



**EXECUTIVE SUMMARY
EMISSION SUMMARY AND
DISPERSION MODELLING REPORT**

August 15th, 2022

Executive Summary and Emission Summary Table

Algoma Steel Inc. (Algoma) is a fully integrated steel manufacturing facility located at 105 West Street in Sault Ste. Marie, Ontario (the Facility). The Facility is a producer of hot and cold rolled steel sheet and plate products with a current raw steel production capacity of an estimated 2.8 million tons per year. Algoma supplies into the construction, energy, defense and manufacturing sectors in Canada and internationally.

The North American Industrial Classification System (NAICS) code that best describes the Facility's primary operations is 331110 – Iron and Steel Mills and Ferro-Alloy Manufacturing. Current operations at the Facility include receiving, handling, and storage of raw materials (e.g., coal, iron ore, limestone, scrap metal); coke production from coal, iron production in blast furnaces, steel making in furnaces; finishing (heat treating, pickling, annealing and tempering); and shipping.

Algoma has committed to transition its manufacturing process from integrated basic oxygen steelmaking (BOF) to electric arc furnace (EAF) steelmaking. The transition to EAF steelmaking is characterized by a Current, Interim and Future scenario and is scheduled to occur over the course of up to eight years, with full independent operation of the EAF process by 2029.

The timing and duration of each scenario is dependent on various factors, including the timing of availability and quantity of electric power for the facility. The three scenarios can be described as follows:

- Current – Oxygen Steelmaking, No.7, 8 & 9 Coke Oven Batteries, No.7 Blast Furnace
- Interim (multi-phased) – Electric Arc Steelmaking, Oxygen Steelmaking, No.7, 8 & 9 Coke Oven Batteries, No.7 Blast Furnace operating at reduced rate
- Future – Electric Arc Steelmaking with option for addition of alternate iron units

This Emission Summary and Dispersion Modelling (ESDM) Report was prepared to serve the following purposes:

- In support of Algoma's application to the Ministry of Environment, Conservation and Parks (MECP) pertaining to a site-wide Environmental Compliance Approval, with Limited Operational Flexibility, for the Current, Interim and Future (final) scenarios as the Facility transitions to EAF steelmaking.
- In support of Algoma's application to the MECP pertaining to the Site-specific Standard (SSS) requests for benzene, benzo(a)pyrene (B(a)P), and total suspended particulate matter (PM). Due to completion of the air modelling using the MECP's updated modelling requirements, it was determined that Algoma's Site-specific Standards need to be revised for benzene, BaP and PM.
- In support of Algoma's application to the MECP pertaining to the SSS request for sulphur dioxide (SO₂) as the Facility will not meet the new Schedule 3 standards coming into effect July 2023.

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This ESDM was developed in accordance with Section 26 of Ontario Regulation 419/05 (O. Reg. 419/05) and as such is based on a maximum, worst-case scenario, which includes all Facility processes operating at full production capacity at the same time. In addition, guidance in the MECP publication "*Procedure for Preparing an Emission Summary and Dispersion Modelling Report*" dated March 2018 (ESDM Procedure Document) was followed, as appropriate.

The Facility emission inventory was developed as a process level inventory utilizing information from source testing, engineering calculations, and values reported in published literature (e.g., US EPA AP-42 Compilation of Emission Factors). In order to manage the large number of operations and associated processes, a database system (referred to as "fastEIS") was used to develop the inventory and perform all calculations and reporting.

The maximum point of impingement (POI) concentrations were calculated based on the operating conditions where significant sources were operating simultaneously at their maximum rate of production for the averaging time. The exception to this is where physical or operational limitations exist, which would exclude two pieces of equipment from operating simultaneously. The maximum emission rates for each compound emitted from the significant sources were calculated in accordance with s.11 of O. Reg. 419/05. A maximum POI concentration for each identified compound emitted from the Facility was determined based on these emission rates and the US EPA AERMOD dispersion model v.19191. The results of the Current, Interim and Future scenarios are presented in the Emission Summary Tables below.

The Facility currently has Site-specific Standards for benzene, benzo(a)pyrene, and total suspended particulate matter. The POI concentrations listed in the Emissions Summary Table were compared against the SSSs where applicable and the remaining compounds released were compared to the limits that apply to the Facility, as listed in the MECP's publication "*Air Contaminants Benchmark List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants, Version 2.0*" dated April 2018.

The assessment of the site's compliance with the MECP's air quality criteria yields the following:

- The majority of compounds are predicted to be below their MECP POI limits.
- Benzene – As a result of the application of the MECP's updated modelling requirements, the Facility is applying for a revised Site-specific Standard (annual) for the period 2022-2029, to maintain compliance for the Current and Interim scenarios.
- Benzo(a)pyrene – As a result of the application of the MECP's updated modelling requirements, the Facility is applying for a revised Site-specific Standard (annual) for the period 2022-2029, to maintain compliance for the Current and Interim scenarios.
- Total suspended particulate matter - As a result of the application of the MECP's updated modelling requirements, the Facility is applying for a

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revised Site-specific Standard (24-hour) for the period 2022-2029, to maintain compliance for the Current and Interim scenarios.

- Sulphur dioxide – The predicted maximum POI concentrations are below the current MECP Schedule 3 limit for the 1-hour and 24-hour averaging periods. New Schedule 3, 1-hour and annual standards for SO₂ come into effect in July 2023. The predicted maximum POI concentrations will exceed the new Schedule 3 standards for the Current and Interim scenarios. The Facility is applying for a Site-specific Standard for the 1-hour and annual averaging periods for the period 2022-2029, to maintain compliance for the Current and Interim scenarios. Algoma's approach to reduce SO₂ will be through its transition to electric arc steelmaking, which includes the progressive shutdown of facilities including the elimination of cokemaking.

The predicted maximum POI concentrations for all four compounds - benzene, BaP, total suspended particulate matter and SO₂ are below the applicable Schedule 3 standards (and proposed SSSs) for the Future scenario. As the Facility expects to be in full compliance by 2029, Site-Specific Standards will no longer be required.

Details on the compounds are presented in the following Emission Summary Tables. For compounds not released during all operating scenarios, an emission rate of 0 g/s has been provided in the applicable Emission Summary Table. For example, the compound Arsenic is not released until EAF implementation (Interim and Future scenarios), therefore an emission rate of 0 g/s is presented in the Current scenario Emission Summary Table.

Note: In the Emission Summary Tables below, "0.00" refers to "less than 0.01"

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Table E1-A: Emission Summary Table for the Current Scenario (2021-2024)

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
1,2,3-Trimethylbenzene	526-73-8	6.68E-06	AERMOD v.19191	1.02E-02	24	220	Health	B1	0.00%
1,2,4-Trimethylbenzene	95-63-6	8.10E-04	AERMOD v.19191	1.23E-01	24	220	Health	B1	0.06%
1-Butene	106-98-9	2.07E-04	AERMOD v.19191	1.32E-01	24	7000	Health	B2	0.00%
1-Hexene	592-41-6	1.34E-05	AERMOD v.19191	2.03E-02	24	850	Health	B2	0.00%
1-Pentene	109-67-1	1.80E-04	AERMOD v.19191	2.74E-01	24	2050	Health	B2	0.01%
2,2-Dimethylbutane	75-83-2	2.00E-05	AERMOD v.19191	3.05E-02	24	1750	Health	B2	0.00%
2-Methylpentane	107-83-5	1.87E-04	AERMOD v.19191	2.84E-01	24	1750	Health	B2	0.02%
3-Methylpentane	96-14-0	1.07E-04	AERMOD v.19191	1.62E-01	24	1750	Health	B2	0.01%
Aluminum (fumes or dust)	7429-90-5	1.06E-01	AERMOD v.19191	1.08E+00	24	12	Health	B2	9.00%
Aluminum Oxide	1344-28-1	0	AERMOD v.19191	0	30 min	100	Particulate	B1	0.00%
Acenaphthene	83-32-9	1.37E-04	AERMOD v.19191	3.85E-03	24	0.1	-	de minimus	3.85%
Acetylene	74-86-2	3.71E-03	AERMOD v.19191	4.32E-01	10 min	56000	Odour	B1	0.00%
Ammonia	7664-41-7	8.08E-02	AERMOD v.19191	9.17E-01	24	100	Health	B1	0.92%
Anthracene	0120-12-07	1.91E-03	AERMOD v.19191	5.37E-02	24	0.1	-	de minimus	53.70%
Antimony	7440-36-0	1.06E-04	AERMOD v.19191	1.80E-04	24	25	Health	B1	0.00%
Arsenic	7440-38-2	0	AERMOD v.19191	0	24	0.3	Health	B1	0.00%
Barium (total water soluble)	7440-39-3	2.61E-04	AERMOD v.19191	6.30E-04	24	10	Health	B1	0.01%
Benzene	71-43-2	7.10E-01	AERMOD v.19191	3.98E+00	Annual	2.2	-	SSS (current)	180.98%
Benzo(a)anthracene	56-55-3	1.51E-03	AERMOD v.19191	4.25E-02	24	0.1	-	de minimus	42.50%
Benzo(a)fluorene	238-84-6	8.10E-04	AERMOD v.19191	2.28E-02	24	0.1	-	de minimus	22.80%
Benzo(a)phenanthrene	0218-01-09	1.43E-03	AERMOD v.19191	4.04E-02	24	0.1	-	de minimus	40.40%
Benzo(a)pyrene	50-32-8	1.14E-03	AERMOD v.19191	5.34E-03	Annual	0.004	-	SSS (current)	133.50%
Benzo(b)fluorene	30777-19-6	9.11E-04	AERMOD v.19191	2.57E-02	24	0.1	-	de minimus	25.70%
Benzo(e)pyrene	192-97-2	1.31E-03	AERMOD v.19191	3.69E-02	24	0.1	-	de minimus	36.90%

