic | 0.12 | 8.6E-05 | 0.12 |
| Barium | 0.0049 | 6.5E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.4E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0043 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.8E-06 | 9.8E-06 |
| Cobalt | 0.0060 | 1.8E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.1E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0054 | 0.050 |
| Phosphorus | 7.3E-10 | 2.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.4E-06 | 0.015 |
| Silver | 0.034 | 0.0010 | 0.035 |
| Thallium | 0.029 | 0.0012 | 0.030 |
| Tin | 0.0015 | 2.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.2E-06 | 0.0023 |
| Fluorene[a] | - | 9.6E-08 | 9.6E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 1.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.8E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorobenzene[a] | - | 4.2E-09 | 4.2E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.7E-07 | 1.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.2E-08 | 1.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 3.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.9E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.4E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.4E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.2E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 6.6E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.1E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 7.2E-05 | 7.2E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.0E-04 | 6.0E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0016 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.8E-05 | 0.015 |
| Arsenic | 0.12 | 3.7E-05 | 0.12 |
| Barium | 0.0049 | 2.8E-06 | 0.0050 |
| Beryllium | 0.043 | 6.3E-05 | 0.043 |
| Boron | 0.0031 | 4.1E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0019 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.3E-06 | 4.3E-06 |
| Cobalt | 0.0060 | 7.7E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.7E-05 | 6.7E-05 |
| Nickel | 0.045 | 0.0023 | 0.047 |
| Phosphorus | 7.3E-10 | 9.6E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.2E-06 | 0.015 |
| Silver | 0.034 | 4.5E-04 | 0.035 |
| Thallium | 0.029 | 5.2E-04 | 0.030 |
| Tin | 0.0015 | 1.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 7.4E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.0E-07 | 0.0023 |
| Fluorene[a] | - | 4.2E-08 | 4.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.4E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.8E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.5E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.6E-09 | 2.6E-09 |
| Pentachlorobenzene[a] | - | 1.8E-09 | 1.8E-09 |
| Pentachlorophenol | 8.2E-04 | 5.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 7.3E-08 | 7.3E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.2E-09 | 5.2E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.8E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.9E-11 | 0.12 |
| Benzene | 0.13 | 1.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.8E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.6E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.8E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 7.0E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.8E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.8E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.8E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 8.0E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0075 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.5E-05 | 8.5E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.1E-04 | 7.1E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0032 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0019 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.2E-05 | 0.015 |
| Arsenic | 0.12 | 4.4E-05 | 0.12 |
| Barium | 0.0049 | 3.3E-06 | 0.0050 |
| Beryllium | 0.043 | 7.5E-05 | 0.043 |
| Boron | 0.0031 | 4.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0022 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.0E-06 | 5.0E-06 |
| Cobalt | 0.0060 | 9.1E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.6E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.9E-05 | 7.9E-05 |
| Nickel | 0.045 | 0.0027 | 0.048 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.8E-06 | 0.015 |
| Silver | 0.034 | 5.3E-04 | 0.035 |
| Thallium | 0.029 | 6.2E-04 | 0.030 |
| Tin | 0.0015 | 1.4E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.3E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.7E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.0E-07 | 0.0023 |
| Fluorene[a] | - | 4.9E-08 | 4.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.2E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.9E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.2E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.1E-09 | 3.1E-09 |
| Pentachlorobenzene[a] | - | 2.1E-09 | 2.1E-09 |
| Pentachlorophenol | 8.2E-04 | 6.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.6E-08 | 8.6E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.1E-09 | 6.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.3E-11 | 0.12 |
| Benzene | 0.13 | 1.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.1E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.6E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.0E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.9E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.3E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.5E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.5E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.4E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.5E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0089 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.6E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.8E-05 | 9.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.2E-04 | 8.2E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0037 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.9E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0022 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.5E-05 | 0.015 |
| Arsenic | 0.12 | 5.1E-05 | 0.12 |
| Barium | 0.0049 | 3.9E-06 | 0.0050 |
| Beryllium | 0.043 | 8.7E-05 | 0.043 |
| Boron | 0.0031 | 5.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.8E-06 | 5.8E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.1E-05 | 9.1E-05 |
| Nickel | 0.045 | 0.0032 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.4E-06 | 0.015 |
| Silver | 0.034 | 6.1E-04 | 0.035 |
| Thallium | 0.029 | 7.1E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.3E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Fluorene[a] | - | 5.7E-08 | 5.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 6.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.6E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 6.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.5E-09 | 3.5E-09 |
| Pentachlorobenzene[a] | - | 2.5E-09 | 2.5E-09 |
| Pentachlorophenol | 8.2E-04 | 7.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.0E-07 | 1.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 7.1E-09 | 7.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 1.9E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.4E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.3E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 9.3E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 3.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 5.2E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 8.0E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.9E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 9.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.8E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 5.2E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.9E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.9E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.010 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 6.8E-05 | 6.8E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 5.6E-04 | 5.6E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.1E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0015 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 1.7E-05 | 0.015 |
| Arsenic | 0.12 | 3.5E-05 | 0.12 |
| Barium | 0.0049 | 2.6E-06 | 0.0050 |
| Beryllium | 0.043 | 6.0E-05 | 0.043 |
| Boron | 0.0031 | 3.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0018 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.0E-06 | 4.0E-06 |
| Cobalt | 0.0060 | 7.3E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.3E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 6.3E-05 | 6.3E-05 |
| Nickel | 0.045 | 0.0022 | 0.047 |
| Phosphorus | 7.3E-10 | 9.0E-13 | 7.3E-10 |
| Selenium | 0.015 | 3.0E-06 | 0.015 |
| Silver | 0.034 | 4.2E-04 | 0.035 |
| Thallium | 0.029 | 4.9E-04 | 0.030 |
| Tin | 0.0015 | 1.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 5.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 6.9E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 4.7E-07 | 0.0023 |
| Fluorene[a] | - | 3.9E-08 | 3.9E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 4.1E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 7.3E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 4.3E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 2.4E-09 | 2.4E-09 |
| Pentachlorobenzene[a] | - | 1.7E-09 | 1.7E-09 |
| Pentachlorophenol | 8.2E-04 | 5.2E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 6.9E-08 | 6.9E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 4.9E-09 | 4.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 9.2E-09 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.4E-11 | 0.12 |
| Benzene | 0.13 | 1.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.7E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0054 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 9.0E-06 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 6.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 3.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 5.5E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 6.6E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 3.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 2.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 5.5E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 7.6E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0070 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.3E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.6E-04 | 1.6E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0014 | 0.0014 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0061 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.2E-05 | 0.015 |
| Arsenic | 0.12 | 8.5E-05 | 0.12 |
| Barium | 0.0049 | 6.4E-06 | 0.0050 |
| Beryllium | 0.043 | 1.4E-04 | 0.043 |
| Boron | 0.0031 | 9.3E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0043 | 0.12 |
| Chromium (hexavalent)[a] | - | 9.7E-06 | 9.7E-06 |
| Cobalt | 0.0060 | 1.8E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.0E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.5E-04 | 1.5E-04 |
| Nickel | 0.045 | 0.0053 | 0.050 |
| Phosphorus | 7.3E-10 | 2.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.3E-06 | 0.015 |
| Silver | 0.034 | 0.0010 | 0.035 |
| Thallium | 0.029 | 0.0012 | 0.030 |
| Tin | 0.0015 | 2.7E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.2E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.1E-06 | 0.0023 |
| Fluorene[a] | - | 9.5E-08 | 9.5E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 9.9E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 5.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.8E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.0E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 5.9E-09 | 5.9E-09 |
| Pentachlorobenzene[a] | - | 4.1E-09 | 4.1E-09 |
| Pentachlorophenol | 8.2E-04 | 1.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.7E-07 | 1.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.2E-08 | 1.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 3.1E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.8E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 8.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.3E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 4.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 8.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 6.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.3E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.0E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.0E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.3E-05 | 8.3E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 6.9E-04 | 6.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0031 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.6E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0018 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.1E-05 | 0.015 |
| Arsenic | 0.12 | 4.3E-05 | 0.12 |
| Barium | 0.0049 | 3.2E-06 | 0.0050 |
| Beryllium | 0.043 | 7.3E-05 | 0.043 |
| Boron | 0.0031 | 4.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0021 | 0.12 |
| Chromium (hexavalent)[a] | - | 4.9E-06 | 4.9E-06 |
| Cobalt | 0.0060 | 8.9E-05 | 0.0060 |
| Lead[c] | 0.0066 | 1.5E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 7.7E-05 | 7.7E-05 |
| Nickel | 0.045 | 0.0027 | 0.047 |
| Phosphorus | 7.3E-10 | 1.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 3.7E-06 | 0.015 |
| Silver | 0.034 | 5.1E-04 | 0.035 |
| Thallium | 0.029 | 6.0E-04 | 0.030 |
| Tin | 0.0015 | 1.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.1E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 8.5E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 5.8E-07 | 0.0023 |
| Fluorene[a] | - | 4.8E-08 | 4.8E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 2.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 8.9E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.2E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.0E-09 | 3.0E-09 |
| Pentachlorobenzene[a] | - | 2.1E-09 | 2.1E-09 |
| Pentachlorophenol | 8.2E-04 | 6.3E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 8.4E-08 | 8.4E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 5.9E-09 | 5.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.0E-11 | 0.12 |
| Benzene | 0.13 | 1.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.0E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.4E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 7.8E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.3E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 6.7E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.1E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.5E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.4E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.3E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 6.7E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 9.3E-06 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0086 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.5E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0046 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.9E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 9.0E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.2E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.7E-07 | 0.0023 |
| Fluorene[a] | - | 7.2E-08 | 7.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.5E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.3E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 7.8E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.5E-09 | 4.5E-09 |
| Pentachlorobenzene[a] | - | 3.1E-09 | 3.1E-09 |
| Pentachlorophenol | 8.2E-04 | 9.5E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 8.9E-09 | 8.9E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.0E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.5E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.6E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 4.9E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 8.9E-05 | 8.9E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.4E-04 | 7.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 3.3E-04 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0020 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.3E-05 | 0.015 |
| Arsenic | 0.12 | 4.6E-05 | 0.12 |
| Barium | 0.0049 | 3.5E-06 | 0.0050 |
| Beryllium | 0.043 | 7.9E-05 | 0.043 |
| Boron | 0.0031 | 5.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0023 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.3E-06 | 5.3E-06 |
| Cobalt | 0.0060 | 9.6E-05 | 0.0061 |
| Lead[c] | 0.0066 | 1.7E-04 | 0.0067 |
| Mercury - Inorganic[a] | - | 8.3E-05 | 8.3E-05 |
| Nickel | 0.045 | 0.0029 | 0.048 |
| Phosphorus | 7.3E-10 | 1.2E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.0E-06 | 0.015 |
| Silver | 0.034 | 5.5E-04 | 0.035 |
| Thallium | 0.029 | 6.4E-04 | 0.030 |
| Tin | 0.0015 | 1.5E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 1.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 6.6E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.3E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 9.1E-07 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 6.2E-07 | 0.0023 |
| Fluorene[a] | - | 5.2E-08 | 5.2E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 5.4E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 3.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 2.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 9.6E-06 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 5.6E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorobenzene[a] | - | 2.2E-09 | 2.2E-09 |
| Pentachlorophenol | 8.2E-04 | 6.8E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 9.0E-08 | 9.0E-08 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 6.4E-09 | 6.4E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.7E-11 | 0.12 |
| Benzene | 0.13 | 1.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 2.2E-08 | 2.3E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 8.4E-09 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 2.9E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 4.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 7.3E-07 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 1.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 8.7E-06 | 0.18 |
| O-terphenyl | 2.3E-05 | 2.7E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 2.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 1.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 4.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 3.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 7.2E-07 | 3.7E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 1.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0093 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.7E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0047 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0028 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.6E-05 | 0.12 |
| Barium | 0.0049 | 5.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.2E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.5E-06 | 7.5E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.4E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0041 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.6E-06 | 0.015 |
| Silver | 0.034 | 7.9E-04 | 0.035 |
| Thallium | 0.029 | 9.2E-04 | 0.030 |
| Tin | 0.0015 | 2.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.4E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 1.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 8.9E-07 | 0.0023 |
| Fluorene[a] | - | 7.4E-08 | 7.4E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 7.7E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.3E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.0E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorobenzene[a] | - | 3.2E-09 | 3.2E-09 |
| Pentachlorophenol | 8.2E-04 | 9.7E-07 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.1E-09 | 9.1E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.1E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.1E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.7E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 3.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 6.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 5.0E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.4E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.013 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.4E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0011 | 0.0011 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0050 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0030 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.4E-05 | 0.015 |
| Arsenic | 0.12 | 6.9E-05 | 0.12 |
| Barium | 0.0049 | 5.2E-06 | 0.0050 |
| Beryllium | 0.043 | 1.2E-04 | 0.043 |
| Boron | 0.0031 | 7.5E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0034 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.9E-06 | 7.9E-06 |
| Cobalt | 0.0060 | 1.4E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.5E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0043 | 0.049 |
| Phosphorus | 7.3E-10 | 1.8E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.9E-06 | 0.015 |
| Silver | 0.034 | 8.2E-04 | 0.035 |
| Thallium | 0.029 | 9.6E-04 | 0.030 |
| Tin | 0.0015 | 2.2E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.8E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 9.3E-07 | 0.0023 |
| Fluorene[a] | - | 7.7E-08 | 7.7E-08 |
| 1-Methylnaphthalene | 1.5E-04 | 8.0E-08 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 4.5E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 3.5E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Project Alone Case | Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 1.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 8.4E-09 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 4.8E-09 | 4.8E-09 |
| Pentachlorobenzene[a] | - | 3.3E-09 | 3.3E-09 |
| Pentachlorophenol | 8.2E-04 | 1.0E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.3E-07 | 1.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 9.5E-09 | 9.5E-09 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 1.8E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 2.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 3.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 1.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 4.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 6.9E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.1E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 2.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 4.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 3.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 2.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 7.0E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 5.2E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.1E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 1.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.014 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.5E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