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Benzo(ghi)perylene	191-24-2	6.21E-04	AERMOD v.19191	1.75E-02	24	0.1	-	de minimus	17.50%
Benzo(k)fluoranthene	0207-08-09	1.01E-03	AERMOD v.19191	2.83E-02	24	0.1	-	de minimus	28.30%
Beryllium (and its compounds)	7440-41-7	5.29E-06	AERMOD v.19191	2.00E-05	24	0.01	Health	B1	0.20%
Bismuth	7440-69-9	6.43E-04	AERMOD v.19191	1.40E-03	24	2.5	Health	B2	0.06%
Cadmium and Cadmium Compounds	7440-43-9	6.75E-04	AERMOD v.19191	1.30E-03	24	0.025	Health	B1	5.20%
Calcium Carbonate	1317-65-3	4.98E+00	AERMOD v.19191	9.39E+00	24	15	Health & Particulate	B2	62.60%
Calcium Magnesium Carbonate	69227-00-5	2.46E-01	AERMOD v.19191	4.86E-01	24	45	Health	B2	1.08%
Calcium oxide	1305-78-8	4.31E-03	AERMOD v.19191	5.52E-03	24	10	Corrosion	B1	0.06%
Calcium silicate	1344-95-2	1.73E-01	AERMOD v.19191	4.29E-01	24	120	Health	B2	0.36%
Calcium sulfate	7778-18-9	3.28E-03	AERMOD v.19191	4.28E-02	24	20	Health	B2	0.21%
Carbon monoxide	630-08-0	9.24E+01	AERMOD v.19191	4.01E+02	30 min	6000	Health	B1	6.68%
Chlorine	7782-50-5	0	AERMOD v.19191	0.00E+00	10 min	230	Health	B1	0.00%
				0.00E+00	24	10			0.00%
Chromium (and its compounds)	7440-47-3	1.63E-03	AERMOD v.19191	7.25E-03	24	0.5	Health	B1	1.45%
cis-2-Butene	590-18-1	9.35E-05	AERMOD v.19191	1.42E-01	24	2400	Health	B2	0.01%
Cobalt	7440-48-4	1.59E-04	AERMOD v.19191	3.92E-03	24	0.1	Health	B1	3.92%
Copper	7440-50-8	1.68E-03	AERMOD v.19191	1.73E-02	24	50	Health	B1	0.03%
Cyclohexane	110-82-7	7.82E-04	AERMOD v.19191	4.07E-01	24	6100	Health	B1	0.01%
Cyclopentane	287-92-3	3.34E-05	AERMOD v.19191	5.08E-02	24	1700	Health	B2	0.00%
Dioxins and Furans	NA	0	AERMOD v.19191	0	24	0.0000001	Health	B1	0.00%
Dibenz(ah)acridine	226-36-8	3.20E-05	AERMOD v.19191	9.00E-04	24	0.1	-	de minimus	0.90%
Dibenz(aj)acridine	224-42-0	7.12E-05	AERMOD v.19191	2.01E-03	24	0.1	-	de minimus	2.01%
Dibenzo(ah)anthracene	53-70-3	1.49E-04	AERMOD v.19191	4.20E-03	24	0.1	-	de minimus	4.20%
Ethane	74-84-0	8.40E-01	AERMOD v.19191	2.22E+01	24	14500	Health	B2	0.15%
Ethyl benzene	100-41-4	1.14E-03	AERMOD v.19191	8.89E-01	10 min	1000	Health	B1	0.09%

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Ethylene	74-85-1	1.14E+00	AERMOD v.19191	2.96E+01	24	40	Vegetation	B1	74.00%
Ferric oxide	1309-37-1	1.08E+00	AERMOD v.19191	9.18E+00	24	25	Soiling	B1	36.72%
Ferrous oxide	1345-28-1	1.78E-03	AERMOD v.19191	3.52E-03	24	0.1	-	de minimus	3.52%
Fluoranthene	206-44-0	4.95E-03	AERMOD v.19191	1.40E-01	24	140	Health	B2	0.10%
Fluorene	86-73-7	2.52E-03	AERMOD v.19191	7.12E-02	24	0.1	-	de minimus	71.20%
Graphite	7782-42-5	6.77E-02	AERMOD v.19191	3.29E-01	24	10	Health	B2	3.29%
Hydrochloric acid	7647-01-0	4.85E-02	AERMOD v.19191	1.33E+00	24	20	Health	B1	6.65%
Hydrogen cyanide	74-90-8	6.39E-03	AERMOD v.19191	1.80E-01	24	8	Health	de minimus	2.25%
Hydrogen sulphide	7783-06-4	1.10E+00	AERMOD v.19191	5.30E+00	10 min	13	Health & Odour	B1	40.77%
				7.83E-01	24	7			11.18%
Indeno(123-cd)pyrene	193-39-5	6.15E-04	AERMOD v.19191	1.74E-02	24	0.1	-	de minimus	17.40%
Iron (metallic)	7439-89-6	7.26E-02	AERMOD v.19191	4.56E-01	24	4	Health	B1	11.41%
Iron hydroxide	1310-14-1	4.98E-03	AERMOD v.19191	6.30E-02	24	0.1	-	de minimus	63.00%
Isobutane	75-28-5	5.31E-03	AERMOD v.19191	2.43E+00	24	3600	Health	B1	0.07%
Isopentane	78-78-4	1.49E-03	AERMOD v.19191	2.26E+00	24	35500	Health	B2	0.01%
Isopropyl alcohol	67-63-0	1.39E+00	AERMOD v.19191	2.37E+00	24	7300	Health	B1	0.03%
Lead	7439-92-1	2.50E-02	AERMOD v.19191	5.13E-02	24	0.5	Health	B1	10.26%
			AERMOD v.19191	1.67E-02	30 day	0.2	Health	B2	8.35%
Magnesium	7439-95-4	2.42E-05	AERMOD v.19191	1.80E-04	24	72	Health	B2	0.00%
Magnesium carbonate	546-93-0	6.33E-02	AERMOD v.19191	1.04E+00	24	20	Health	B2	5.20%
Magnesium oxide	1309-48-4	3.06E-01	AERMOD v.19191	5.93E-01	24	120	Particulate	B1	0.49%
Manganese	7439-96-5	1.48E-01	AERMOD v.19191	3.16E-01	24	0.4	Health	B1	79.00%
Manganese(ii)Oxide	1309-84-4	0	AERMOD v.19191	0	24	0.4	Particulate	B1	0.00%
Mercury	7439-97-6	0	AERMOD v.19191	0	24	2	Health	B1	0.00%
Methane	74-82-8	5.11E+01	AERMOD v.19191	1.39E+02	24	37330	Health	B2	0.37%
Methylcyclohexane	108-87-2	8.10E-05	AERMOD v.19191	3.98E-02	24	8050	Health	B2	0.00%

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Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Methylcyclopentane	96-37-7	7.34E-05	AERMOD v.19191	1.12E-01	24	3500	Health	B2	0.00%
Molybdenum	7439-98-7	1.27E-03	AERMOD v.19191	2.74E-03	24	120	Particulate	B2	0.00%
n-Butane	106-97-8	1.94E-02	AERMOD v.19191	9.30E+00	24	3600	Health	B2	0.26%
n-Heptane	142-82-5	1.07E-03	AERMOD v.19191	5.63E-01	24	11000	Health	B1	0.01%
n-Hexane	110-54-3	3.55E-03	AERMOD v.19191	1.86E+00	24	2500	Health	B1	0.07%
n-Octane	111-65-9	1.26E-04	AERMOD v.19191	1.56E+00	10 min	61800	Odour	B1	0.00%
n-Pentane	109-66-0	5.36E-03	AERMOD v.19191	2.64E+00	24	35500	Health	B1	0.01%
Naphthalene	91-20-3	1.46E-02	AERMOD v.19191	6.68E-01	24	22.5	Health	B1	2.97%
			AERMOD v.19191	5.70E+00	10 min	50	Odour		11.40%
Nickel and Nickel Compounds	7440-02-0	3.35E-04	AERMOD v.19191	3.30E-04	Annual	0.04	Health	B1	0.83%
Nitrogen oxides (expressed as NO2)	10102-44-0	1.79E+02	AERMOD v.19191	2.90E+02	1	400	Health	B1	72.50%
			AERMOD v.19191	1.27E+02	24	200			63.50%
Nitrous oxide	10024-97-2	5.59E+00	AERMOD v.19191	4.93E+00	24	9000	Health	B1	0.05%
Phosphorus (total)	7723-14-0	1.62E-03	AERMOD v.19191	3.27E-03	24	0.5	Health	B2	0.65%
Phosphoric Anhydride	1314-56-3	0.00E0	AERMOD v.19191	0.00E0	24	1	Health	B2	0.00%
Total Suspended Particulate Matter (< 44microns)	NA	3.12E+01	AERMOD v.19191	1.35E+02	24	127	-	SSS (current)	106.30%
Potassium	9/7/7440	5.67E-02	AERMOD v.19191	2.53E-01	24	1	Health	B2	25.30%
Potassium Chloride	7447-40-7	4.27E-02	AERMOD v.19191	8.45E-02	24	20	Health	B2	0.42%
Propane	74-98-6	9.15E-02	AERMOD v.19191	5.36E+00	24	215000	Health	B2	0.00%
Propylene	115-07-1	2.24E-01	AERMOD v.19191	5.93E+00	24	4000	Health	B1	0.15%
Pyrene	129-00-0	3.37E-03	AERMOD v.19191	9.50E-02	24	0.1	-	de minimus	95.00%
Pyrite	1309-36-0	1.08E-04	AERMOD v.19191	8.20E-04	24	120	Health & Particulate	B1	0.00%
Silicon dioxide	7631-86-9	2.14E-01	AERMOD v.19191	3.52E+00	24	5	Health	B2	70.40%
Silver	7440-22-4	1.65E-05	AERMOD v.19191	3.00E-05	24	1	Health	B1	0.00%

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Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Sodium	740-23-5	5.88E-02	AERMOD v.19191	1.58E-01	24	10			1.58%
Strontium	7440-24-6	1.07E-03	AERMOD v.19191	1.99E-03	24	120	Particulate	B1	0.00%
Styrene	100-42-5	4.17E-04	AERMOD v.19191	1.91E-02	24	400	Health	B1	0.00%
Sulphur dioxide	9/5/7446	1.97E+02	AERMOD v.19191	5.97E+02	1	100 (July 23 standard)	Health & Vegetation	B1	597.00%
			AERMOD v.19191	3.40E+01	Annual	10 (July 23 standard)			340.00%
Titanium (and its compounds)	7440-32-6	6.24E-03	AERMOD v.19191	7.69E-02	24	120	Particulate	B1	0.06%
Titanium Dioxide	13463-67-7	1.78E-03	AERMOD v.19191	3.52E-03	24	34	Health	B1	0.01%
Toluene	108-88-3	1.27E-01	AERMOD v.19191	2.25E+01	10 min	2000	Odour	de minimus	1.13%
Total reduced sulphur (TRS)	NA	1.10E+00	AERMOD v.19191	5.31E+00	10 min	13	Health & Odour	B1	40.85%
trans-2-Butene	624-64-6	7.34E-05	AERMOD v.19191	1.12E-01	24	2400	Health	B1	0.00%
Tungsten (elemental)	7440-33-7	7.74E-04	AERMOD v.19191	1.99E-03	24	5	Health	B2	0.04%
Vanadium (fume or dust)	7440-62-2	2.51E-03	AERMOD v.19191	5.64E-02	24	2	Health	B1	2.82%
Xylene (mixed isomers)	1330-20-7	2.20E-03	AERMOD v.19191	6.79E-02	24	730	Health	B2	0.01%
Zinc	7440-66-6	1.64E-01	AERMOD v.19191	4.27E-01	24	120	Particulate	B1	0.36%

Notes:

Category – refers to Category B1 and B2 in the Air Contaminants Benchmark (ACB) List Version 2.0, unless noted otherwise.

de minimus – POI concentration of $0.1 \mu\text{g}/\text{m}^3$ (24-hour averaging period) applied for substance without standard or guideline under O. Reg. 419/05, as per MECP's ESDM Procedure Document.

SSS – Site-specific Standard

B1 – (Benchmark 1) - Exceedance of a B1 concentration triggers specific actions under O. Reg. 419/05.

B2 – (Benchmark 2) - Exceedance of a B2 concentration triggers a toxicological assessment to determine the likelihood of adverse effect

NA - Not Applicable

Assumption: Iron Oxide (FeO) was included in modelling assessment and was determined to have similar properties as Ferric Oxide (Fe_2O_3). Therefore, the maximum POI concentrations for FeO and Fe_2O_3 have been combined and compared against the corresponding MECP POI limit for Ferric Oxide ($25 \mu\text{g}/\text{m}^3$)

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Table E1-B: Emission Summary Table for the Interim Scenario (2024-2025)

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m ³)	Averaging Period (hours)	MECP POI Limit (µg/m ³)	Limiting Effect	Category	Percent of MECP Limit (%)
1,2,3-Trimethylbenzene	526-73-8	6.68E-06	AERMOD v.19191	1.02E-02	24	220	Health	B1	0.00%
1,2,4-Trimethylbenzene	95-63-6	2.49E-04	AERMOD v.19191	1.23E-01	24	220	Health	B1	0.06%
1-Butene	106-98-9	2.07E-04	AERMOD v.19191	1.32E-01	24	7000	Health	B2	0.00%
1-Hexene	592-41-6	1.34E-05	AERMOD v.19191	2.03E-02	24	850	Health	B2	0.00%
1-Pentene	109-67-1	1.80E-04	AERMOD v.19191	2.74E-01	24	2050	Health	B2	0.01%
2,2-Dimethylbutane	75-83-2	2.00E-05	AERMOD v.19191	3.05E-02	24	1750	Health	B2	0.00%
2-Methylpentane	107-83-5	1.87E-04	AERMOD v.19191	2.84E-01	24	1750	Health	B2	0.02%
3-Methylpentane	96-14-0	1.07E-04	AERMOD v.19191	1.63E-01	24	1750	Health	B2	0.01%
Aluminum (fumes or dust)	7429-90-5	9.33E-02	AERMOD v.19191	1.07E+00	24	12	Health	B2	8.90%
Aluminum Oxide	1344-28-1	1.65E-02	AERMOD v.19191	8.24E-03	24	100	Particulate	B1	0.01%
Acenaphthene	83-32-9	1.37E-04	AERMOD v.19191	3.85E-03	24	0.1	-	de minimus	3.85%
Acetylene	74-86-2	3.71E-03	AERMOD v.19191	4.32E-01	10 min	56000	Odour	B1	0.00%
Ammonia	7664-41-7	8.08E-02	AERMOD v.19191	9.17E-01	24	100	Health	B1	0.92%
Anthracene	0120-12-07	1.91E-03	AERMOD v.19191	5.37E-02	24	0.1	-	de minimus	53.70%
Antimony	7440-36-0	1.06E-04	AERMOD v.19191	2.00E-05	24	25	Health	B1	0.00%
Arsenic	7440-38-2	1.10E-03	AERMOD v.19191	5.50E-04	24	0.3	Health	B1	0.18%
Barium (total water soluble)	7440-39-3	8.39E-05	AERMOD v.19191	1.90E-04	24	10	Health	B1	0.00%
Benzene	71-43-2	7.10E-01	AERMOD v.19191	3.98E+00	Annual	2.2	-	SSS (current)	180.91%
Benzo(a)anthracene	56-55-3	0.001507132	AERMOD v.19191	4.25E-02	24	0.1	-	de minimus	42.50%
Benzo(a)fluorene	238-84-6	0.000809613	AERMOD v.19191	2.28E-02	24	0.1	-	de minimus	22.80%
Benzo(a)phenanthrene	0218-01-09	0.001431964	AERMOD v.19191	4.04E-02	24	0.1	-	de minimus	40.40%
Benzo(a)pyrene	50-32-8	0.001143437	AERMOD v.19191	5.34E-03	Annual	0.004	-	SSS (current)	133.50%