# APPENDIX I-14

Revised Inhalation Results – Upset Operations (Process Upset Case) – 400,000 tpy

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.028 | 0.028 | - | 0.040 | 0.040 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.018 | 0.087 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.74 | 0.74 | - | 0.33 | 0.33 |
| Hydrogen Fluoride (HF)[ac] | - | 0.22 | 0.22 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.35 | 0.51 | 0.29 | 0.085 | 0.38 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.14 | 0.14 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.23 | 0.91 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.057 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.49 | 0.52 | 0.070 | 0.15 | 0.22 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0034 | 0.0048 | 1.2E-04 | 8.1E-05 | 2.0E-04 |
| Arsenic | 0.022 | 0.013 | 0.035 | 0.0060 | 0.0010 | 0.0071 |
| Barium | 0.0040 | 0.0026 | 0.0066 | 8.2E-04 | 1.6E-04 | 9.8E-04 |
| Beryllium | 0.037 | 0.10 | 0.14 | 0.030 | 0.025 | 0.055 |
| Boron[c] | 0.019 | 0.094 | 0.11 | - | - | - |
| Cadmium | 0.015 | 0.43 | 0.44 | 0.024 | 0.21 | 0.23 |
| Chromium (hexavalent)[a] | - | 0.020 | 0.020 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.014 | 0.021 | - | - | - |
| Cobalt | 0.0074 | 0.18 | 0.19 | 0.0060 | 0.043 | 0.049 |
| Lead | 0.0081 | 0.20 | 0.21 | 0.0100 | 0.074 | 0.084 |
| Mercury - Inorganic[a] | - | 0.15 | 0.15 | - | 0.0056 | 0.0056 |
| Nickel[c] | 0.0018 | 0.089 | 0.091 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0015 | 0.0051 | 3.0E-04 | 3.6E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.21 | 0.21 | 3.4E-04 | 0.0025 | 0.0028 |
| Thallium[c] | 0.0073 | 0.24 | 0.25 | - | - | - |
| Tin | 3.7E-04 | 0.0054 | 0.0058 | 3.0E-04 | 0.0013 | 0.0016 |
| Vanadium | 0.0075 | 0.014 | 0.022 | 0.0015 | 8.6E-04 | 0.0024 |
| Zinc[c] | 0.0021 | 0.025 | 0.027 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.1E-04 | 0.0032 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 8.9E-05 | 8.4E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 5.0E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.7E-05 | 7.4E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.4E-04 | 1.0E-03 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.3E-04 | 8.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 5.1E-04 | 8.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0026 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.1E-04 | 7.7E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.6E-05 | 5.2E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.5E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 5.1E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.9E-05 | 1.9E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 9.3E-05 | 4.2E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.4E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.9E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0012 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 6.2E-04 | 0.0020 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0089 | 0.014 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0044 | 0.0055 | 2.8E-04 | 3.6E-04 | 6.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 4.1E-07 | 1.3E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.2E-06 | 1.2E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0013 | 0.0019 | - | - | - |
| Pentachlorobenzene[ac] | - | 8.3E-07 | 8.3E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.5E-04 | 6.8E-04 | 4.4E-05 | 7.7E-06 | 5.1E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 7.9E-07 | 2.8E-04 | 1.1E-04 | 9.6E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 6.9E-09 | 0.0091 | 0.0035 | 7.9E-10 | 0.0035 |
| Benzene | 0.17 | 0.0011 | 0.17 | 0.41 | 7.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.057 | 0.059 | - | - | - |
| Bromoform | 0.0014 | 0.0062 | 0.0077 | 5.4E-04 | 6.9E-04 | 0.0012 |
| Bromomethane | 0.0018 | 0.0018 | 0.0036 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.5E-05 | 0.014 | 0.31 | 9.8E-05 | 0.31 |
| Chloroform | 0.0055 | 3.1E-05 | 0.0055 | 0.23 | 3.8E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.1E-05 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.7E-05 | 4.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 7.7E-05 | 3.0E-04 | 0.0058 | 5.9E-04 | 0.0063 |
| Ethylbenzene | - | - | - | 0.0012 | 7.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.6E-04 | 0.0036 | 0.0017 | 7.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.019 | 0.57 | 0.38 | 0.0039 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.0E-05 | 1.7E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.7E-06 | 6.2E-05 | 0.0014 | 1.2E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 8.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 9.7E-07 | 3.2E-05 | 1.9E-05 | 1.8E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 5.6E-06 | 0.0024 | 0.045 | 3.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.1E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.3E-05 | 1.4E-05 | 0.0059 | 0.032 | 0.038 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.7E-04 | 7.0E-04 | 0.0066 | 6.1E-04 | 0.0072 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.030 | 0.035 | 0.0083 | 6.6E-04 | 0.0089 |
| Nasal Irritants | 0.0079 | 0.014 | 0.022 | 0.0079 | 6.2E-04 | 0.0085 |
| Respiratory Irritants | 0.33 | 2.7 | 3.0 | 1.1 | 1.1 | 2.2 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0035 | 0.030 | 0.55 | 0.0017 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.015 | 0.015 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.010 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.41 | 0.41 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.20 | 0.36 | 0.29 | 0.037 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.059 | 0.059 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.098 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.27 | 0.30 | 0.070 | 0.065 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0019 | 0.0033 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0071 | 0.029 | 0.0060 | 4.5E-04 | 0.0065 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 6.8E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.056 | 0.093 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.019 | 0.052 | 0.070 | - | - | - |
| Cadmium | 0.015 | 0.24 | 0.25 | 0.024 | 0.090 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.011 | 0.011 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0076 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.098 | 0.11 | 0.0060 | 0.019 | 0.025 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.085 | 0.085 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.049 | 0.051 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.1E-04 | 0.0045 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.13 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0030 | 0.0033 | 3.0E-04 | 5.6E-04 | 8.7E-04 |
| Vanadium | 0.0075 | 0.0079 | 0.015 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.013 | 0.016 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.3E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.9E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.8E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.6E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.8E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.3E-04 | 7.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.8E-04 | 6.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.9E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.5E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 8.2E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.8E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.1E-05 | 1.1E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.1E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.0E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.4E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.4E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Schools**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0039 | 0.0086 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0024 | 0.0035 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.3E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.6E-07 | 6.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.0E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.6E-07 | 4.6E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.7E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.4E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.8E-09 | 0.0091 | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 6.2E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.032 | 0.034 | - | - | - |
| Bromoform | 0.0014 | 0.0034 | 0.0049 | 5.4E-04 | 3.0E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 0.0010 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.3E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.9E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 9.1E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.3E-05 | 2.6E-04 | 0.0058 | 2.6E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.5E-04 | 0.0034 | 0.0017 | 3.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.011 | 0.56 | 0.38 | 0.0017 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.5E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.6E-07 | 6.1E-05 | 0.0014 | 5.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.4E-07 | 3.1E-05 | 1.9E-05 | 7.6E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.1E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.2E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.4E-06 | 8.1E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.3E-05 | 6.3E-04 | 0.0066 | 2.7E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.016 | 0.021 | 0.0083 | 2.9E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0077 | 0.016 | 0.0079 | 2.7E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.5 | 1.8 | 1.1 | 0.48 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 7.4E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.017 | 0.017 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.011 | 0.080 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.45 | 0.45 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.13 | 0.13 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.22 | 0.38 | 0.29 | 0.036 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.058 | 0.058 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.096 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.30 | 0.33 | 0.070 | 0.064 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0020 | 0.0035 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0078 | 0.030 | 0.0060 | 4.4E-04 | 0.0065 |
| Barium | 0.0040 | 0.0016 | 0.0056 | 8.2E-04 | 6.7E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.062 | 0.099 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.019 | 0.057 | 0.075 | - | - | - |
| Cadmium | 0.015 | 0.26 | 0.27 | 0.024 | 0.088 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.012 | 0.012 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0084 | 0.015 | - | - | - |
| Cobalt | 0.0074 | 0.11 | 0.11 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.12 | 0.13 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.093 | 0.093 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.054 | 0.056 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 8.9E-04 | 0.0046 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.12 | 0.13 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.14 | 0.15 | - | - | - |
| Tin | 3.7E-04 | 0.0033 | 0.0036 | 3.0E-04 | 5.6E-04 | 8.6E-04 |
| Vanadium | 0.0075 | 0.0086 | 0.016 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.015 | 0.017 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.4E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.0E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.8E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 7.5E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.1E-04 | 8.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.1E-04 | 6.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 6.5E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.8E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 9.0E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.1E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.2E-05 | 1.2E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 5.6E-05 | 3.9E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 1.1E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 7.0E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.7E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0038 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0027 | 0.0037 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.5E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 7.6E-04 | 0.0014 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.0E-07 | 5.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.5E-04 | 5.8E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.8E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.2E-09 | 0.0091 | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 6.8E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.035 | 0.037 | - | - | - |
| Bromoform | 0.0014 | 0.0038 | 0.0052 | 5.4E-04 | 2.9E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 0.0011 | 0.0029 | - | - | - |
| Carbon tetrachloride | 0.014 | 9.1E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 1.9E-05 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 6.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.0E-05 | 3.9E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.7E-05 | 2.7E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.8E-04 | 0.0034 | 0.0017 | 3.1E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.012 | 0.56 | 0.38 | 0.0017 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 6.1E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.1E-06 | 6.1E-05 | 0.0014 | 5.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.9E-07 | 3.1E-05 | 1.9E-05 | 7.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.4E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.1E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 8.1E-06 | 8.8E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.0E-04 | 6.4E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.018 | 0.023 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0085 | 0.016 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.6 | 1.9 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0021 | 0.028 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.024 | 0.024 | - | 0.035 | 0.035 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.016 | 0.085 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.64 | 0.64 | - | 0.29 | 0.29 |
| Hydrogen Fluoride (HF)[ac] | - | 0.19 | 0.19 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.30 | 0.46 | 0.29 | 0.078 | 0.37 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.12 | 0.12 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.20 | 0.88 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.049 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.43 | 0.45 | 0.070 | 0.13 | 0.20 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0029 | 0.0044 | 1.2E-04 | 7.1E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.011 | 0.033 | 0.0060 | 9.0E-04 | 0.0069 |
| Barium | 0.0040 | 0.0022 | 0.0062 | 8.2E-04 | 1.4E-04 | 9.5E-04 |
| Beryllium | 0.037 | 0.088 | 0.13 | 0.030 | 0.022 | 0.052 |
| Boron[c] | 0.019 | 0.081 | 0.100 | - | - | - |
| Cadmium | 0.015 | 0.37 | 0.39 | 0.024 | 0.18 | 0.20 |
| Chromium (hexavalent)[a] | - | 0.017 | 0.017 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.012 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.15 | 0.16 | 0.0060 | 0.037 | 0.043 |
| Lead | 0.0081 | 0.18 | 0.18 | 0.0100 | 0.065 | 0.075 |
| Mercury - Inorganic[a] | - | 0.13 | 0.13 | - | 0.0048 | 0.0048 |
| Nickel[c] | 0.0018 | 0.077 | 0.079 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0049 | 3.0E-04 | 3.1E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.18 | 0.19 | 3.4E-04 | 0.0022 | 0.0025 |
| Thallium[c] | 0.0073 | 0.21 | 0.21 | - | - | - |
| Tin | 3.7E-04 | 0.0047 | 0.0050 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.012 | 0.020 | 0.0015 | 7.5E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.021 | 0.023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.7E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.3E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.6E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.1E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.9E-04 | 9.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.4E-04 | 7.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0022 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.2E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.0E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.4E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.0E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0010 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.3E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0077 | 0.012 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0038 | 0.0049 | 2.8E-04 | 3.1E-04 | 5.9E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.6E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.0E-06 | 1.0E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0011 | 0.0017 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.2E-04 | 6.5E-04 | 4.4E-05 | 6.7E-06 | 5.0E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.8E-07 | 2.8E-04 | 1.1E-04 | 8.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 6.0E-09 | 0.0091 | 0.0035 | 6.9E-10 | 0.0035 |
| Benzene | 0.17 | 9.7E-04 | 0.17 | 0.41 | 6.9E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.049 | 0.051 | - | - | - |
| Bromoform | 0.0014 | 0.0054 | 0.0068 | 5.4E-04 | 6.0E-04 | 0.0011 |
| Bromomethane | 0.0018 | 0.0016 | 0.0034 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.3E-05 | 0.014 | 0.31 | 8.6E-05 | 0.31 |
| Chloroform | 0.0055 | 2.7E-05 | 0.0055 | 0.23 | 3.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.2E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.4E-05 | 4.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.7E-05 | 2.9E-04 | 0.0058 | 5.2E-04 | 0.0063 |
| Ethylbenzene | - | - | - | 0.0012 | 6.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.9E-04 | 0.0036 | 0.0017 | 6.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.017 | 0.57 | 0.38 | 0.0034 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 8.7E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.5E-06 | 6.1E-05 | 0.0014 | 1.0E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.2E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.4E-07 | 3.2E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.8E-06 | 0.0024 | 0.045 | 2.6E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.9E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.2E-05 | 0.0059 | 0.028 | 0.034 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.8E-04 | 0.0066 | 5.3E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.026 | 0.030 | 0.0083 | 5.8E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.012 | 0.020 | 0.0079 | 5.3E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 2.3 | 2.6 | 1.1 | 0.97 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0031 | 0.029 | 0.55 | 0.0015 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.040 | 0.040 | - | 0.049 | 0.049 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.026 | 0.095 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | **1.0** | **1.0** | - | 0.41 | 0.41 |
| Hydrogen Fluoride (HF)[ac] | - | 0.31 | 0.31 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.46 | 0.62 | 0.29 | 0.10 | 0.40 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.17 | 0.17 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.28 | 0.96 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.071 | 0.37 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.70 | 0.73 | 0.070 | 0.18 | 0.25 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0048 | 0.0062 | 1.2E-04 | 1.0E-04 | 2.2E-04 |
| Arsenic | 0.022 | 0.018 | 0.040 | 0.0060 | 0.0013 | 0.0073 |
| Barium | 0.0040 | 0.0037 | 0.0077 | 8.2E-04 | 1.9E-04 | 0.0010 |
| Beryllium | 0.037 | 0.15 | 0.18 | 0.030 | 0.030 | 0.061 |
| Boron[c] | 0.019 | 0.13 | 0.15 | - | - | - |
| Cadmium | 0.015 | 0.61 | 0.62 | 0.024 | 0.26 | 0.28 |
| Chromium (hexavalent)[a] | - | 0.028 | 0.028 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.020 | 0.026 | - | - | - |
| Cobalt | 0.0074 | 0.25 | 0.26 | 0.0060 | 0.053 | 0.059 |
| Lead | 0.0081 | 0.29 | 0.30 | 0.0100 | 0.091 | 0.10 |
| Mercury - Inorganic[a] | - | 0.22 | 0.22 | - | 0.0068 | 0.0068 |
| Nickel[c] | 0.0018 | 0.13 | 0.13 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0021 | 0.0058 | 3.0E-04 | 4.4E-05 | 3.5E-04 |
| Silver | 0.0083 | 0.29 | 0.30 | 3.4E-04 | 0.0031 | 0.0034 |
| Thallium[c] | 0.0073 | 0.34 | 0.35 | - | - | - |
| Tin | 3.7E-04 | 0.0077 | 0.0080 | 3.0E-04 | 0.0016 | 0.0019 |
| Vanadium | 0.0075 | 0.020 | 0.028 | 0.0015 | 0.0011 | 0.0026 |
| Zinc[c] | 0.0021 | 0.035 | 0.037 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 1.6E-04 | 0.0032 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 1.3E-04 | 8.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 7.1E-05 | 8.6E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 2.6E-05 | 3.6E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 6.7E-05 | 7.6E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.8E-05 | 3.5E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 4.8E-04 | 0.0011 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 3.3E-04 | 9.9E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 7.2E-04 | 0.0011 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0031 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 1.5E-04 | 8.1E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 6.6E-05 | 5.4E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 2.1E-05 | 3.5E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 7.3E-04 | 0.0037 | - | - | - |
| Fluorene[ac] | - | 2.7E-05 | 2.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 1.3E-04 | 4.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.7E-05 | 1.3E-04 |
| Perylene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0016 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 8.7E-04 | 0.0023 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.011 | 0.016 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0063 | 0.0073 | 2.8E-04 | 4.4E-04 | 7.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 5.8E-07 | 1.4E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.7E-06 | 1.7E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0018 | 0.0024 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.2E-06 | 1.2E-06 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 3.6E-04 | 7.9E-04 | 4.4E-05 | 9.4E-06 | 5.3E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.1E-06 | 2.8E-04 | 1.1E-04 | 1.2E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 9.8E-09 | 0.0091 | 0.0035 | 9.7E-10 | 0.0035 |
| Benzene | 0.17 | 0.0016 | 0.17 | 0.41 | 9.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.080 | 0.082 | - | - | - |
| Bromoform | 0.0014 | 0.0088 | 0.010 | 5.4E-04 | 8.4E-04 | 0.0014 |
| Bromomethane | 0.0018 | 0.0026 | 0.0044 | - | - | - |
| Carbon tetrachloride | 0.014 | 2.1E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 4.4E-05 | 0.0056 | 0.23 | 4.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 1.5E-05 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 2.3E-05 | 5.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.1E-04 | 3.3E-04 | 0.0058 | 7.3E-04 | 0.0065 |
| Ethylbenzene | - | - | - | 0.0012 | 9.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 6.4E-04 | 0.0038 | 0.0017 | 9.0E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.028 | 0.58 | 0.38 | 0.0048 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 1.4E-05 | 2.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 2.5E-06 | 6.2E-05 | 0.0014 | 1.4E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.2E-05 | 6.4E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 1.4E-06 | 3.2E-05 | 1.9E-05 | 2.2E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 7.9E-06 | 0.0024 | 0.045 | 3.7E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.6E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.9E-05 | 2.0E-05 | 0.0059 | 0.040 | 0.046 |
| Xylenes, m-, p- and o- | 5.3E-04 | 2.4E-04 | 7.7E-04 | 0.0066 | 7.5E-04 | 0.0074 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.042 | 0.047 | 0.0083 | 8.2E-04 | 0.0091 |
| Nasal Irritants | 0.0079 | 0.020 | 0.028 | 0.0079 | 7.5E-04 | 0.0086 |
| Respiratory Irritants | 0.33 | 3.7 | 4.1 | 1.1 | 1.4 | 2.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0050 | 0.031 | 0.55 | 0.0021 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.024 | 0.024 | - | 0.044 | 0.044 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.016 | 0.085 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.64 | 0.64 | - | 0.37 | 0.37 |
| Hydrogen Fluoride (HF)[ac] | - | 0.19 | 0.19 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.31 | 0.48 | 0.29 | 0.097 | 0.39 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.15 | 0.15 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.25 | 0.93 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.062 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.43 | 0.46 | 0.070 | 0.17 | 0.24 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0029 | 0.0044 | 1.2E-04 | 9.0E-05 | 2.1E-04 |
| Arsenic | 0.022 | 0.011 | 0.033 | 0.0060 | 0.0012 | 0.0072 |
| Barium | 0.0040 | 0.0023 | 0.0062 | 8.2E-04 | 1.7E-04 | 9.9E-04 |
| Beryllium | 0.037 | 0.089 | 0.13 | 0.030 | 0.027 | 0.058 |
| Boron[c] | 0.019 | 0.082 | 0.10 | - | - | - |
| Cadmium | 0.015 | 0.37 | 0.39 | 0.024 | 0.23 | 0.25 |
| Chromium (hexavalent)[a] | - | 0.017 | 0.017 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.012 | 0.019 | - | - | - |
| Cobalt | 0.0074 | 0.15 | 0.16 | 0.0060 | 0.048 | 0.054 |
| Lead | 0.0081 | 0.18 | 0.19 | 0.0100 | 0.082 | 0.092 |
| Mercury - Inorganic[a] | - | 0.13 | 0.13 | - | 0.0062 | 0.0062 |
| Nickel[c] | 0.0018 | 0.078 | 0.079 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0013 | 0.0050 | 3.0E-04 | 4.0E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.18 | 0.19 | 3.4E-04 | 0.0028 | 0.0031 |
| Thallium[c] | 0.0073 | 0.21 | 0.22 | - | - | - |
| Tin | 3.7E-04 | 0.0047 | 0.0051 | 3.0E-04 | 0.0014 | 0.0017 |
| Vanadium | 0.0075 | 0.012 | 0.020 | 0.0015 | 9.6E-04 | 0.0025 |
| Zinc[c] | 0.0021 | 0.021 | 0.023 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.9E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.7E-05 | 8.3E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.3E-05 | 8.4E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.6E-05 | 3.5E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 4.1E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.1E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 3.0E-04 | 9.5E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 2.0E-04 | 8.6E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.4E-04 | 7.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0028 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 9.3E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 4.0E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.3E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.4E-04 | 0.0034 | - | - | - |
| Fluorene[ac] | - | 1.7E-05 | 1.7E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 8.1E-05 | 4.1E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.5E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.6E-05 | 6.8E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 0.0010 | 0.014 | - | - | - |
| Pyrene[c] | 0.0014 | 5.4E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0099 | 0.015 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0039 | 0.0049 | 2.8E-04 | 4.0E-04 | 6.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.6E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 1.0E-06 | 1.0E-06 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0011 | 0.0017 | - | - | - |
| Pentachlorobenzene[ac] | - | 7.2E-07 | 7.2E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.2E-04 | 6.5E-04 | 4.4E-05 | 8.5E-06 | 5.2E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.9E-07 | 2.8E-04 | 1.1E-04 | 1.1E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 6.1E-09 | 0.0091 | 0.0035 | 8.8E-10 | 0.0035 |
| Benzene | 0.17 | 9.7E-04 | 0.17 | 0.41 | 8.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.050 | 0.052 | - | - | - |
| Bromoform | 0.0014 | 0.0054 | 0.0069 | 5.4E-04 | 7.6E-04 | 0.0013 |
| Bromomethane | 0.0018 | 0.0016 | 0.0034 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.3E-05 | 0.014 | 0.31 | 1.1E-04 | 0.31 |
| Chloroform | 0.0055 | 2.7E-05 | 0.0055 | 0.23 | 4.2E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 9.3E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.4E-05 | 4.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.7E-05 | 2.9E-04 | 0.0058 | 6.6E-04 | 0.0064 |
| Ethylbenzene | - | - | - | 0.0012 | 8.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 4.0E-04 | 0.0036 | 0.0017 | 8.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.017 | 0.57 | 0.38 | 0.0043 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 8.7E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.5E-06 | 6.1E-05 | 0.0014 | 1.3E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 7.3E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 8.5E-07 | 3.2E-05 | 1.9E-05 | 2.0E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.9E-06 | 0.0024 | 0.045 | 3.4E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.4E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.2E-05 | 1.2E-05 | 0.0059 | 0.036 | 0.042 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.5E-04 | 6.8E-04 | 0.0066 | 6.8E-04 | 0.0073 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.026 | 0.031 | 0.0083 | 7.4E-04 | 0.0090 |
| Nasal Irritants | 0.0079 | 0.012 | 0.020 | 0.0079 | 6.8E-04 | 0.0085 |
| Respiratory Irritants | 0.33 | 2.3 | 2.6 | 1.1 | 1.2 | 2.3 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0031 | 0.029 | 0.55 | 0.0019 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0067 | 0.0067 | - | 0.014 | 0.014 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.080 | 0.24 | 0.29 | 0.030 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.081 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.052 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 2.9E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 3.6E-04 | 0.0064 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 5.5E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0087 | 0.039 |
| Boron[c] | 0.019 | 0.022 | 0.041 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.073 | 0.097 |
| Chromium (hexavalent)[a] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.015 | 0.021 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.026 | 0.036 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 1.2E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 8.7E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.057 | 0.065 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.6E-04 | 7.6E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 3.0E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0059 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 8.9E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 4.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Hospitals**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0031 | 0.0079 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 2.7E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 3.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.7E-09 | 0.0091 | 0.0035 | 2.8E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 2.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.4E-04 | 7.8E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.6E-06 | 0.014 | 0.31 | 3.4E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.1E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 2.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.6E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.38 | 0.0014 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.2E-07 | 6.0E-05 | 0.0014 | 4.1E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 6.2E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.5E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0071 | 0.012 | 0.0083 | 2.3E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.63 | 0.96 | 1.1 | 0.39 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.5E-04 | 0.027 | 0.55 | 6.0E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0067 | 0.0067 | - | 0.014 | 0.014 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0044 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.12 | 0.12 |
| Hydrogen Fluoride (HF)[ac] | - | 0.053 | 0.053 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.082 | 0.24 | 0.29 | 0.031 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.049 | 0.049 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.082 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.021 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.053 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.0E-04 | 0.0023 | 1.2E-04 | 2.9E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0031 | 0.025 | 0.0060 | 3.7E-04 | 0.0064 |
| Barium | 0.0040 | 6.2E-04 | 0.0046 | 8.2E-04 | 5.6E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0088 | 0.039 |
| Boron[c] | 0.019 | 0.022 | 0.041 | - | - | - |
| Cadmium | 0.015 | 0.10 | 0.12 | 0.024 | 0.074 | 0.098 |
| Chromium (hexavalent)[a] | - | 0.0047 | 0.0047 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0033 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.042 | 0.050 | 0.0060 | 0.015 | 0.021 |
| Lead | 0.0081 | 0.049 | 0.057 | 0.0100 | 0.026 | 0.036 |
| Mercury - Inorganic[a] | - | 0.037 | 0.037 | - | 0.0020 | 0.0020 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.5E-04 | 0.0040 | 3.0E-04 | 1.3E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.049 | 0.057 | 3.4E-04 | 8.8E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.057 | 0.065 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.6E-04 | 7.7E-04 |
| Vanadium | 0.0075 | 0.0034 | 0.011 | 0.0015 | 3.1E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0059 | 0.0079 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.4E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.1E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.5E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 9.1E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.6E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.6E-06 | 4.6E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.2E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.0E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.4E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0032 | 0.0079 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.3E-04 | 4.1E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.8E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.0E-04 | 9.1E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.0E-07 | 2.0E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.0E-05 | 4.9E-04 | 4.4E-05 | 2.7E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.9E-07 | 2.8E-04 | 1.1E-04 | 3.4E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.7E-09 | 0.0091 | 0.0035 | 2.8E-10 | 0.0035 |
| Benzene | 0.17 | 2.7E-04 | 0.17 | 0.41 | 2.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.4E-04 | 7.8E-04 |
| Bromomethane | 0.0018 | 4.4E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.6E-06 | 0.014 | 0.31 | 3.5E-05 | 0.31 |
| Chloroform | 0.0055 | 7.5E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.9E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.1E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 2.7E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.6E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0046 | 0.55 | 0.38 | 0.0014 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.4E-06 | 9.0E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.2E-07 | 6.0E-05 | 0.0014 | 4.2E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.0E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 6.3E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.1E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.6E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.2E-06 | 3.9E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.0E-05 | 5.7E-04 | 0.0066 | 2.2E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0071 | 0.012 | 0.0083 | 2.4E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0033 | 0.011 | 0.0079 | 2.2E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.63 | 0.96 | 1.1 | 0.40 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.4E-04 | 0.027 | 0.55 | 6.1E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0079 | 0.0079 | - | 0.017 | 0.017 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0052 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.21 | 0.21 | - | 0.14 | 0.14 |
| Hydrogen Fluoride (HF)[ac] | - | 0.062 | 0.062 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.098 | 0.26 | 0.29 | 0.036 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.058 | 0.058 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.096 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.024 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.14 | 0.17 | 0.070 | 0.064 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 9.5E-04 | 0.0024 | 1.2E-04 | 3.5E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0036 | 0.026 | 0.0060 | 4.4E-04 | 0.0065 |
| Barium | 0.0040 | 7.3E-04 | 0.0047 | 8.2E-04 | 6.7E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.029 | 0.066 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.019 | 0.026 | 0.045 | - | - | - |
| Cadmium | 0.015 | 0.12 | 0.14 | 0.024 | 0.088 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.0055 | 0.0055 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0039 | 0.011 | - | - | - |
| Cobalt | 0.0074 | 0.050 | 0.057 | 0.0060 | 0.018 | 0.024 |
| Lead | 0.0081 | 0.058 | 0.066 | 0.0100 | 0.032 | 0.042 |
| Mercury - Inorganic[a] | - | 0.043 | 0.043 | - | 0.0024 | 0.0024 |
| Nickel[c] | 0.0018 | 0.025 | 0.027 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 4.2E-04 | 0.0041 | 3.0E-04 | 1.5E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.058 | 0.066 | 3.4E-04 | 0.0011 | 0.0014 |
| Thallium[c] | 0.0073 | 0.067 | 0.075 | - | - | - |
| Tin | 3.7E-04 | 0.0015 | 0.0019 | 3.0E-04 | 5.6E-04 | 8.6E-04 |