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Benzo(b)fluorene	30777-19-6	0.000910877	AERMOD v.19191	2.57E-02	24	0.1	-	de minimus	25.70%
Benzo(e)pyrene	192-97-2	0.001308872	AERMOD v.19191	3.69E-02	24	0.1	-	de minimus	36.90%
Benzo(ghi)perylene	191-24-2	0.000620873	AERMOD v.19191	1.75E-02	24	0.1	-	de minimus	17.50%
Benzo(k)fluoranthene	0207-08-09	0.001005247	AERMOD v.19191	2.83E-02	24	0.1	-	de minimus	28.30%
Beryllium (and its compounds)	7440-41-7	7.23E-08	AERMOD v.19191	0.00E+00	24	0.01	Health	B1	0.00%
Bismuth	7440-69-9	2.99E-04	AERMOD v.19191	5.70E-04	24	2.5	Health	B2	0.02%
Cadmium and Cadmium Compounds	7440-43-9	9.94E-03	AERMOD v.19191	4.99E-03	24	0.025	Health	B1	19.96%
Calcium Carbonate	1317-65-3	1.26E+00	AERMOD v.19191	7.54E+00	24	15	Health & Particulate	B2	50.24%
Calcium Magnesium Carbonate	69227-00-5	2.47E-01	AERMOD v.19191	4.86E-01	24	45	Health & Particulate	B2	1.08%
Calcium oxide	1305-78-8	2.22E-01	AERMOD v.19191	1.07E+00	24	10	Corrosion	B1	10.70%
Calcium silicate	1344-95-2	4.34E-02	AERMOD v.19191	9.60E-02	24	120	Health	B2	0.08%
Calcium sulfate	7778-18-9	3.28E-03	AERMOD v.19191	2.23E-02	24	20	Health	B2	0.11%
Carbon monoxide	630-08-0	4.23E+02	AERMOD v.19191	1.46E+03	30 min	6000	Health	B1	24.31%
Chlorine	7782-50-5	2.75E-01	AERMOD v.19191	1.41E+00	10 min	230	Health	B1	0.61%
				1.37E-01	24	10			1.37%
Chromium (and its compounds)	7440-47-3	8.06E-03	AERMOD v.19191	7.63E-03	24	0.5	Health	B1	1.53%
cis-2-Butene	590-18-1	9.35E-05	AERMOD v.19191	1.42E-01	24	2400	Health	B2	0.01%
Cobalt	7440-48-4	6.76E-04	AERMOD v.19191	3.92E-03	24	0.1	Health	B1	3.92%
Copper	7440-50-8	5.11E-03	AERMOD v.19191	1.73E-02	24	50	Health	B1	0.03%
Cyclohexane	110-82-7	7.82E-04	AERMOD v.19191	4.07E-01	24	6100	Health	B1	0.01%
Cyclopentane	287-92-3	3.34E-05	AERMOD v.19191	5.08E-02	24	1700	Health	B2	0.00%
Dibenz(ah)acridine	226-36-8	3.20E-05	AERMOD v.19191	9.00E-04	24	0.1	-	de minimus	0.90%
Dibenz(aj)acridine	224-42-0	7.12E-05	AERMOD v.19191	2.01E-03	24	0.1	-	de minimus	2.01%
Dibenzo(ah)anthracene	53-70-3	1.49E-04	AERMOD v.19191	4.20E-03	24	0.1	-	de minimus	4.20%

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Dioxins and Furans	NA	1.10E-07	AERMOD v.19191	5.49E-08	24	0.0000001	Health	B1	54.90%
Ethane	74-84-0	8.46E-01	AERMOD v.19191	2.22E+01	24	14500	Health	B2	0.15%
Ethyl benzene	100-41-4	1.14E-03	AERMOD v.19191	8.89E-01	10 min	1000	Health	B1	0.09%
Ethylene	74-85-1	1.14E+00	AERMOD v.19191	2.96E+01	24	40	Vegetation	B1	74.07%
Ferric oxide	1309-37-1	9.02E-01	AERMOD v.19191	3.16E+00	24	25	Soiling	B1	12.64%
Ferrous oxide	1345-28-1	1.79E-03	AERMOD v.19191	3.52E-03	24	0.1	-	de minimus	3.52%
Fluoranthene	206-44-0	4.95E-03	AERMOD v.19191	1.40E-01	24	140	Health	B2	0.10%
Fluorene	86-73-7	5.20E-02	AERMOD v.19191	7.33E-02	24	0.1	-	de minimus	73.30%
Graphite	7782-42-5	5.58E-02	AERMOD v.19191	2.82E-01	24	10	Health	B2	2.82%
Hydrochloric acid	7647-01-0	4.85E-02	AERMOD v.19191	1.33E+00	24	20	Health	B1	6.65%
Hydrogen cyanide	74-90-8	6.39E-03	AERMOD v.19191	1.80E-01	24	8	Health	de minimus	2.25%
Hydrogen sulphide	7783-06-4	1.10E+00	AERMOD v.19191	5.30E+00	10 min	13	Health & Odour	B1	40.75%
				7.83E-01	24	7			11.18%
Indeno(123-cd)pyrene	193-39-5	6.15E-04	AERMOD v.19191	1.74E-02	24	0.1	-	de minimus	17.40%
Iron (metallic)	7439-89-6	3.03E-02	AERMOD v.19191	3.93E-01	24	4	Health	B1	9.83%
Iron hydroxide	1310-14-1	4.09E-03	AERMOD v.19191	5.47E-02	24	0.1	-	de minimus	54.70%
Isobutane	75-28-5	5.31E-03	AERMOD v.19191	2.43E+00	24	3600	Health	B1	0.07%
Isopentane	78-78-4	1.49E-03	AERMOD v.19191	2.27E+00	24	35500	Health	B2	0.01%
Isopropyl alcohol	67-63-0	1.39E+00	AERMOD v.19191	4.97E-01	24	7300	Health	B1	0.01%
Lead	7439-92-1	2.28E-02	AERMOD v.19191	1.23E-02	24	0.5	Health	B1	2.47%
			AERMOD v.19191	2.45E-03	30 day	0.2	Health	B2	1.23%
Magnesium	7439-95-4	2.42E-05	AERMOD v.19191	1.80E-04	24	72	Health	B2	0.00%
Magnesium carbonate	546-93-0	6.33E-02	AERMOD v.19191	1.03E+00	24	20	Health	B2	5.17%
Magnesium oxide	1309-48-4	1.09E-01	AERMOD v.19191	2.14E-01	24	120	Particulate	B1	0.18%
Manganese	7439-96-5	5.75E-02	AERMOD v.19191	2.63E-01	24	0.4	Health	B1	65.86%
Manganese(ii)Oxide	1309-84-4	3.30E-01	AERMOD v.19191	1.65E-01	24	0.4	Health	B1	41.18%
Mercury	7439-97-6	5.50E-06	AERMOD v.19191	1.00E-06	24	2	Health	B1	0.00%
Methane	74-82-8	5.10E+01	AERMOD v.19191	1.39E+02	24	37330	Health	B2	0.37%