| Vanadium | 0.0075 | 0.0040 | 0.012 | 0.0015 | 3.7E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0069 | 0.0090 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 3.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.5E-05 | 7.8E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.4E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 5.2E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.3E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.5E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 9.6E-05 | 7.6E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 6.5E-05 | 7.3E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.4E-04 | 4.9E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0011 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 3.0E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.3E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 4.2E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.4E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 5.4E-06 | 5.4E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.6E-05 | 3.6E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.9E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 5.2E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 3.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.7E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0038 | 0.0085 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0012 | 0.0023 | 2.8E-04 | 1.5E-04 | 4.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.2E-07 | 9.8E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.4E-07 | 3.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.6E-04 | 9.6E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.3E-07 | 2.3E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 7.1E-05 | 5.0E-04 | 4.4E-05 | 3.3E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.2E-07 | 2.8E-04 | 1.1E-04 | 4.1E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.0E-09 | 0.0091 | 0.0035 | 3.4E-10 | 0.0035 |
| Benzene | 0.17 | 3.2E-04 | 0.17 | 0.41 | 3.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.016 | 0.018 | - | - | - |
| Bromoform | 0.0014 | 0.0018 | 0.0032 | 5.4E-04 | 2.9E-04 | 8.3E-04 |
| Bromomethane | 0.0018 | 5.2E-04 | 0.0023 | - | - | - |
| Carbon tetrachloride | 0.014 | 4.2E-06 | 0.014 | 0.31 | 4.2E-05 | 0.31 |
| Chloroform | 0.0055 | 8.8E-06 | 0.0055 | 0.23 | 1.6E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 3.0E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.7E-06 | 3.4E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 2.2E-05 | 2.4E-04 | 0.0058 | 2.5E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.3E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.3E-04 | 0.0033 | 0.0017 | 3.1E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0055 | 0.55 | 0.38 | 0.0017 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.8E-06 | 9.4E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.9E-07 | 6.0E-05 | 0.0014 | 5.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.7E-07 | 3.1E-05 | 1.9E-05 | 7.5E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.6E-06 | 0.0024 | 0.045 | 1.3E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.1E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.8E-06 | 4.5E-06 | 0.0059 | 0.014 | 0.020 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.7E-05 | 5.8E-04 | 0.0066 | 2.6E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0084 | 0.013 | 0.0083 | 2.8E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0039 | 0.012 | 0.0079 | 2.6E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.75 | 1.1 | 1.1 | 0.47 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 1.0E-03 | 0.027 | 0.55 | 7.3E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.015 | 0.015 | - | 0.018 | 0.018 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0097 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.39 | 0.39 | - | 0.15 | 0.15 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.18 | 0.34 | 0.29 | 0.039 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.062 | 0.062 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.10 | 0.78 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.026 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.26 | 0.29 | 0.070 | 0.068 | 0.14 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0018 | 0.0032 | 1.2E-04 | 3.7E-05 | 1.6E-04 |
| Arsenic | 0.022 | 0.0068 | 0.029 | 0.0060 | 4.7E-04 | 0.0065 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 7.1E-05 | 8.9E-04 |
| Beryllium | 0.037 | 0.054 | 0.091 | 0.030 | 0.011 | 0.041 |
| Boron[c] | 0.019 | 0.050 | 0.068 | - | - | - |
| Cadmium | 0.015 | 0.23 | 0.24 | 0.024 | 0.094 | 0.12 |
| Chromium (hexavalent)[a] | - | 0.010 | 0.010 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0073 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.094 | 0.10 | 0.0060 | 0.019 | 0.026 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.034 | 0.044 |
| Mercury - Inorganic[a] | - | 0.081 | 0.081 | - | 0.0025 | 0.0025 |
| Nickel[c] | 0.0018 | 0.047 | 0.049 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.8E-04 | 0.0045 | 3.0E-04 | 1.6E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0011 | 0.0015 |
| Thallium[c] | 0.0073 | 0.13 | 0.13 | - | - | - |
| Tin | 3.7E-04 | 0.0029 | 0.0032 | 3.0E-04 | 5.9E-04 | 8.9E-04 |
| Vanadium | 0.0075 | 0.0075 | 0.015 | 0.0015 | 3.9E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.0E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.7E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.6E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.7E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.5E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.5E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.8E-04 | 8.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.7E-04 | 6.1E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0012 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.6E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.4E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.8E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.7E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.0E-05 | 1.0E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.9E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 6.3E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 9.8E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.1E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.3E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0040 | 0.0088 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0023 | 0.0034 | 2.8E-04 | 1.6E-04 | 4.4E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.2E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.3E-07 | 6.3E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.7E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.4E-07 | 4.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.3E-04 | 5.6E-04 | 4.4E-05 | 3.5E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.2E-07 | 2.8E-04 | 1.1E-04 | 4.3E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.7E-09 | 0.0091 | 0.0035 | 3.6E-10 | 0.0035 |
| Benzene | 0.17 | 5.9E-04 | 0.17 | 0.41 | 3.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.030 | 0.032 | - | - | - |
| Bromoform | 0.0014 | 0.0033 | 0.0047 | 5.4E-04 | 3.1E-04 | 8.5E-04 |
| Bromomethane | 0.0018 | 9.7E-04 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 7.9E-06 | 0.014 | 0.31 | 4.4E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 1.7E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.7E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.1E-05 | 2.6E-04 | 0.0058 | 2.7E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.4E-04 | 0.0034 | 0.0017 | 3.3E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.010 | 0.56 | 0.38 | 0.0018 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.3E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.2E-07 | 6.1E-05 | 0.0014 | 5.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.1E-07 | 3.1E-05 | 1.9E-05 | 8.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.9E-06 | 0.0024 | 0.045 | 1.4E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 9.7E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.1E-06 | 7.8E-06 | 0.0059 | 0.015 | 0.021 |
| Xylenes, m-, p- and o- | 5.3E-04 | 8.9E-05 | 6.2E-04 | 0.0066 | 2.8E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.016 | 0.021 | 0.0083 | 3.0E-04 | 0.0086 |
| Nasal Irritants | 0.0079 | 0.0074 | 0.015 | 0.0079 | 2.8E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 1.4 | 1.7 | 1.1 | 0.51 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 7.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.023 | 0.023 | - | 0.047 | 0.047 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.015 | 0.084 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.59 | 0.59 | - | 0.39 | 0.39 |
| Hydrogen Fluoride (HF)[ac] | - | 0.18 | 0.18 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.28 | 0.44 | 0.29 | 0.10 | 0.39 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.16 | 0.16 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.27 | 0.95 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.066 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.40 | 0.42 | 0.070 | 0.18 | 0.25 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0027 | 0.0042 | 1.2E-04 | 9.6E-05 | 2.2E-04 |
| Arsenic | 0.022 | 0.010 | 0.032 | 0.0060 | 0.0012 | 0.0073 |
| Barium | 0.0040 | 0.0021 | 0.0061 | 8.2E-04 | 1.9E-04 | 0.0010 |
| Beryllium | 0.037 | 0.082 | 0.12 | 0.030 | 0.029 | 0.059 |
| Boron[c] | 0.019 | 0.075 | 0.094 | - | - | - |
| Cadmium | 0.015 | 0.35 | 0.36 | 0.024 | 0.25 | 0.27 |
| Chromium (hexavalent)[a] | - | 0.016 | 0.016 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.011 | 0.018 | - | - | - |
| Cobalt | 0.0074 | 0.14 | 0.15 | 0.0060 | 0.051 | 0.057 |
| Lead | 0.0081 | 0.16 | 0.17 | 0.0100 | 0.088 | 0.098 |
| Mercury - Inorganic[a] | - | 0.12 | 0.12 | - | 0.0066 | 0.0066 |
| Nickel[c] | 0.0018 | 0.072 | 0.073 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 0.0012 | 0.0049 | 3.0E-04 | 4.2E-05 | 3.4E-04 |
| Silver | 0.0083 | 0.17 | 0.17 | 3.4E-04 | 0.0029 | 0.0033 |
| Thallium[c] | 0.0073 | 0.19 | 0.20 | - | - | - |
| Tin | 3.7E-04 | 0.0043 | 0.0047 | 3.0E-04 | 0.0015 | 0.0018 |
| Vanadium | 0.0075 | 0.011 | 0.019 | 0.0015 | 0.0010 | 0.0026 |
| Zinc[c] | 0.0021 | 0.020 | 0.022 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 9.2E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 7.1E-05 | 8.2E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 4.0E-05 | 8.3E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.5E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.8E-05 | 7.3E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 1.0E-05 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.7E-04 | 9.3E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.9E-04 | 8.5E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 4.1E-04 | 7.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0030 | 0.071 |
| Benzo(e)pyrene[c] | 6.6E-04 | 8.6E-05 | 7.5E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.7E-05 | 5.1E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 4.1E-04 | 0.0033 | - | - | - |
| Fluorene[ac] | - | 1.5E-05 | 1.5E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 7.4E-05 | 4.0E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.6E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.5E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 9.3E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.9E-04 | 0.0019 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.011 | 0.015 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0036 | 0.0046 | 2.8E-04 | 4.2E-04 | 7.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 3.3E-07 | 1.2E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 9.6E-07 | 9.6E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 0.0010 | 0.0016 | - | - | - |
| Pentachlorobenzene[ac] | - | 6.7E-07 | 6.7E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 2.0E-04 | 6.3E-04 | 4.4E-05 | 9.0E-06 | 5.3E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 6.3E-07 | 2.8E-04 | 1.1E-04 | 1.1E-07 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 5.6E-09 | 0.0091 | 0.0035 | 9.3E-10 | 0.0035 |
| Benzene | 0.17 | 9.0E-04 | 0.17 | 0.41 | 9.4E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.046 | 0.048 | - | - | - |
| Bromoform | 0.0014 | 0.0050 | 0.0064 | 5.4E-04 | 8.1E-04 | 0.0013 |
| Bromomethane | 0.0018 | 0.0015 | 0.0033 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.2E-05 | 0.014 | 0.31 | 1.2E-04 | 0.31 |
| Chloroform | 0.0055 | 2.5E-05 | 0.0055 | 0.23 | 4.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 8.6E-06 | 1.7E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.3E-05 | 4.2E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 6.2E-05 | 2.8E-04 | 0.0058 | 7.0E-04 | 0.0065 |
| Ethylbenzene | - | - | - | 0.0012 | 9.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.7E-04 | 0.0035 | 0.0017 | 8.7E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.016 | 0.56 | 0.38 | 0.0046 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 8.1E-06 | 1.5E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.4E-06 | 6.1E-05 | 0.0014 | 1.4E-05 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 6.7E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 7.8E-07 | 3.2E-05 | 1.9E-05 | 2.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 4.5E-06 | 0.0024 | 0.045 | 3.6E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 2.5E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 1.1E-05 | 1.1E-05 | 0.0059 | 0.038 | 0.044 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.4E-04 | 6.7E-04 | 0.0066 | 7.2E-04 | 0.0073 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.024 | 0.029 | 0.0083 | 7.8E-04 | 0.0090 |
| Nasal Irritants | 0.0079 | 0.011 | 0.019 | 0.0079 | 7.3E-04 | 0.0086 |
| Respiratory Irritants | 0.33 | 2.1 | 2.5 | 1.1 | 1.3 | 2.4 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0028 | 0.029 | 0.55 | 0.0020 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0070 | 0.0070 | - | 0.013 | 0.013 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0046 | 0.074 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.18 | 0.18 | - | 0.11 | 0.11 |
| Hydrogen Fluoride (HF)[ac] | - | 0.055 | 0.055 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.092 | 0.25 | 0.29 | 0.029 | 0.32 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.047 | 0.047 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.078 | 0.76 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.020 | 0.31 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.12 | 0.15 | 0.070 | 0.049 | 0.12 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 8.3E-04 | 0.0023 | 1.2E-04 | 2.7E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0032 | 0.025 | 0.0060 | 3.4E-04 | 0.0064 |
| Barium | 0.0040 | 6.4E-04 | 0.0046 | 8.2E-04 | 5.2E-05 | 8.7E-04 |
| Beryllium | 0.037 | 0.025 | 0.062 | 0.030 | 0.0082 | 0.038 |
| Boron[c] | 0.019 | 0.023 | 0.042 | - | - | - |
| Cadmium | 0.015 | 0.11 | 0.12 | 0.024 | 0.069 | 0.093 |
| Chromium (hexavalent)[a] | - | 0.0049 | 0.0049 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0034 | 0.010 | - | - | - |
| Cobalt | 0.0074 | 0.044 | 0.051 | 0.0060 | 0.014 | 0.020 |
| Lead | 0.0081 | 0.051 | 0.059 | 0.0100 | 0.025 | 0.035 |
| Mercury - Inorganic[a] | - | 0.038 | 0.038 | - | 0.0018 | 0.0018 |
| Nickel[c] | 0.0018 | 0.022 | 0.024 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.7E-04 | 0.0040 | 3.0E-04 | 1.2E-05 | 3.1E-04 |
| Silver | 0.0083 | 0.051 | 0.059 | 3.4E-04 | 8.2E-04 | 0.0012 |
| Thallium[c] | 0.0073 | 0.059 | 0.067 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0017 | 3.0E-04 | 4.3E-04 | 7.3E-04 |
| Vanadium | 0.0075 | 0.0035 | 0.011 | 0.0015 | 2.9E-04 | 0.0018 |
| Zinc[c] | 0.0021 | 0.0061 | 0.0081 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.8E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.2E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.6E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.2E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 3.1E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 8.4E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.8E-05 | 7.2E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.3E-04 | 4.7E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 8.5E-04 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.7E-05 | 6.9E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.7E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.3E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 4.8E-06 | 4.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.3E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 4.6E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.6E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.9E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.5E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0029 | 0.0077 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0011 | 0.0021 | 2.8E-04 | 1.2E-04 | 4.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.0E-07 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 3.0E-07 | 3.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 3.1E-04 | 9.2E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 2.1E-07 | 2.1E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 6.3E-05 | 4.9E-04 | 4.4E-05 | 2.5E-06 | 4.6E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 2.0E-07 | 2.8E-04 | 1.1E-04 | 3.2E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.7E-09 | 0.0091 | 0.0035 | 2.6E-10 | 0.0035 |
| Benzene | 0.17 | 2.8E-04 | 0.17 | 0.41 | 2.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.014 | 0.016 | - | - | - |
| Bromoform | 0.0014 | 0.0016 | 0.0030 | 5.4E-04 | 2.3E-04 | 7.6E-04 |
| Bromomethane | 0.0018 | 4.6E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.7E-06 | 0.014 | 0.31 | 3.2E-05 | 0.31 |
| Chloroform | 0.0055 | 7.8E-06 | 0.0055 | 0.23 | 1.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.6E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 4.1E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.9E-05 | 2.4E-04 | 0.0058 | 2.0E-04 | 0.0059 |
| Ethylbenzene | - | - | - | 0.0012 | 2.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0048 | 0.55 | 0.38 | 0.0013 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.5E-06 | 9.1E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.3E-07 | 6.0E-05 | 0.0014 | 3.9E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 2.1E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.4E-07 | 3.1E-05 | 1.9E-05 | 5.8E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.4E-06 | 0.0024 | 0.045 | 1.0E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 7.1E-06 | 3.6E-04 |
| Vinyl chloride | 7.2E-07 | 3.3E-06 | 4.0E-06 | 0.0059 | 0.011 | 0.017 |
| Xylenes, m-, p- and o- | 5.3E-04 | 4.2E-05 | 5.8E-04 | 0.0066 | 2.0E-04 | 0.0068 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0074 | 0.012 | 0.0083 | 2.2E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0035 | 0.011 | 0.0079 | 2.0E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.66 | 0.99 | 1.1 | 0.37 | 1.5 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.8E-04 | 0.027 | 0.55 | 5.7E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.011 | 0.011 | - | 0.029 | 0.029 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0075 | 0.076 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.30 | 0.30 | - | 0.24 | 0.24 |
| Hydrogen Fluoride (HF)[ac] | - | 0.089 | 0.089 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.15 | 0.31 | 0.29 | 0.059 | 0.35 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.098 | 0.098 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.16 | 0.84 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.041 | 0.34 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.20 | 0.23 | 0.070 | 0.11 | 0.18 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0014 | 0.0028 | 1.2E-04 | 5.8E-05 | 1.8E-04 |
| Arsenic | 0.022 | 0.0052 | 0.027 | 0.0060 | 7.4E-04 | 0.0068 |
| Barium | 0.0040 | 0.0011 | 0.0050 | 8.2E-04 | 1.1E-04 | 9.3E-04 |
| Beryllium | 0.037 | 0.041 | 0.078 | 0.030 | 0.018 | 0.048 |
| Boron[c] | 0.019 | 0.038 | 0.057 | - | - | - |
| Cadmium | 0.015 | 0.17 | 0.19 | 0.024 | 0.15 | 0.17 |
| Chromium (hexavalent)[a] | - | 0.0079 | 0.0079 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0056 | 0.012 | - | - | - |
| Cobalt | 0.0074 | 0.072 | 0.079 | 0.0060 | 0.031 | 0.037 |
| Lead | 0.0081 | 0.083 | 0.091 | 0.0100 | 0.053 | 0.063 |
| Mercury - Inorganic[a] | - | 0.062 | 0.062 | - | 0.0040 | 0.0040 |
| Nickel[c] | 0.0018 | 0.036 | 0.038 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 6.0E-04 | 0.0043 | 3.0E-04 | 2.5E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.083 | 0.092 | 3.4E-04 | 0.0018 | 0.0021 |
| Thallium[c] | 0.0073 | 0.097 | 0.10 | - | - | - |
| Tin | 3.7E-04 | 0.0022 | 0.0026 | 3.0E-04 | 9.3E-04 | 0.0012 |
| Vanadium | 0.0075 | 0.0058 | 0.013 | 0.0015 | 6.2E-04 | 0.0022 |
| Zinc[c] | 0.0021 | 0.0099 | 0.012 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 4.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 3.6E-05 | 7.9E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.0E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 7.5E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.9E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 5.0E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.4E-04 | 8.0E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 9.4E-05 | 7.5E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.1E-04 | 5.5E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0018 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 4.3E-05 | 7.0E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.9E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 6.0E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.1E-04 | 0.0031 | - | - | - |
| Fluorene[ac] | - | 7.8E-06 | 7.8E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 3.7E-05 | 3.7E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 9.9E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 7.5E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 4.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 2.5E-04 | 0.0016 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0064 | 0.011 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0018 | 0.0028 | 2.8E-04 | 2.5E-04 | 5.3E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 1.7E-07 | 1.0E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 4.8E-07 | 4.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 5.1E-04 | 0.0011 | - | - | - |
| Pentachlorobenzene[ac] | - | 3.4E-07 | 3.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.0E-04 | 5.3E-04 | 4.4E-05 | 5.5E-06 | 4.9E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 3.2E-07 | 2.8E-04 | 1.1E-04 | 6.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 2.8E-09 | 0.0091 | 0.0035 | 5.6E-10 | 0.0035 |
| Benzene | 0.17 | 4.5E-04 | 0.17 | 0.41 | 5.7E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.023 | 0.025 | - | - | - |
| Bromoform | 0.0014 | 0.0025 | 0.0040 | 5.4E-04 | 4.9E-04 | 0.0010 |
| Bromomethane | 0.0018 | 7.5E-04 | 0.0025 | - | - | - |
| Carbon tetrachloride | 0.014 | 6.1E-06 | 0.014 | 0.31 | 7.0E-05 | 0.31 |
| Chloroform | 0.0055 | 1.3E-05 | 0.0055 | 0.23 | 2.7E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 4.3E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 6.7E-06 | 3.6E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 3.1E-05 | 2.5E-04 | 0.0058 | 4.2E-04 | 0.0062 |
| Ethylbenzene | - | - | - | 0.0012 | 5.5E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.9E-04 | 0.0034 | 0.0017 | 5.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0079 | 0.56 | 0.38 | 0.0028 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 4.1E-06 | 1.1E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 7.0E-07 | 6.1E-05 | 0.0014 | 8.3E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 3.4E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 3.9E-07 | 3.1E-05 | 1.9E-05 | 1.3E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 2.3E-06 | 0.0024 | 0.045 | 2.2E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.5E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 5.4E-06 | 6.1E-06 | 0.0059 | 0.023 | 0.029 |
| Xylenes, m-, p- and o- | 5.3E-04 | 6.8E-05 | 6.0E-04 | 0.0066 | 4.4E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.012 | 0.017 | 0.0083 | 4.7E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0057 | 0.014 | 0.0079 | 4.4E-04 | 0.0083 |
| Respiratory Irritants | 0.33 | 1.1 | 1.4 | 1.1 | 0.79 | 1.9 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0014 | 0.028 | 0.55 | 0.0012 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.0065 | 0.0065 | - | 0.016 | 0.016 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0043 | 0.073 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.17 | 0.17 | - | 0.13 | 0.13 |
| Hydrogen Fluoride (HF)[ac] | - | 0.051 | 0.051 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.084 | 0.25 | 0.29 | 0.034 | 0.33 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.054 | 0.054 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.090 | 0.77 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.023 | 0.32 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.11 | 0.14 | 0.070 | 0.059 | 0.13 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 7.8E-04 | 0.0023 | 1.2E-04 | 3.2E-05 | 1.5E-04 |
| Arsenic | 0.022 | 0.0030 | 0.025 | 0.0060 | 4.1E-04 | 0.0064 |
| Barium | 0.0040 | 6.0E-04 | 0.0046 | 8.2E-04 | 6.2E-05 | 8.8E-04 |
| Beryllium | 0.037 | 0.024 | 0.061 | 0.030 | 0.0098 | 0.040 |
| Boron[c] | 0.019 | 0.022 | 0.040 | - | - | - |
| Cadmium | 0.015 | 0.100 | 0.11 | 0.024 | 0.083 | 0.11 |
| Chromium (hexavalent)[a] | - | 0.0046 | 0.0046 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0032 | 0.0099 | - | - | - |
| Cobalt | 0.0074 | 0.041 | 0.049 | 0.0060 | 0.017 | 0.023 |
| Lead | 0.0081 | 0.048 | 0.056 | 0.0100 | 0.029 | 0.039 |
| Mercury - Inorganic[a] | - | 0.036 | 0.036 | - | 0.0022 | 0.0022 |
| Nickel[c] | 0.0018 | 0.021 | 0.023 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 3.4E-04 | 0.0040 | 3.0E-04 | 1.4E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.048 | 0.056 | 3.4E-04 | 9.9E-04 | 0.0013 |
| Thallium[c] | 0.0073 | 0.056 | 0.063 | - | - | - |
| Tin | 3.7E-04 | 0.0013 | 0.0016 | 3.0E-04 | 5.2E-04 | 8.2E-04 |
| Vanadium | 0.0075 | 0.0033 | 0.011 | 0.0015 | 3.4E-04 | 0.0019 |
| Zinc[c] | 0.0021 | 0.0057 | 0.0078 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 2.7E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 2.1E-05 | 7.7E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 1.2E-05 | 8.1E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 4.3E-06 | 3.3E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 1.1E-05 | 7.0E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 2.9E-06 | 3.3E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 7.9E-05 | 7.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 5.4E-05 | 7.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 1.2E-04 | 4.6E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0010 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 2.5E-05 | 6.8E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 1.1E-05 | 4.8E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 3.4E-06 | 3.3E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 1.2E-04 | 0.0030 | - | - | - |
| Fluorene[ac] | - | 4.5E-06 | 4.5E-06 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 2.1E-05 | 3.5E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 5.5E-06 | 1.1E-04 |
| Perylene[c] | 6.6E-04 | 4.3E-06 | 6.6E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 2.7E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 1.4E-04 | 0.0015 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0035 | 0.0083 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0010 | 0.0021 | 2.8E-04 | 1.4E-04 | 4.2E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 9.6E-08 | 9.6E-07 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 2.8E-07 | 2.8E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 2.9E-04 | 9.0E-04 | - | - | - |
| Pentachlorobenzene[ac] | - | 1.9E-07 | 1.9E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 5.9E-05 | 4.9E-04 | 4.4E-05 | 3.0E-06 | 4.7E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 1.8E-07 | 2.8E-04 | 1.1E-04 | 3.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 1.6E-09 | 0.0091 | 0.0035 | 3.1E-10 | 0.0035 |
| Benzene | 0.17 | 2.6E-04 | 0.17 | 0.41 | 3.1E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| Bromoform | 0.0014 | 0.0015 | 0.0029 | 5.4E-04 | 2.7E-04 | 8.1E-04 |
| Bromomethane | 0.0018 | 4.3E-04 | 0.0022 | - | - | - |
| Carbon tetrachloride | 0.014 | 3.5E-06 | 0.014 | 0.31 | 3.9E-05 | 0.31 |
| Chloroform | 0.0055 | 7.3E-06 | 0.0055 | 0.23 | 1.5E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 2.5E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 3.8E-06 | 3.3E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 1.8E-05 | 2.4E-04 | 0.0058 | 2.4E-04 | 0.0060 |
| Ethylbenzene | - | - | - | 0.0012 | 3.1E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 1.1E-04 | 0.0033 | 0.0017 | 2.9E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.0045 | 0.55 | 0.38 | 0.0016 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 2.3E-06 | 8.9E-06 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 4.0E-07 | 6.0E-05 | 0.0014 | 4.6E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 1.9E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 2.3E-07 | 3.1E-05 | 1.9E-05 | 7.0E-08 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 1.3E-06 | 0.0024 | 0.045 | 1.2E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 8.5E-06 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 3.1E-06 | 3.8E-06 | 0.0059 | 0.013 | 0.019 |
| Xylenes, m-, p- and o- | 5.3E-04 | 3.9E-05 | 5.7E-04 | 0.0066 | 2.4E-04 | 0.0069 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.0069 | 0.012 | 0.0083 | 2.6E-04 | 0.0085 |
| Nasal Irritants | 0.0079 | 0.0032 | 0.011 | 0.0079 | 2.4E-04 | 0.0081 |
| Respiratory Irritants | 0.33 | 0.62 | 0.95 | 1.1 | 0.44 | 1.6 |
| Neurological Effects (Neurotoxicants) | 0.026 | 8.2E-04 | 0.027 | 0.55 | 6.8E-04 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.015 | 0.015 | - | 0.024 | 0.024 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.0098 | 0.079 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.39 | 0.39 | - | 0.20 | 0.20 |
| Hydrogen Fluoride (HF)[ac] | - | 0.12 | 0.12 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.19 | 0.35 | 0.29 | 0.052 | 0.34 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.093 | 0.093 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.15 | 0.84 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.039 | 0.33 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.26 | 0.29 | 0.070 | 0.090 | 0.16 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0018 | 0.0033 | 1.2E-04 | 4.9E-05 | 1.7E-04 |
| Arsenic | 0.022 | 0.0069 | 0.029 | 0.0060 | 6.3E-04 | 0.0067 |
| Barium | 0.0040 | 0.0014 | 0.0054 | 8.2E-04 | 9.5E-05 | 9.1E-04 |
| Beryllium | 0.037 | 0.055 | 0.091 | 0.030 | 0.015 | 0.045 |
| Boron[c] | 0.019 | 0.050 | 0.069 | - | - | - |
| Cadmium | 0.015 | 0.23 | 0.24 | 0.024 | 0.13 | 0.15 |
| Chromium (hexavalent)[a] | - | 0.010 | 0.010 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0074 | 0.014 | - | - | - |
| Cobalt | 0.0074 | 0.095 | 0.10 | 0.0060 | 0.026 | 0.032 |
| Lead | 0.0081 | 0.11 | 0.12 | 0.0100 | 0.045 | 0.055 |
| Mercury - Inorganic[a] | - | 0.082 | 0.082 | - | 0.0034 | 0.0034 |
| Nickel[c] | 0.0018 | 0.048 | 0.049 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 7.9E-04 | 0.0045 | 3.0E-04 | 2.1E-05 | 3.2E-04 |
| Silver | 0.0083 | 0.11 | 0.12 | 3.4E-04 | 0.0015 | 0.0018 |
| Thallium[c] | 0.0073 | 0.13 | 0.14 | - | - | - |
| Tin | 3.7E-04 | 0.0029 | 0.0033 | 3.0E-04 | 7.9E-04 | 0.0011 |
| Vanadium | 0.0075 | 0.0076 | 0.015 | 0.0015 | 5.2E-04 | 0.0021 |
| Zinc[c] | 0.0021 | 0.013 | 0.015 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 6.1E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 4.8E-05 | 8.0E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 2.7E-05 | 8.2E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 9.8E-06 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 2.5E-05 | 7.1E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 6.6E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 1.8E-04 | 8.4E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.2E-04 | 7.8E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 2.7E-04 | 6.2E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0015 | 0.069 |
| Benzo(e)pyrene[c] | 6.6E-04 | 5.7E-05 | 7.2E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 2.5E-05 | 4.9E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 7.9E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 2.7E-04 | 0.0032 | - | - | - |
| Fluorene[ac] | - | 1.0E-05 | 1.0E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 4.9E-05 | 3.8E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 8.4E-06 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 9.9E-06 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 6.2E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 3.3E-04 | 0.0017 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0054 | 0.010 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0024 | 0.0034 | 2.8E-04 | 2.2E-04 | 5.0E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.2E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 6.4E-07 | 6.4E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 6.8E-04 | 0.0013 | - | - | - |
| Pentachlorobenzene[ac] | - | 4.4E-07 | 4.4E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.4E-04 | 5.6E-04 | 4.4E-05 | 4.6E-06 | 4.8E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 4.2E-07 | 2.8E-04 | 1.1E-04 | 5.8E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 3.7E-09 | 0.0091 | 0.0035 | 4.8E-10 | 0.0035 |
| Benzene | 0.17 | 6.0E-04 | 0.17 | 0.41 | 4.8E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.031 | 0.033 | - | - | - |
| Bromoform | 0.0014 | 0.0033 | 0.0048 | 5.4E-04 | 4.1E-04 | 9.5E-04 |
| Bromomethane | 0.0018 | 9.8E-04 | 0.0028 | - | - | - |
| Carbon tetrachloride | 0.014 | 8.0E-06 | 0.014 | 0.31 | 5.9E-05 | 0.31 |
| Chloroform | 0.0055 | 1.7E-05 | 0.0055 | 0.23 | 2.3E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 5.7E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 8.8E-06 | 3.8E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 4.1E-05 | 2.6E-04 | 0.0058 | 3.6E-04 | 0.0061 |
| Ethylbenzene | - | - | - | 0.0012 | 4.6E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 2.4E-04 | 0.0034 | 0.0017 | 4.4E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.010 | 0.56 | 0.38 | 0.0024 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 5.4E-06 | 1.2E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 9.3E-07 | 6.1E-05 | 0.0014 | 7.0E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 4.5E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 5.2E-07 | 3.1E-05 | 1.9E-05 | 1.1E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.0E-06 | 0.0024 | 0.045 | 1.8E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.3E-05 | 3.7E-04 |
| Vinyl chloride | 7.2E-07 | 7.1E-06 | 7.9E-06 | 0.0059 | 0.020 | 0.025 |
| Xylenes, m-, p- and o- | 5.3E-04 | 9.0E-05 | 6.2E-04 | 0.0066 | 3.7E-04 | 0.0070 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.016 | 0.021 | 0.0083 | 4.0E-04 | 0.0087 |
| Nasal Irritants | 0.0079 | 0.0075 | 0.015 | 0.0079 | 3.7E-04 | 0.0082 |
| Respiratory Irritants | 0.33 | 1.4 | 1.8 | 1.1 | 0.69 | 1.8 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0019 | 0.028 | 0.55 | 0.0010 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | | | | |
| Ammonia[a] | - | 0.019 | 0.019 | - | 0.033 | 0.033 |
| Carbon Monoxide (CO)[c] | 0.069 | 0.012 | 0.081 | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.49 | 0.49 | - | 0.28 | 0.28 |
| Hydrogen Fluoride (HF)[ac] | - | 0.15 | 0.15 | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.16 | 0.24 | 0.40 | 0.29 | 0.072 | 0.36 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - | - | 0.13 | 0.13 |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - | 0.68 | 0.22 | 0.90 |
| Particulate Matter - Total [b] | - | - | - | 0.29 | 0.054 | 0.35 |
| Sulfur Dioxide ($SO_2$) | 0.028 | 0.33 | 0.36 | 0.070 | 0.12 | 0.19 |
| **Metals** | | | | | | |
| Antimony | 0.0015 | 0.0022 | 0.0037 | 1.2E-04 | 6.8E-05 | 1.9E-04 |
| Arsenic | 0.022 | 0.0086 | 0.031 | 0.0060 | 8.7E-04 | 0.0069 |
| Barium | 0.0040 | 0.0017 | 0.0057 | 8.2E-04 | 1.3E-04 | 9.5E-04 |
| Beryllium | 0.037 | 0.068 | 0.11 | 0.030 | 0.021 | 0.051 |
| Boron[c] | 0.019 | 0.063 | 0.081 | - | - | - |
| Cadmium | 0.015 | 0.29 | 0.30 | 0.024 | 0.17 | 0.20 |
| Chromium (hexavalent)[a] | - | 0.013 | 0.013 | - | - | - |
| Total Chromium (and compounds)[c] | 0.0067 | 0.0092 | 0.016 | - | - | - |
| Cobalt | 0.0074 | 0.12 | 0.13 | 0.0060 | 0.036 | 0.042 |
| Lead | 0.0081 | 0.14 | 0.14 | 0.0100 | 0.062 | 0.072 |
| Mercury - Inorganic[a] | - | 0.10 | 0.10 | - | 0.0046 | 0.0046 |
| Nickel[c] | 0.0018 | 0.060 | 0.061 | - | - | - |
| Phosphorus[bc] | - | - | - | - | - | - |
| Selenium | 0.0037 | 9.8E-04 | 0.0047 | 3.0E-04 | 3.0E-05 | 3.3E-04 |
| Silver | 0.0083 | 0.14 | 0.15 | 3.4E-04 | 0.0021 | 0.0024 |
| Thallium[c] | 0.0073 | 0.16 | 0.17 | - | - | - |
| Tin | 3.7E-04 | 0.0036 | 0.0040 | 3.0E-04 | 0.0011 | 0.0014 |
| Vanadium | 0.0075 | 0.0095 | 0.017 | 0.0015 | 7.2E-04 | 0.0023 |
| Zinc[c] | 0.0021 | 0.016 | 0.018 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | | | |
| Acenaphthene[c] | 0.0030 | 7.6E-05 | 0.0031 | - | - | - |
| Acenaphthylene[c] | 7.5E-04 | 5.9E-05 | 8.1E-04 | - | - | - |
| Anthracene[c] | 7.9E-04 | 3.3E-05 | 8.3E-04 | - | - | - |
| Benzo(a)anthracene[c] | 3.3E-04 | 1.2E-05 | 3.4E-04 | - | - | - |
| Benzo(b)fluoranthene[c] | 6.9E-04 | 3.1E-05 | 7.2E-04 | - | - | - |
| Benzo(k)fluoranthene[c] | 3.3E-04 | 8.3E-06 | 3.4E-04 | - | - | - |
| Benzo(a)fluorene[c] | 6.6E-04 | 2.3E-04 | 8.9E-04 | - | - | - |
| Benzo(b)fluorene[c] | 6.6E-04 | 1.6E-04 | 8.1E-04 | - | - | - |
| Benzo(ghi)perylene[c] | 3.4E-04 | 3.4E-04 | 6.8E-04 | - | - | - |
| Benzo(a)pyrene[b] | - | - | - | 0.068 | 0.0021 | 0.070 |
| Benzo(e)pyrene[c] | 6.6E-04 | 7.1E-05 | 7.3E-04 | - | - | - |
| Chrysene[c] | 4.7E-04 | 3.1E-05 | 5.0E-04 | - | - | - |
| Dibenzo(a,c)anthracene[abc] | - | - | - | - | - | - |
| Dibenzo(a,h)anthracene[c] | 3.3E-04 | 9.9E-06 | 3.4E-04 | - | - | - |
| Fluoranthene[c] | 0.0029 | 3.4E-04 | 0.0033 | - | - | - |
| Fluorene[ac] | - | 1.3E-05 | 1.3E-05 | - | - | - |
| Indeno(1,2,3 – cd)pyrene[c] | 3.3E-04 | 6.2E-05 | 3.9E-04 | - | - | - |
| 1-Methylnaphthalene[bc] | - | - | - | - | - | - |
| 2-Methylnaphthalene[bc] | - | - | - | - | - | - |
| Naphthalene[b] | - | - | - | 1.1E-04 | 1.2E-05 | 1.2E-04 |
| Perylene[c] | 6.6E-04 | 1.2E-05 | 6.7E-04 | - | - | - |
| Phenanthrene[c] | 0.013 | 7.8E-04 | 0.013 | - | - | - |
| Pyrene[c] | 0.0014 | 4.1E-04 | 0.0018 | - | - | - |