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Methylcyclohexane	108-87-2	8.10E-05	AERMOD v.19191	3.97E-02	24	8050	Health	B2	0.00%
Methylcyclopentane	96-37-7	7.34E-05	AERMOD v.19191	1.12E-01	24	3500	Health	B2	0.00%
Molybdenum	7439-98-7	1.21E-03	AERMOD v.19191	2.66E-03	24	120	Particulate	B2	0.00%
n-Butane	106-97-8	1.94E-02	AERMOD v.19191	9.30E+00	24	3600	Health	B2	0.26%
n-Heptane	142-82-5	1.07E-03	AERMOD v.19191	5.62E-01	24	11000	Health	B1	0.01%
n-Hexane	110-54-3	3.55E-03	AERMOD v.19191	1.86E+00	24	2500	Health	B1	0.07%
n-Octane	111-65-9	1.26E-04	AERMOD v.19191	1.57E+00	10 min	61800	Odour	B1	0.00%
n-Pentane	109-66-0	5.36E-03	AERMOD v.19191	2.64E+00	24	35500	Health	B1	0.01%
Naphthalene	91-20-3	1.46E-02	AERMOD v.19191	6.68E-01	24	22.5	Health	B1	2.97%
			AERMOD v.19191	5.70E+00	10 min	50	Odour		11.40%
Nickel and Nickel Compounds	7440-02-0	4.42E-02	AERMOD v.19191	1.94E-03	Annual	0.04	Health	B1	4.85%
Nitrogen oxides (expressed as NO2)	10102-44-0	2.35E+02	AERMOD v.19191	3.62E+02	1	400	Health	B1	90.58%
			AERMOD v.19191	9.69E+01	24	200			48.45%
Nitrous oxide	10024-97-2	5.59E+00	AERMOD v.19191	4.95E+00	24	9000	Health	B1	0.06%
Phosphorus (total)	7723-14-0	5.69E-04	AERMOD v.19191	2.33E-03	24	0.5	Health	B2	0.47%
Phosphoric Anhydride	1314-56-3	2.04E-02	AERMOD v.19191	1.02E-02	24	1	Health	B2	1.02%
Total Suspended Particulate Matter	NA	3.03E+01	AERMOD v.19191	1.31E+02	24	127	-	SSS (current)	103.29%
Potassium	9/7/7440	1.89E-02	AERMOD v.19191	2.18E-01	24	1	Health	B2	21.82%
Potassium Chloride	7447-40-7	4.29E-02	AERMOD v.19191	8.45E-02	24	20	Health	B2	0.42%
Propane	74-98-6	9.67E-02	AERMOD v.19191	5.36E+00	24	215000	Health	B2	0.00%
Propylene	115-07-1	2.24E-01	AERMOD v.19191	5.93E+00	24	4000	Health	B1	0.15%
Pyrene	129-00-0	3.37E-03	AERMOD v.19191	9.50E-02	24	0.1	-	de minimus	95.00%
Pyrite	1309-36-0	1.08E-04	AERMOD v.19191	8.20E-04	24	120	Health & Particulate	B1	0.00%
Silicon dioxide	7631-86-9	5.29E-01	AERMOD v.19191	3.54E+00	24	5	Health	B2	70.73%
Silver	7440-22-4	5.21E-06	AERMOD v.19191	1.00E-05	24	1	Health	B1	0.00%
Sodium	740-23-5	2.30E-02	AERMOD v.19191	2.16E-02	24	10			0.22%

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Strontium	7440-24-6	1.91E-04	AERMOD v.19191	4.70E-04	24	120	Particulate	B1	0.00%
Styrene	100-42-5	4.17E-04	AERMOD v.19191	1.91E-02	24	400	Health	B1	0.00%
Sulphur dioxide	9/5/7446	2.21E+02	AERMOD v.19191	6.15E+02	1	100 (July 2023 standard)	Health & Vegetation	B1	615.12%
			AERMOD v.19191	2.28E+01	Annual	10 (July 2023 standard)			228.39%
Titanium (and its compounds)	7440-32-6	4.25E-03	AERMOD v.19191	6.42E-02	24	120	Particulate	B1	0.05%
Titanium Dioxide	13463-67-7	1.79E-03	AERMOD v.19191	3.52E-03	24	34	Health	B1	0.01%
Toluene	108-88-3	1.27E-01	AERMOD v.19191	2.25E+01	10 min	2000	Odour	de minimus	1.12%
Total reduced sulphur (TRS)	NA	1.10E+00	AERMOD v.19191	5.31E+00	10 min	13	Health Odour	B1	40.83%
trans-2-Butene	624-64-6	7.34E-05	AERMOD v.19191	1.12E-01	24	2400	Health	B1	0.00%
Tungsten (elemental)	7440-33-7	1.60E-04	AERMOD v.19191	3.50E-04	24	5	Health	B2	0.01%
Vanadium (fume or dust)	7440-62-2	2.40E-03	AERMOD v.19191	4.59E-03	24	2	Health	B1	0.23%
Xylene (mixed isomers)	1330-20-7	2.20E-03	AERMOD v.19191	6.79E-02	24	730	Health	B2	0.01%
Zinc	7440-66-6	1.19E+00	AERMOD v.19191	6.09E-01	24	120	Particulate	B1	0.51%

Notes:

Category – refers to Category B1 and B2 in the Air Contaminants Benchmark (ACB) List Version 2.0, unless noted otherwise.

de minimus – POI concentration of 0.1 µg/m³ (24-hour averaging period) applied for substance without standard or guideline under O. Reg. 419/05, as per MECP's ESDM Procedure Document.

SSS – Site-specific Standard

B1 – (Benchmark 1) - Exceedance of a B1 concentration triggers specific actions under O. Reg. 419/05.

B2 – (Benchmark 2) - Exceedance of a B2 concentration triggers a toxicological assessment to determine the likelihood of adverse effect

NA - Not Applicable

Assumption: Iron Oxide (FeO) was included in modelling assessment and was determined to have similar properties as Ferric Oxide (Fe₂O₃). Therefore, the maximum POI concentrations for FeO and Fe₂O₃ have been combined and compared against the corresponding MECP POI limit for Ferric Oxide (25 µg/m³)

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Table E1-C: Emission Summary Table for the Interim Scenario (2026-2028)

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
1,2,3-Trimethylbenzene	526-73-8	6.68E-06	AERMOD v.19191	1.02E-02	24	220	Health	B1	0.00%
1,2,4-Trimethylbenzene	95-63-6	2.49E-04	AERMOD v.19191	1.23E-01	24	220	Health	B1	0.06%
1-Butene	106-98-9	1.74E-04	AERMOD v.19191	1.32E-01	24	7000	Health	B2	0.00%
1-Hexene	592-41-6	1.34E-05	AERMOD v.19191	2.03E-02	24	850	Health	B2	0.00%
1-Pentene	109-67-1	1.80E-04	AERMOD v.19191	2.74E-01	24	2050	Health	B2	0.01%
2,2-Dimethylbutane	75-83-2	2.00E-05	AERMOD v.19191	3.05E-02	24	1750	Health	B2	0.00%
2-Methylpentane	107-83-5	1.87E-04	AERMOD v.19191	2.84E-01	24	1750	Health	B2	0.02%
3-Methylpentane	96-14-0	1.07E-04	AERMOD v.19191	1.62E-01	24	1750	Health	B2	0.01%
Aluminum (fumes or dust)	7429-90-5	9.19E-02	AERMOD v.19191	1.06E+00	24	12	Health	B2	8.85%
Aluminum Oxide	1344-28-1	1.65E-02	AERMOD v.19191	8.24E-03	24	100	Particulate	B1	0.01%
Acenaphthene	83-32-9	9.88E-05	AERMOD v.19191	3.41E-03	24	0.1	-	de minimus	3.41%
Acetylene	74-86-2	2.67E-03	AERMOD v.19191	4.21E-01	10 min	56000	Odour	B1	0.00%
Ammonia	7664-41-7	7.32E-02	AERMOD v.19191	8.29E-01	24	100	Health	B1	0.83%
Anthracene	0120-12-07	1.38E-03	AERMOD v.19191	4.76E-02	24	0.1	-	de minimus	47.60%
Antimony	7440-36-0	4.68E-07	AERMOD v.19191	2.00E-05	24	25	Health	B1	0.00%
Arsenic	7440-38-2	1.10E-03	AERMOD v.19191	5.50E-04	24	0.3		B1	0.18%
Barium (total water soluble)	7440-39-3	7.89E-05	AERMOD v.19191	1.90E-04	24	10	Health	B1	0.00%
Benzene	71-43-2	5.44E-01	AERMOD v.19191	3.21E+00	Annual	2.2	-	SSS (current)	145.91%
Benzo(a)anthracene	56-55-3	1.09E-03	AERMOD v.19191	3.76E-02	24	0.1	-	de minimus	37.60%
Benzo(a)fluorene	238-84-6	5.85E-04	AERMOD v.19191	2.02E-02	24	0.1	-	de minimus	20.20%
Benzo(a)phenanthrene	0218-01-09	1.03E-03	AERMOD v.19191	3.58E-02	24	0.1	-	de minimus	35.80%

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Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Benzo(a)pyrene	50-32-8	8.26E-04	AERMOD v.19191	4.49E-03	Annual	0.004	-	SSS (current)	112.25%
Benzo(b)fluorene	30777-19-6	6.58E-04	AERMOD v.19191	2.28E-02	24	0.1	-	de minimus	22.80%
Benzo(e)pyrene	192-97-2	9.46E-04	AERMOD v.19191	3.27E-02	24	0.1	-	de minimus	32.70%
Benzo(ghi)perylene	191-24-2	4.49E-04	AERMOD v.19191	1.55E-02	24	0.1	-	de minimus	15.50%
Benzo(k)fluoranthene	0207-08-09	7.26E-04	AERMOD v.19191	2.51E-02	24	0.1	-	de minimus	25.10%
Beryllium (and its compounds)	7440-41-7	0.00E+00	AERMOD v.19191	0.00E+00	24	0.01	Health	B1	0.00%
Bismuth	7440-69-9	2.70E-04	AERMOD v.19191	5.60E-04	24	2.5	Health	B2	0.02%
Cadmium and Cadmium Compounds	7440-43-9	9.94E-03	AERMOD v.19191	4.99E-03	24	0.025	Health	B1	19.96%
Calcium Carbonate	1317-65-3	1.24E+00	AERMOD v.19191	7.44E+00	24	15	Health & Particulate	B2	49.62%
Calcium Magnesium Carbonate	69227-00-5	2.47E-01	AERMOD v.19191	4.86E-01	24	45	Health & Particulate	B2	1.08%
Calcium oxide	1305-78-8	2.23E-01	AERMOD v.19191	1.07E+00	24	10	Corrosion	B1	10.74%
Calcium silicate	1344-95-2	4.26E-02	AERMOD v.19191	9.56E-02	24	120	Health	B2	0.08%
Calcium sulfate	7778-18-9	3.28E-03	AERMOD v.19191	2.23E-02	24	20	Health	B2	0.11%
Carbon monoxide	630-08-0	4.15E+02	AERMOD v.19191	1.44E+03	30 min	6000	Health	B1	24.03%
Chlorine	7782-50-5	2.75E-01	AERMOD v.19191	1.41E+00	10 min	230	Health	B1	0.61%
				1.37E-01	24	10			1.37%
Chromium (and its compounds)	7440-47-3	8.03E-03	AERMOD v.19191	7.53E-03	24	0.5	Health	B1	1.51%
cis-2-Butene	590-18-1	9.35E-05	AERMOD v.19191	1.42E-01	24	2400	Health	B2	0.01%
Cobalt	7440-48-4	6.64E-04	AERMOD v.19191	3.92E-03	24	0.1	Health	B1	3.92%
Copper	7440-50-8	5.11E-03	AERMOD v.19191	1.73E-02	24	50	Health	B1	0.03%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Cyclohexane	110-82-7	7.82E-04	AERMOD v.19191	4.07E-01	24	6100	Health	B1	0.01%
Cyclopentane	287-92-3	3.34E-05	AERMOD v.19191	5.08E-02	24	1700	Health	B2	0.00%
Dibenz(ah)acridine	226-36-8	2.31E-05	AERMOD v.19191	8.00E-04	24	0.1	-	de minimus	0.80%
Dibenz(aj)acridine	224-42-0	5.15E-05	AERMOD v.19191	1.78E-03	24	0.1	-	de minimus	1.78%
Dibenzo(ah)anthracene	53-70-3	1.08E-04	AERMOD v.19191	3.72E-03	24	0.1	-	de minimus	3.72%
Dioxins and Furans	NA	1.10E-07	AERMOD v.19191	5.49E-08	24	0.0000001	Health	B1	54.90%
Ethane	74-84-0	5.97E-01	AERMOD v.19191	2.04E+01	24	14500	Health	B2	0.14%
Ethyl benzene	100-41-4	9.24E-04	AERMOD v.19191	8.84E-01	10 min	1000	Health	B1	0.09%
Ethylene	74-85-1	8.02E-01	AERMOD v.19191	2.72E+01	24	40	Vegetation	B1	68.00%
Ferric oxide	1309-37-1	5.06E-01	AERMOD v.19191	3.16E+00	24	25	Soiling	B1	12.63%
Ferrous oxide	1345-28-1	1.79E-03	AERMOD v.19191	3.52E-03	24	0.1	-	de minimus	3.52%
Fluoranthene	206-44-0	3.58E-03	AERMOD v.19191	1.24E-01	24	140	Health	B2	0.09%
Fluorene	86-73-7	5.13E-02	AERMOD v.19191	6.52E-02	24	0.1	-	de minimus	65.15%
Graphite	7782-42-5	4.08E-02	AERMOD v.19191	2.82E-01	24	10	Health	B2	2.82%
Hydrochloric acid	7647-01-0	4.85E-02	AERMOD v.19191	1.33E+00	24	20	Health	B1	6.65%
Hydrogen cyanide	74-90-8	4.62E-03	AERMOD v.19191	1.60E-01	24	8	Health	de minimus	2.00%
Hydrogen sulphide	7783-06-4	5.20E-01	AERMOD v.19191	5.17E+00	10 min	13	Health & Odour	B1	39.80%
				6.92E-01	24	7			9.89%
Indeno(123-cd)pyrene	193-39-5	4.45E-04	AERMOD v.19191	1.54E-02	24	0.1	-	de minimus	15.40%
Iron (metallic)	7439-89-6	2.54E-02	AERMOD v.19191	3.71E-01	24	4	Health	B1	9.28%
Iron hydroxide	1310-14-1	4.09E-03	AERMOD v.19191	5.47E-02	24	0.1	-	de minimus	54.70%
Isobutane	75-28-5	5.31E-03	AERMOD v.19191	2.43E+00	24	3600	Health	B1	0.07%
Isopentane	78-78-4	1.49E-03	AERMOD v.19191	2.26E+00	24	35500	Health	B2	0.01%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Isopropyl alcohol	67-63-0	1.39E+00	AERMOD v.19191	1.15E+00	24	7300	Health	B1	0.02%
Lead	7439-92-1	2.28E-02	AERMOD v.19191	1.23E-02	24	0.5	Health	B1	2.47%
			AERMOD v.19191	2.41E-03	30 day	0.2	Health	B2	1.21%
Magnesium	7439-95-4	0.00E+00	AERMOD v.19191	0.00E+00	24	72	Health	B2	0.00%
Magnesium carbonate	546-93-0	6.09E-02	AERMOD v.19191	1.02E+00	24	20	Health	B2	5.11%
Magnesium oxide	1309-48-4	1.05E-01	AERMOD v.19191	2.13E-01	24	120	Particulate	B1	0.18%
Manganese	7439-96-5	5.74E-02	AERMOD v.19191	2.63E-01	24	0.4	Health	B1	65.65%
Manganese(ii)Oxide	1309-84-4	2.90E-01	AERMOD v.19191	1.45E-01	24	0.4	Health	B1	36.15%
Mercury	7439-97-6	5.50E-06	AERMOD v.19191	0.00E+00	24	2	Health	3	0.00%
Methane	74-82-8	3.88E+01	AERMOD v.19191	1.29E+02	24	37330	Health	B2	0.34%
Methylcyclohexane	108-87-2	8.10E-05	AERMOD v.19191	3.97E-02	24	8050	Health	B2	0.00%
Methylcyclopentane	96-37-7	7.34E-05	AERMOD v.19191	1.12E-01	24	3500	Health	B2	0.00%
Molybdenum	7439-98-7	1.21E-03	AERMOD v.19191	2.66E-03	24	120	Particulate	B2	0.00%
n-Butane	106-97-8	1.94E-02	AERMOD v.19191	9.30E+00	24	3600	Health	B2	0.26%
n-Heptane	142-82-5	1.07E-03	AERMOD v.19191	5.62E-01	24	11000	Health	B1	0.01%
n-Hexane	110-54-3	3.55E-03	AERMOD v.19191	1.86E+00	24	2500	Health	B1	0.07%
n-Octane	111-65-9	1.26E-04	AERMOD v.19191	1.56E+00	10 min	61800	Odour	B1	0.00%
n-Pentane	109-66-0	5.36E-03	AERMOD v.19191	2.64E+00	24	35500	Health	B1	0.01%
Naphthalene	91-20-3	1.13E-02	AERMOD v.19191	4.80E-01	24	22.5	Health	B1	2.13%
			AERMOD v.19191	4.07E+00	10 min	50	Odour	B1	8.13%
Nickel and Nickel Compounds	7440-02-0	4.42E-02	AERMOD v.19191	1.94E-03	Annual	0.04	Health	B1	4.85%
Nitrogen oxides (expressed as NO2)	10102-44-0	2.27E+02	AERMOD v.19191	3.45E+02	1	400	Health	B1	86.21%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
			AERMOD v.19191	9.46E+01	24	200			47.32%
Nitrous oxide	10024-97-2	5.23E+00	AERMOD v.19191	4.83E+00	24	9000	Health	B1	0.05%
Phosphorus (total)	7723-14-0	3.94E-04	AERMOD v.19191	2.32E-03	24	0.5	Health	B2	0.46%
Phosphoric Anhydride	1314-56-3	2.04E-02	AERMOD v.19191	1.02E-02	24	1	Health	B2	1.02%
Total Suspended Particulate Matter	NA	2.75E+01	AERMOD v.19191	1.21E+02	24	127	-	SSS (current)	95.51%
Potassium	9/7/7440	1.86E-02	AERMOD v.19191	2.17E-01	24	1	Health	B2	21.70%
Potassium Chloride	7447-40-7	4.29E-02	AERMOD v.19191	6.93E-02	24	20	Health	B2	0.35%
Propane	74-98-6	7.21E-02	AERMOD v.19191	5.20E+00	24	215000	Health	B2	0.00%
Propylene	115-07-1	1.57E-01	AERMOD v.19191	5.16E+00	24	4000	Health	B1	0.13%
Pyrene	129-00-0	2.43E-03	AERMOD v.19191	8.41E-02	24	0.1	-	de minimus	84.10%
Pyrite	1309-36-0	0.00E+00	AERMOD v.19191	0.00E+00	24	120	Health & Particulate	B1	0.00%
Silicon dioxide	7631-86-9	5.23E-01	AERMOD v.19191	3.51E+00	24	5	Health	B2	70.11%
Silver	7440-22-4	2.45E-06	AERMOD v.19191	1.00E-05	24	1	Health	B1	0.00%
Sodium	740-23-5	2.30E-02	AERMOD v.19191	2.15E-02	24	10			0.22%
Strontium	7440-24-6	1.87E-04	AERMOD v.19191	4.60E-04	24	120	Particulate	B1	0.00%
Styrene	100-42-5	3.23E-04	AERMOD v.19191	1.37E-02	24	400	Health	B1	0.00%
Sulphur dioxide	9/5/7446	1.76E+02	AERMOD v.19191	4.94E+02	1	100 (July 2023 standard)	Health & Vegetation	B1	493.87%
			AERMOD v.19191	1.77E+01	Annual	10 (July 2023 standard)			176.99%
Titanium (and its compounds)	7440-32-6	4.14E-03	AERMOD v.19191	6.32E-02	24	120	Particulate	B1	0.05%
Titanium Dioxide	13463-67-7	1.79E-03	AERMOD v.19191	3.52E-03	24	34	Health	B1	0.01%
Toluene	108-88-3	9.11E-02	AERMOD v.19191	2.20E+01	10 min	2000	Odour	de minimus	1.10%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Total reduced sulphur (TRS)	NA	5.21E-01	AERMOD v.19191	5.18E+00	10 min	13	Health Odour	B1	39.86%
trans-2-Butene	624-64-6	7.34E-05	AERMOD v.19191	1.12E-01	24	2400	Health	B1	0.00%
Tungsten (elemental)	7440-33-7	1.60E-04	AERMOD v.19191	3.50E-04	24	5	Health	B2	0.01%
Vanadium (fume or dust)	7440-62-2	2.40E-03	AERMOD v.19191	4.57E-03	24	2	Health	B1	0.23%
Xylene (mixed isomers)	1330-20-7	1.68E-03	AERMOD v.19191	6.24E-02	24	730	Health	B2	0.01%
Zinc	7440-66-6	1.18E+00	AERMOD v.19191	6.09E-01	24	120	Particulate	B1	0.51%