## Acute Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Acute Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | | | | |
|---|---|---|---|---|---|---|
| | 1-hour | | | 24-hour | | |
| | Baseline Case | Process Upset Case | Process Upset Project Case | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[b] | - | - | - | 0.0047 | 0.0074 | 0.012 |
| Polychlorinated Biphenyls (PCBs) | 0.0010 | 0.0030 | 0.0040 | 2.8E-04 | 3.0E-04 | 5.8E-04 |
| **Chlorinated Monocyclic Aromatics** | | | | | | |
| Dichlorobenzene, 1,2-[c] | 8.6E-07 | 2.8E-07 | 1.1E-06 | - | - | - |
| Dichlorophenol, 2,4-[ac] | - | 8.0E-07 | 8.0E-07 | - | - | - |
| Hexachlorobenzene[c] | 6.1E-04 | 8.5E-04 | 0.0015 | - | - | - |
| Pentachlorobenzene[ac] | - | 5.5E-07 | 5.5E-07 | - | - | - |
| Pentachlorophenol | 4.3E-04 | 1.7E-04 | 6.0E-04 | 4.4E-05 | 6.4E-06 | 5.0E-05 |
| Tetrachlorobenzene, 1,2,4,5-[abc] | - | - | - | - | - | - |
| Tetrachlorophenol, 2,3,4,6-[abc] | - | - | - | - | - | - |
| Trichlorobenzene, 1,2,4- | 2.8E-04 | 5.3E-07 | 2.8E-04 | 1.1E-04 | 8.0E-08 | 1.1E-04 |
| Trichlorophenol, 2,4,6-[abc] | - | - | - | - | - | - |
| **Volatile Organic Chemicals (VOC)** | | | | | | |
| Acetaldehyde | 0.0091 | 4.6E-09 | 0.0091 | 0.0035 | 6.6E-10 | 0.0035 |
| Benzene | 0.17 | 7.5E-04 | 0.17 | 0.41 | 6.6E-04 | 0.41 |
| Biphenyl[bc] | - | - | - | - | - | - |
| Bromodichloromethane[c] | 0.0021 | 0.038 | 0.040 | - | - | - |
| Bromoform | 0.0014 | 0.0042 | 0.0056 | 5.4E-04 | 5.7E-04 | 0.0011 |
| Bromomethane | 0.0018 | 0.0012 | 0.0030 | - | - | - |
| Carbon tetrachloride | 0.014 | 1.0E-05 | 0.014 | 0.31 | 8.2E-05 | 0.31 |
| Chloroform | 0.0055 | 2.1E-05 | 0.0055 | 0.23 | 3.2E-04 | 0.23 |
| Dichlorodifluoromethane[c] | 1.6E-04 | 7.1E-06 | 1.6E-04 | - | - | - |
| Dichloroethene, 1,1 -[c] | 2.9E-05 | 1.1E-05 | 4.0E-05 | - | - | - |
| Dichloromethane | 2.2E-04 | 5.2E-05 | 2.7E-04 | 0.0058 | 4.9E-04 | 0.0062 |
| Ethylbenzene | - | - | - | 0.0012 | 6.4E-07 | 0.0012 |
| Ethylene Dibromide | 0.0032 | 3.1E-04 | 0.0035 | 0.0017 | 6.2E-05 | 0.0018 |
| Formaldehyde | 0.55 | 0.013 | 0.56 | 0.38 | 0.0033 | 0.38 |
| O-terphenyl[c] | 6.6E-06 | 6.7E-06 | 1.3E-05 | - | - | - |
| Tetrachloroethene | 6.0E-05 | 1.2E-06 | 6.1E-05 | 0.0014 | 9.7E-06 | 0.0014 |
| Tetralin[bc] | - | - | - | - | - | - |
| Toluene[c] | 6.2E-04 | 5.6E-06 | 6.3E-04 | - | - | - |
| Trichloroethane, 1,1,1 - | 3.1E-05 | 6.5E-07 | 3.1E-05 | 1.9E-05 | 1.5E-07 | 1.9E-05 |
| Trichloroethylene, 1,1,2 - | 0.0024 | 3.7E-06 | 0.0024 | 0.045 | 2.5E-05 | 0.045 |
| Trichlorofluoromethane | - | - | - | 3.6E-04 | 1.8E-05 | 3.8E-04 |
| Vinyl chloride | 7.2E-07 | 8.9E-06 | 9.7E-06 | 0.0059 | 0.027 | 0.033 |
| Xylenes, m-, p- and o- | 5.3E-04 | 1.1E-04 | 6.5E-04 | 0.0066 | 5.1E-04 | 0.0071 |
| **Chemical Mixtures** | | | | | | |
| Eye Irritants | 0.0048 | 0.020 | 0.025 | 0.0083 | 5.5E-04 | 0.0088 |
| Nasal Irritants | 0.0079 | 0.0093 | 0.017 | 0.0079 | 5.1E-04 | 0.0084 |
| Respiratory Irritants | 0.33 | 1.8 | 2.1 | 1.1 | 0.96 | 2.1 |
| Neurological Effects (Neurotoxicants) | 0.026 | 0.0024 | 0.029 | 0.55 | 0.0014 | 0.55 |

[a] Baseline Data Not Available

[b] 1-hr TRV Not Available

[c] 24-hr TRV Not Available

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.5E-04 | 2.5E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0021 | 0.0021 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0067 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 8.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0068 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 6.4E-05 | 0.015 |
| Arsenic | 0.12 | 1.3E-04 | 0.12 |
| Barium | 0.0049 | 9.9E-06 | 0.0050 |
| Beryllium | 0.043 | 2.2E-04 | 0.043 |
| Boron | 0.0031 | 1.4E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0066 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.5E-05 | 1.5E-05 |
| Cobalt | 0.0060 | 2.7E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.7E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.3E-04 | 2.3E-04 |
| Nickel | 0.045 | 0.0082 | 0.053 |
| Phosphorus | 7.3E-10 | 3.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.1E-05 | 0.015 |
| Silver | 0.034 | 0.0016 | 0.036 |
| Thallium | 0.029 | 0.0018 | 0.031 |
| Tin | 0.0015 | 4.1E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.4E-06 | 7.8E-04 |
| Zinc | 0.0051 | 1.9E-04 | 0.0053 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 7.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 5.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.8E-07 | 2.8E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 3.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.6E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.3E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Max GLC**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 5.3E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 3.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.8E-08 | 1.8E-08 |
| Pentachlorobenzene[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorophenol | 8.2E-04 | 3.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 5.0E-07 | 5.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.5E-08 | 3.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 5.3E-10 | 0.12 |
| Benzene | 0.13 | 9.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.2E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 8.4E-04 | 0.0062 |
| Bromoform | 0.0046 | 9.2E-05 | 0.0047 |
| Bromomethane | 0.020 | 6.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 1.5E-08 | 0.0032 |
| Chloroform | 0.0016 | 4.6E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.6E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.6E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 4.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 9.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 3.0E-07 | 2.1E-04 |
| Formaldehyde | 0.18 | 4.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.5E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.4E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 9.1E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.6E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.9E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.9E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.025 | 0.97 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.7E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0033 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 8.9E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Schools

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.6E-09 | 8.6E-09 |
| Pentachlorobenzene[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.4E-07 | 2.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.0E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 9.5E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0033 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.1E-05 | 0.015 |
| Arsenic | 0.12 | 6.4E-05 | 0.12 |
| Barium | 0.0049 | 4.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.0E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0032 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.3E-06 | 7.3E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.5E-06 | 0.015 |
| Silver | 0.034 | 7.7E-04 | 0.035 |
| Thallium | 0.029 | 8.9E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.1E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.6E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.2E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Daycares**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.6E-09 | 8.6E-09 |
| Pentachlorobenzene[a] | - | 6.0E-09 | 6.0E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.4E-07 | 2.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.6E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.7E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.2E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.9E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 9.4E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.8E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy Farms

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.2E-04 | 2.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0059 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 7.9E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0060 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.7E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 8.7E-06 | 0.0050 |
| Beryllium | 0.043 | 2.0E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0058 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.3E-05 | 1.3E-05 |
| Cobalt | 0.0060 | 2.4E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.1E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.1E-04 | 2.1E-04 |
| Nickel | 0.045 | 0.0072 | 0.052 |
| Phosphorus | 7.3E-10 | 3.0E-12 | 7.3E-10 |
| Selenium | 0.015 | 9.9E-06 | 0.015 |
| Silver | 0.034 | 0.0014 | 0.036 |
| Thallium | 0.029 | 0.0016 | 0.031 |
| Tin | 0.0015 | 3.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 4.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.6E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.0E-06 | 0.0023 |
| Fluorene[a] | - | 2.5E-07 | 2.5E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.6E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.4E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.1E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Farms**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.6E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.7E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.3E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.4E-07 | 4.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.1E-08 | 3.1E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 5.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.7E-10 | 0.12 |
| Benzene | 0.13 | 8.2E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.7E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.0E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.7E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.4E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 9.7E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.3E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.7E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.5E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 6.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.022 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 6.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.1E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.8E-04 | 1.8E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0048 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0048 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.6E-05 | 0.015 |
| Arsenic | 0.12 | 9.3E-05 | 0.12 |
| Barium | 0.0049 | 7.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.0E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0047 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.3E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0058 | 0.051 |
| Phosphorus | 7.3E-10 | 2.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 8.0E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Current/Future Commercial/Industrial**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-07 | 3.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-08 | 2.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.4E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.3E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.3E-04 | 2.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0062 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 8.1E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0063 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.9E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 9.2E-06 | 0.0050 |
| Beryllium | 0.043 | 2.1E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0061 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.4E-05 | 1.4E-05 |
| Cobalt | 0.0060 | 2.5E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.3E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.2E-04 | 2.2E-04 |
| Nickel | 0.045 | 0.0075 | 0.052 |
| Phosphorus | 7.3E-10 | 3.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.0E-05 | 0.015 |
| Silver | 0.034 | 0.0015 | 0.036 |
| Thallium | 0.029 | 0.0017 | 0.031 |
| Tin | 0.0015 | 3.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.7E-04 | 0.0053 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.2E-06 | 0.0023 |
| Fluorene[a] | - | 2.6E-07 | 2.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.7E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.5E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.2E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Park/Recreational**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.9E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.9E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.6E-07 | 4.6E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.2E-08 | 3.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 8.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.9E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 6.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.5E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.4E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.4E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.8E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.6E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.2E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.023 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.3E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.0E-04 | 1.0E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 8.4E-04 | 8.4E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0027 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.5E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0027 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.6E-05 | 0.015 |
| Arsenic | 0.12 | 5.2E-05 | 0.12 |
| Barium | 0.0049 | 4.0E-06 | 0.0050 |
| Beryllium | 0.043 | 8.9E-05 | 0.043 |
| Boron | 0.0031 | 5.7E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0026 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.0E-06 | 6.0E-06 |
| Cobalt | 0.0060 | 1.1E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.9E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 9.4E-05 | 9.4E-05 |
| Nickel | 0.045 | 0.0033 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.5E-06 | 0.015 |
| Silver | 0.034 | 6.3E-04 | 0.035 |
| Thallium | 0.029 | 7.3E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.2E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.5E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.9E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.0E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.4E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.1E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
### Hospitals