Notes:

Category – refers to Category B1 and B2 in the Air Contaminants Benchmark (ACB) List Version 2.0, unless noted otherwise.

de minimus – POI concentration of $0.1 \mu\text{g}/\text{m}^3$ (24-hour averaging period) applied for substance without standard or guideline under O. Reg. 419/05, as per MECP's ESDM Procedure Document.

SSS – Site-specific Standard

B1 – (Benchmark 1) - Exceedance of a B1 concentration triggers specific actions under O. Reg. 419/05.

B2 – (Benchmark 2) - Exceedance of a B2 concentration triggers a toxicological assessment to determine the likelihood of adverse effect

NA - Not Applicable

Assumption: Iron Oxide (FeO) was included in modelling assessment and was determined to have similar properties as Ferric Oxide (Fe_2O_3). Therefore, the maximum POI concentrations for FeO and Fe_2O_3 have been combined and compared against the corresponding MECP POI limit for Ferric Oxide ($25 \mu\text{g}/\text{m}^3$)

Emission Summary and Dispersion Modelling Report

Table E1-D: Emission Summary Table for the Future Scenario (2029 onwards)

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
1,2,3-Trimethylbenzene	526-73-8	6.68E-06	AERMOD v.19191	1.02E-02	24	220	Health	B1	0.00%
1,2,4-Trimethylbenzene	95-63-6	2.49E-04	AERMOD v.19191	1.23E-01	24	220	Health	B1	0.06%
1-Butene	106-98-9	8.68E-05	AERMOD v.19191	1.32E-01	24	7000	Health	B2	0.00%
1-Hexene	592-41-6	1.34E-05	AERMOD v.19191	2.03E-02	24	850	Health	B2	0.00%
1-Pentene	109-67-1	1.80E-04	AERMOD v.19191	2.74E-01	24	2050	Health	B2	0.01%
2,2-Dimethylbutane	75-83-2	2.00E-05	AERMOD v.19191	3.05E-02	24	1750	Health	B2	0.00%
2-Methylpentane	107-83-5	1.87E-04	AERMOD v.19191	2.84E-01	24	1750	Health	B2	0.02%
3-Methylpentane	96-14-0	1.07E-04	AERMOD v.19191	1.62E-01	24	1750	Health	B2	0.01%
Aluminum (fumes or dust)	7429-90-5	8.46E-02	AERMOD v.19191	1.05E+00	24	12	Health	B2	8.75%
Aluminum Oxide	1344-28-1	1.65E-02	AERMOD v.19191	8.24E-03	24	100	Particulate	B1	0.01%
Acenaphthene	83-32-9	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Acetylene	74-86-2	0.00E+00	AERMOD v.19191	0.00E+00	10 min	56000	Odour	B1	0.00%
Ammonia	7664-41-7	0.00E+00	AERMOD v.19191	0.00E+00	24	100	Health	B1	0.00%
Anthracene	0120-12-07	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Antimony	7440-36-0	4.68E-07	AERMOD v.19191	2.00E-05	24	25	Health	B1	0.00%
Arsenic	7440-38-2	1.10E-03	AERMOD v.19191	5.50E-04	24	0.3	Health	B1	0.18%
Barium (total water soluble)	7440-39-3	7.87E-05	AERMOD v.19191	1.90E-04	24	10	Health	B1	0.00%
Benzene	71-43-2	1.64E-03	AERMOD v.19191	1.07E-01	Annual	2.2	-	SSS (current)	4.86%
Benzo(a)anthracene	56-55-3	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Benzo(a)fluorene	238-84-6	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m ³)	Averaging Period (hours)	MECP POI Limit (µg/m ³)	Limiting Effect	Category	Percent of MECP Limit (%)
Benzo(a)phenanthrene	0218-01-09	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Benzo(a)pyrene	50-32-8	0	AERMOD v.19191	0.00E+00	Annual	0.004	-	SSS (current)	0.00%
Benzo(b)fluorene	30777-19-6	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Benzo(e)pyrene	192-97-2	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Benzo(ghi)perylene	191-24-2	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Benzo(k)fluoranthene	0207-08-09	0	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Beryllium (and its compounds)	7440-41-7	0	AERMOD v.19191	0.00E+00	24	0.01	Health	B1	0.00%
Bismuth	7440-69-9	2.65E-04	AERMOD v.19191	5.60E-04	24	2.5	Health	B2	0.02%
Cadmium and Cadmium Compounds	7440-43-9	9.94E-03	AERMOD v.19191	4.94E-03	24	0.025	Health	B1	19.76%
Calcium Carbonate	1317-65-3	1.24E+00	AERMOD v.19191	7.45E+00	24	15	Health & Particulate	B2	49.64%
Calcium Magnesium Carbonate	69227-00-5	2.47E-01	AERMOD v.19191	4.86E-01	24	45	Health & Particulate	B2	1.08%
Calcium oxide	1305-78-8	2.00E-01	AERMOD v.19191	1.07E+00	24	10	Corrosion	B1	10.70%
Calcium silicate	1344-95-2	4.25E-02	AERMOD v.19191	9.56E-01	24	120	Health	B2	0.80%
Calcium sulfate	7778-18-9	3.28E-03	AERMOD v.19191	2.23E-02	24	20	Health	B2	0.11%
Carbon monoxide	630-08-0	3.95E+02	AERMOD v.19191	1.33E+03	30 min	6000	Health	B1	22.10%
Chlorine	7782-50-5	2.75E-01	AERMOD v.19191	1.41E+00	10 min	230	Health	B1	0.61%
				1.37E-01	24	10			1.37%
Chromium (and its compounds)	7440-47-3	7.94E-03	AERMOD v.19191	7.03E-03	24	0.5	Health	B1	1.41%
cis-2-Butene	590-18-1	9.35E-05	AERMOD v.19191	1.42E-01	24	2400	Health	B2	0.01%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Cobalt	7440-48-4	6.62E-04	AERMOD v.19191	3.92E-03	24	0.1	Health	B1	3.92%
Copper	7440-50-8	5.11E-03	AERMOD v.19191	1.73E-02	24	50	Health	B1	0.03%
Cyclohexane	110-82-7	7.82E-04	AERMOD v.19191	4.07E-01	24	6100	Health	B1	0.01%
Cyclopentane	287-92-3	3.34E-05	AERMOD v.19191	5.08E-02	24	1700	Health	B2	0.00%