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.1E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 7.0E-09 | 7.0E-09 |
| Pentachlorobenzene[a] | - | 4.9E-09 | 4.9E-09 |
| Pentachlorophenol | 8.2E-04 | 1.5E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.0E-07 | 2.0E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.4E-08 | 1.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.9E-11 | 0.12 |
| Benzene | 0.13 | 3.7E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.8E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.2E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.8E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 6.3E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.0E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.7E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.4E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.9E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.9E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.7E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.6E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.0E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 7.7E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.6E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.2E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0099 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.1E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.9E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 1.0E-03 | 1.0E-03 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0032 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0032 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.0E-05 | 0.015 |
| Arsenic | 0.12 | 6.2E-05 | 0.12 |
| Barium | 0.0049 | 4.7E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 6.8E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0031 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.1E-06 | 7.1E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.2E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0039 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.3E-06 | 0.015 |
| Silver | 0.034 | 7.4E-04 | 0.035 |
| Thallium | 0.029 | 8.7E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.6E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.9E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.5E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.8E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Retirement Homes**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.5E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.3E-09 | 8.3E-09 |
| Pentachlorobenzene[a] | - | 5.8E-09 | 5.8E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.3E-07 | 2.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.2E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.3E-11 | 0.12 |
| Benzene | 0.13 | 4.4E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.7E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.1E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.6E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.5E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.4E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.2E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.0E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 9.2E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.9E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.6E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.7E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.6E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.2E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.4E-04 | 1.4E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0012 | 0.0012 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0037 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0037 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.5E-05 | 0.015 |
| Arsenic | 0.12 | 7.2E-05 | 0.12 |
| Barium | 0.0049 | 5.4E-06 | 0.0050 |
| Beryllium | 0.043 | 1.2E-04 | 0.043 |
| Boron | 0.0031 | 7.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0036 | 0.12 |
| Chromium (hexavalent)[a] | - | 8.2E-06 | 8.2E-06 |
| Cobalt | 0.0060 | 1.5E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.6E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.3E-04 | 1.3E-04 |
| Nickel | 0.045 | 0.0045 | 0.049 |
| Phosphorus | 7.3E-10 | 1.8E-12 | 7.3E-10 |
| Selenium | 0.015 | 6.2E-06 | 0.015 |
| Silver | 0.034 | 8.6E-04 | 0.035 |
| Thallium | 0.029 | 0.0010 | 0.030 |
| Tin | 0.0015 | 2.3E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.0E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 4.0E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Fluorene[a] | - | 1.6E-07 | 1.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.6E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 9.0E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 7.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Bowmanville**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.9E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.7E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 9.6E-09 | 9.6E-09 |
| Pentachlorobenzene[a] | - | 6.7E-09 | 6.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.0E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.7E-07 | 2.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.9E-08 | 1.9E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.1E-10 | 0.12 |
| Benzene | 0.13 | 5.1E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 6.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.7E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.8E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.0E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.5E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 8.6E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.4E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.2E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 5.1E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 6.0E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.6E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 8.1E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 5.0E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.1E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.2E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 4.3E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.014 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 4.2E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.6E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 9.5E-05 | 9.5E-05 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 7.9E-04 | 7.9E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0025 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0026 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 2.4E-05 | 0.015 |
| Arsenic | 0.12 | 4.9E-05 | 0.12 |
| Barium | 0.0049 | 3.7E-06 | 0.0050 |
| Beryllium | 0.043 | 8.4E-05 | 0.043 |
| Boron | 0.0031 | 5.4E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0025 | 0.12 |
| Chromium (hexavalent)[a] | - | 5.6E-06 | 5.6E-06 |
| Cobalt | 0.0060 | 1.0E-04 | 0.0061 |
| Lead[c] | 0.0066 | 1.8E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 8.8E-05 | 8.8E-05 |
| Nickel | 0.045 | 0.0031 | 0.048 |
| Phosphorus | 7.3E-10 | 1.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 4.2E-06 | 0.015 |
| Silver | 0.034 | 5.9E-04 | 0.035 |
| Thallium | 0.029 | 6.9E-04 | 0.030 |
| Tin | 0.0015 | 1.6E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.1E-06 | 7.7E-04 |
| Zinc | 0.0051 | 7.0E-05 | 0.0051 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 2.8E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 1.9E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.3E-06 | 0.0023 |
| Fluorene[a] | - | 1.1E-07 | 1.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 6.2E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 4.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.0E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 6.6E-09 | 6.6E-09 |
| Pentachlorobenzene[a] | - | 4.6E-09 | 4.6E-09 |
| Pentachlorophenol | 8.2E-04 | 1.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 1.9E-07 | 1.9E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.3E-08 | 1.3E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 2.5E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 7.4E-11 | 0.12 |
| Benzene | 0.13 | 3.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 4.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.2E-04 | 0.0054 |
| Bromoform | 0.0046 | 1.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 2.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 1.7E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 5.9E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 9.6E-09 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.5E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 3.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 4.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 1.8E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 5.6E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 5.4E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 3.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 9.7E-10 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 7.3E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.5E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.1E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 2.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.0093 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 2.9E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 1.8E-04 | 0.0074 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 2.3E-04 | 2.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0019 | 0.0019 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0061 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 7.6E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0062 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 5.9E-05 | 0.015 |
| Arsenic | 0.12 | 1.2E-04 | 0.12 |
| Barium | 0.0049 | 9.0E-06 | 0.0050 |
| Beryllium | 0.043 | 2.0E-04 | 0.043 |
| Boron | 0.0031 | 1.3E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0060 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.4E-05 | 1.4E-05 |
| Cobalt | 0.0060 | 2.5E-04 | 0.0062 |
| Lead[c] | 0.0066 | 4.3E-04 | 0.0070 |
| Mercury - Inorganic[a] | - | 2.1E-04 | 2.1E-04 |
| Nickel | 0.045 | 0.0075 | 0.052 |
| Phosphorus | 7.3E-10 | 3.1E-12 | 7.3E-10 |
| Selenium | 0.015 | 1.0E-05 | 0.015 |
| Silver | 0.034 | 0.0014 | 0.036 |
| Thallium | 0.029 | 0.0017 | 0.031 |
| Tin | 0.0015 | 3.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 5.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.7E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 6.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 4.6E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 3.1E-06 | 0.0023 |
| Fluorene[a] | - | 2.6E-07 | 2.6E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.7E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.5E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 1.2E-06 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Courtice Rd. Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 4.8E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.8E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.6E-08 | 1.6E-08 |
| Pentachlorobenzene[a] | - | 1.1E-08 | 1.1E-08 |
| Pentachlorophenol | 8.2E-04 | 3.4E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 4.5E-07 | 4.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 3.2E-08 | 3.2E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 6.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.8E-10 | 0.12 |
| Benzene | 0.13 | 8.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 1.1E-07 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.8E-04 | 0.0056 |
| Bromoform | 0.0046 | 3.1E-05 | 0.0046 |
| Bromomethane | 0.020 | 5.9E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 5.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 4.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.4E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 2.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 3.6E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 8.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 1.0E-07 | 2.0E-04 |
| Formaldehyde | 0.18 | 4.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.4E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.3E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 8.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 2.4E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.8E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 3.6E-06 | 4.0E-05 |
| Xylenes, m-, p- and o- | 0.028 | 5.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 7.1E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.023 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 7.0E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 4.3E-04 | 0.0077 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.2E-04 | 1.2E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 9.7E-04 | 9.7E-04 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0031 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 5.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0031 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.0E-05 | 0.015 |
| Arsenic | 0.12 | 6.0E-05 | 0.12 |
| Barium | 0.0049 | 4.6E-06 | 0.0050 |
| Beryllium | 0.043 | 1.0E-04 | 0.043 |
| Boron | 0.0031 | 6.6E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0030 | 0.12 |
| Chromium (hexavalent)[a] | - | 6.9E-06 | 6.9E-06 |
| Cobalt | 0.0060 | 1.2E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.2E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.1E-04 | 1.1E-04 |
| Nickel | 0.045 | 0.0038 | 0.049 |
| Phosphorus | 7.3E-10 | 1.6E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.2E-06 | 0.015 |
| Silver | 0.034 | 7.2E-04 | 0.035 |
| Thallium | 0.029 | 8.4E-04 | 0.030 |
| Tin | 0.0015 | 1.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.5E-06 | 7.7E-04 |
| Zinc | 0.0051 | 8.6E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.3E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.6E-06 | 0.0023 |
| Fluorene[a] | - | 1.3E-07 | 1.3E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.4E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 7.6E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 5.9E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Maple Grove**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.4E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.4E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.1E-09 | 8.1E-09 |
| Pentachlorobenzene[a] | - | 5.6E-09 | 5.6E-09 |
| Pentachlorophenol | 8.2E-04 | 1.7E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.3E-07 | 2.3E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.6E-08 | 1.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.1E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.0E-11 | 0.12 |
| Benzene | 0.13 | 4.3E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 5.6E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.4E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.6E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.0E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.5E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.1E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.2E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.2E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 1.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.3E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.2E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 6.8E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 6.6E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.2E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.2E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 8.9E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 1.8E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.5E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.6E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.011 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.5E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.2E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.7E-04 | 1.7E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0046 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.2E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0047 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.4E-05 | 0.015 |
| Arsenic | 0.12 | 9.1E-05 | 0.12 |
| Barium | 0.0049 | 6.8E-06 | 0.0050 |
| Beryllium | 0.043 | 1.5E-04 | 0.043 |
| Boron | 0.0031 | 9.9E-05 | 0.0032 |
| Cadmium | 0.12 | 0.0045 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.0E-05 | 1.0E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.2E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.6E-04 | 1.6E-04 |
| Nickel | 0.045 | 0.0056 | 0.050 |
| Phosphorus | 7.3E-10 | 2.3E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.8E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.8E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.8E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.1E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.0E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.1E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 8.8E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Oshawa Subdivision**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.6E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.1E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.4E-09 | 8.4E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.4E-07 | 3.4E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.4E-08 | 2.4E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.6E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.5E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.3E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.1E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.3E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.5E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.8E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.2E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.7E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.5E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.6E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.3E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 9.8E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.3E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.3E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.7E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.8E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.4E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.017 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.3E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.2E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.3E-04 | 1.3E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0010 | 0.0010 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0033 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 4.8E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0034 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 3.2E-05 | 0.015 |
| Arsenic | 0.12 | 6.5E-05 | 0.12 |
| Barium | 0.0049 | 4.9E-06 | 0.0050 |
| Beryllium | 0.043 | 1.1E-04 | 0.043 |
| Boron | 0.0031 | 7.1E-05 | 0.0031 |
| Cadmium | 0.12 | 0.0033 | 0.12 |
| Chromium (hexavalent)[a] | - | 7.4E-06 | 7.4E-06 |
| Cobalt | 0.0060 | 1.3E-04 | 0.0061 |
| Lead[c] | 0.0066 | 2.3E-04 | 0.0068 |
| Mercury - Inorganic[a] | - | 1.2E-04 | 1.2E-04 |
| Nickel | 0.045 | 0.0040 | 0.049 |
| Phosphorus | 7.3E-10 | 1.7E-12 | 7.3E-10 |
| Selenium | 0.015 | 5.6E-06 | 0.015 |
| Silver | 0.034 | 7.8E-04 | 0.035 |
| Thallium | 0.029 | 9.1E-04 | 0.030 |
| Tin | 0.0015 | 2.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 2.7E-06 | 7.7E-04 |
| Zinc | 0.0051 | 9.3E-05 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 3.7E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 2.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 1.7E-06 | 0.0023 |
| Fluorene[a] | - | 1.4E-07 | 1.4E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 1.5E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 8.1E-07 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 6.3E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Port Darlington**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 2.6E-05 | 0.0016 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 1.5E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorobenzene[a] | - | 6.1E-09 | 6.1E-09 |
| Pentachlorophenol | 8.2E-04 | 1.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 2.5E-07 | 2.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 1.7E-08 | 1.7E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 3.3E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 9.7E-11 | 0.12 |
| Benzene | 0.13 | 4.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 6.0E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 1.5E-04 | 0.0055 |
| Bromoform | 0.0046 | 1.7E-05 | 0.0046 |
| Bromomethane | 0.020 | 3.2E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 2.7E-09 | 0.0032 |
| Chloroform | 0.0016 | 2.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 7.8E-08 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.3E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.0E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 4.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 5.5E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 2.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 7.3E-08 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 7.1E-08 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 4.5E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.3E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 9.6E-07 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.0E-06 | 3.8E-05 |
| Xylenes, m-, p- and o- | 0.028 | 2.7E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 3.9E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.012 | 0.95 |
| Neurological Effects (Neurotoxicants) | 0.050 | 3.8E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 2.3E-04 | 0.0075 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.8E-04 | 1.8E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0015 | 0.0015 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0047 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.7E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0048 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.5E-05 | 0.015 |
| Arsenic | 0.12 | 9.3E-05 | 0.12 |
| Barium | 0.0049 | 7.0E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.0E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0046 | 0.12 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 1.9E-04 | 0.0061 |
| Lead[c] | 0.0066 | 3.3E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0058 | 0.051 |
| Phosphorus | 7.3E-10 | 2.4E-12 | 7.3E-10 |
| Selenium | 0.015 | 7.9E-06 | 0.015 |
| Silver | 0.034 | 0.0011 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 2.9E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 3.9E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.3E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.2E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.5E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.4E-06 | 0.0023 |
| Fluorene[a] | - | 2.0E-07 | 2.0E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.1E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.0E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Solina Rd.**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.7E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.2E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.2E-08 | 1.2E-08 |
| Pentachlorobenzene[a] | - | 8.7E-09 | 8.7E-09 |
| Pentachlorophenol | 8.2E-04 | 2.6E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.5E-07 | 3.5E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.5E-08 | 2.5E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.7E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.6E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.5E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.2E-04 | 0.0055 |
| Bromoform | 0.0046 | 2.4E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.6E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 3.9E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.3E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.1E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.8E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.8E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.6E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 7.8E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.4E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.0E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.0E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.4E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.8E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.4E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.8E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 3.9E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.5E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.4E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.3E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Criteria Air Contaminants (CAC)** | | | |
| Ammonia[a] | - | 1.9E-04 | 1.9E-04 |
| Carbon Monoxide (CO)[b] | - | - | - |
| Hydrogen Chloride (HCl)[a] | - | 0.0016 | 0.0016 |
| Hydrogen Fluoride (HF)[ab] | - | - | - |
| Nitrogen Dioxide ($NO_2$) | 0.62 | 0.0050 | 0.62 |
| Particulate Matter - $PM_{10}$ [ab] | - | - | - |
| Particulate Matter - $PM_{2.5}$ [b] | - | - | - |
| Particulate Matter - Total | 0.35 | 6.3E-04 | 0.36 |
| Sulfur Dioxide ($SO_2$) | 0.20 | 0.0050 | 0.21 |
| **Metals** | | | |
| Antimony | 0.015 | 4.7E-05 | 0.015 |
| Arsenic | 0.12 | 9.7E-05 | 0.12 |
| Barium | 0.0049 | 7.3E-06 | 0.0050 |
| Beryllium | 0.043 | 1.6E-04 | 0.043 |
| Boron | 0.0031 | 1.1E-04 | 0.0032 |
| Cadmium | 0.12 | 0.0048 | 0.13 |
| Chromium (hexavalent)[a] | - | 1.1E-05 | 1.1E-05 |
| Cobalt | 0.0060 | 2.0E-04 | 0.0062 |
| Lead[c] | 0.0066 | 3.5E-04 | 0.0069 |
| Mercury - Inorganic[a] | - | 1.7E-04 | 1.7E-04 |
| Nickel | 0.045 | 0.0060 | 0.051 |
| Phosphorus | 7.3E-10 | 2.5E-12 | 7.3E-10 |
| Selenium | 0.015 | 8.3E-06 | 0.015 |
| Silver | 0.034 | 0.0012 | 0.035 |
| Thallium | 0.029 | 0.0013 | 0.031 |
| Tin | 0.0015 | 3.0E-05 | 0.0015 |
| Vanadium | 7.7E-04 | 4.0E-06 | 7.7E-04 |
| Zinc | 0.0051 | 1.4E-04 | 0.0052 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | |
| Anthracene | 0.0016 | 5.4E-07 | 0.0016 |
| Benzo(a)fluorene | 0.0023 | 3.7E-06 | 0.0023 |
| Benzo(b)fluorene | 0.0023 | 2.5E-06 | 0.0023 |
| Fluorene[a] | - | 2.1E-07 | 2.1E-07 |
| 1-Methylnaphthalene | 1.5E-04 | 2.2E-07 | 1.5E-04 |
| 2-Methylnaphthalene | 2.5E-04 | 1.2E-06 | 2.5E-04 |
| Naphthalene | 2.9E-04 | 9.4E-07 | 2.9E-04 |

## Chronic Concentration Ratio (CR) Values for COPC Exposure Scenarios - 400,000 tpy
**Tooley**

| COPC | Chronic Concentration Ratio (CR) Values (based on maximum predicted air concentrations within the cluster) | | |
|---|---|---|---|
| | Baseline Case | Process Upset Case | Process Upset Project Case |
| **Chlorinated Polycyclic Aromatics** | | | |
| Dioxins and Furans (as TEQ Toxic Equivalents)[c] | 0.0016 | 3.9E-05 | 0.0017 |
| Polychlorinated Biphenyls (PCBs)[b] | - | - | - |
| **Chlorinated Monocyclic Aromatics** | | | |
| Dichlorobenzene, 1,2- | 7.8E-06 | 2.3E-08 | 7.8E-06 |
| Dichlorophenol, 2,4-[a] | - | 1.3E-08 | 1.3E-08 |
| Pentachlorobenzene[a] | - | 9.0E-09 | 9.0E-09 |
| Pentachlorophenol | 8.2E-04 | 2.8E-06 | 8.2E-04 |
| Tetrachlorobenzene, 1,2,4,5-[a] | - | 3.7E-07 | 3.7E-07 |
| Tetrachlorophenol, 2,3,4,6-[a] | - | 2.6E-08 | 2.6E-08 |
| Trichlorobenzene, 1,2,4- | 0.0024 | 4.9E-08 | 0.0024 |
| **Volatile Organic Chemicals (VOC)** | | | |
| Acetaldehyde | 0.12 | 1.4E-10 | 0.12 |
| Benzene | 0.13 | 6.9E-06 | 0.13 |
| Biphenyl | 2.3E-06 | 8.9E-08 | 2.4E-06 |
| Bromodichloromethane | 0.0053 | 2.3E-04 | 0.0056 |
| Bromoform | 0.0046 | 2.5E-05 | 0.0046 |
| Bromomethane | 0.020 | 4.8E-05 | 0.020 |
| Carbon tetrachloride | 0.0032 | 4.1E-09 | 0.0032 |
| Chloroform | 0.0016 | 3.4E-08 | 0.0016 |
| Dichlorodifluoromethane | 5.6E-04 | 1.2E-07 | 5.6E-04 |
| Dichloroethene, 1,1 - | 2.9E-06 | 1.9E-08 | 2.9E-06 |
| Dichloromethane | 0.0019 | 2.9E-06 | 0.0019 |
| Ethylbenzene | 6.9E-04 | 6.9E-09 | 6.9E-04 |
| Ethylene Dibromide | 2.0E-04 | 8.1E-08 | 2.0E-04 |
| Formaldehyde | 0.18 | 3.5E-05 | 0.18 |
| O-terphenyl | 2.3E-05 | 1.1E-07 | 2.3E-05 |
| Tetrachloroethene | 7.3E-04 | 1.1E-07 | 7.3E-04 |
| Tetralin[b] | - | - | - |
| Toluene | 8.8E-04 | 6.7E-08 | 8.8E-04 |
| Trichloroethane, 1,1,1 - | 2.0E-05 | 1.9E-09 | 2.0E-05 |
| Trichloroethylene, 1,1,2 - | 0.12 | 1.4E-06 | 0.12 |
| Trichlorofluoromethane[b] | - | - | - |
| Vinyl chloride | 3.6E-05 | 2.9E-06 | 3.9E-05 |
| Xylenes, m-, p- and o- | 0.028 | 4.0E-05 | 0.028 |
| **Chemical Mixtures** | | | |
| Nasal Irritants | 0.035 | 5.7E-05 | 0.035 |
| Respiratory Irritants | 0.94 | 0.018 | 0.96 |
| Neurological Effects (Neurotoxicants) | 0.050 | 5.7E-04 | 0.050 |
| Reproductive/Developmental Effects | 0.0073 | 3.5E-04 | 0.0076 |

[a] Baseline Data Not Available

[b] Annual TRV Not Available

[c] Measured Against a Benchmark CR of 0.2