Dibenz(ah)acridine	226-36-8	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Dibenz(aj)acridine	224-42-0	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Dibenzo(ah)anthracene	53-70-3	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Dioxins and Furans	NA	1.10E-07	AERMOD v.19191	5.49E-08	24	0.0000001	Health	B1	54.90%
Ethane	74-84-0	6.59E-03	AERMOD v.19191	7.23E-01	24	14500	Health	B2	0.00%
Ethyl benzene	100-41-4	1.98E-04	AERMOD v.19191	8.82E-01	10 min	1000	Health	B1	0.09%
Ethylene	74-85-1	0.00E+00	AERMOD v.19191	0.00E+00	24	40	Vegetation	B1	0.00%
Ferric oxide	1309-37-1	4.38E-01	AERMOD v.19191	2.30E+00	24	25	Soiling	B1	9.21%
Ferrous oxide	1345-28-1	1.79E-03	AERMOD v.19191	3.52E-03	24	0.1	-	de minimus	3.52%
Fluoranthene	206-44-0	0.00E+00	AERMOD v.19191	0.00E+00	24	140	Health	B2	0.00%
Fluorene	86-73-7	4.95E-02	AERMOD v.19191	2.47E-03	24	0.1	-	de minimus	2.47%
Graphite	7782-42-5	2.99E-02	AERMOD v.19191	1.97E-01	24	10	Health	B2	1.97%
Hydrochloric acid	7647-01-0	4.85E-02	AERMOD v.19191	1.33E+00	24	20	Health	B1	6.65%
Hydrogen cyanide	74-90-8	0.00E+00	AERMOD v.19191	0.00E+00	24	8	Health	de minimus	0.00%
Hydrogen sulphide	7783-06-4	0.00E+00	AERMOD v.19191	0.00E+00	10 min	13	Health & Odour	B1	0.00%
				0.00E+00	24	7			0.00%
Indeno(123-cd)pyrene	193-39-5	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Iron (metallic)	7439-89-6	1.43E-02	AERMOD v.19191	2.46E-01	24	4	Health	B1	6.15%
Iron hydroxide	1310-14-1	1.91E-03	AERMOD v.19191	2.66E-02	24	0.1	-	de minimus	26.63%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Isobutane	75-28-5	5.31E-03	AERMOD v.19191	2.43E+00	24	3600	Health	B1	0.07%
Isopentane	78-78-4	1.49E-03	AERMOD v.19191	2.27E+00	24	35500	Health	B2	0.01%
Isopropyl alcohol	67-63-0	1.39E+00	AERMOD v.19191	1.15E+00	24	7300	Health	B1	0.02%
Lead	7439-92-1	2.28E-02	AERMOD v.19191	1.23E-02	24	0.5	Health	B1	2.46%
			AERMOD v.19191	2.25E-03	30 day	0.2	Health	B2	1.13%
Magnesium	7439-95-4	0.00E+00	AERMOD v.19191	0.00E+00	24	72	Health	B2	0.00%
Magnesium carbonate	546-93-0	6.12E-02	AERMOD v.19191	1.02E+00	24	20	Health	B2	5.12%
Magnesium oxide	1309-48-4	1.04E-01	AERMOD v.19191	2.08E-01	24	120	Particulate	B1	0.17%
Manganese	7439-96-5	5.72E-02	AERMOD v.19191	2.62E-01	24	0.4	Health	B1	65.61%
Manganese(ii)Oxide	1309-84-4	3.30E-01	AERMOD v.19191	1.65E-01	24	0.4	Health	B1	41.25%
Mercury	7439-97-6	4.83E-06	AERMOD v.19191	1.00E-05	24	2	Health	B1	0.00%
Methane	74-82-8	7.59E+00	AERMOD v.19191	1.64E+01	24	37330	Health	B2	0.04%
Methylcyclohexane	108-87-2	8.10E-05	AERMOD v.19191	3.98E-02	24	8050	Health	B2	0.00%
Methylcyclopentane	96-37-7	7.34E-05	AERMOD v.19191	1.12E-01	24	3500	Health	B2	0.00%
Molybdenum	7439-98-7	1.21E-03	AERMOD v.19191	2.66E-03	24	120	Particulate	B2	0.00%
n-Butane	106-97-8	1.94E-02	AERMOD v.19191	9.30E+00	24	3600	Health	B2	0.26%
n-Heptane	142-82-5	1.07E-03	AERMOD v.19191	5.63E-01	24	11000	Health	B1	0.01%
n-Hexane	110-54-3	3.55E-03	AERMOD v.19191	1.86E+00	24	2500	Health	B1	0.07%
n-Octane	111-65-9	1.26E-04	AERMOD v.19191	1.56E+00	10 min	61800	Odour	B1	0.00%
n-Pentane	109-66-0	5.36E-03	AERMOD v.19191	2.64E+00	24	35500	Health	B1	0.01%
Naphthalene	91-20-3	0.00E+00	AERMOD v.19191	0.00E+00	24	22.5	Health	B1	0.00%
				0.00E+00	10 min	50	Odour		0.00%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Nickel and Nickel Compounds	7440-02-0	4.42E-02	AERMOD v.19191	1.94E-03	Annual	0.04	Health	B1	4.85%
Nitrogen oxides (expressed as NO ₂)	10102-44-0	2.05E+02	AERMOD v.19191	3.17E+02	1	400	Health	B1	79.17%
			AERMOD v.19191	8.80E+01	24	200			43.99%
Nitrous oxide	10024-97-2	2.47E-01	AERMOD v.19191	3.70E-01	24	9000	Health	B1	0.00%
Phosphorus (total)	7723-14-0	3.65E-04	AERMOD v.19191	1.89E-03	24	0.5	Health	B2	0.38%
Phosphoric Anhydride	1314-56-3	2.04E-02	AERMOD v.19191	1.02E-02	24	1	Health	B2	1.02%
Total Suspended Particulate Matter	NA	1.82E+01	AERMOD v.19191	3.38E+01	24	127	-	SSS (current)	26.63%
Potassium	9/7/7440	1.75E-02	AERMOD v.19191	2.15E-01	24	1	Health	B2	21.48%
Potassium Chloride	7447-40-7	4.29E-02	AERMOD v.19191	6.88E-02	24	20	Health	B2	0.34%
Propane	74-98-6	1.33E-02	AERMOD v.19191	4.22E+00	24	215000	Health	B2	0.00%
Propylene	115-07-1	0.00E+00	AERMOD v.19191	0.00E+00	24	4000	Health	B1	0.00%
Pyrene	129-00-0	0.00E+00	AERMOD v.19191	0.00E+00	24	0.1	-	de minimus	0.00%
Pyrite	1309-36-0	0.00E+00	AERMOD v.19191	0.00E+00	24	120	Health & Particulate	B1	0.00%
Silicon dioxide	7631-86-9	5.26E-01	AERMOD v.19191	3.74E+00	24	5	Health	B2	74.81%
Silver	7440-22-4	2.04E-06	AERMOD v.19191	1.00E-05	24	1	Health	B1	0.00%
Sodium	740-23-5	2.30E-02	AERMOD v.19191	2.15E-02	24	10			0.22%
Strontium	7440-24-6	1.87E-04	AERMOD v.19191	4.60E-04	24	120	Particulate	B1	0.00%
Styrene	100-42-5	0.00E+00	AERMOD v.19191	0.00E+00	24	400	Health	B1	0.00%
Sulphur dioxide	9/5/7446	2.71E+01	AERMOD v.19191	7.93E+01	1	100 (July 2023 standard)	Health & Vegetation	B1	79.29%
			AERMOD v.19191	1.35E+00	Annual	10 (July 2023 standard)			13.50%

Emission Summary and Dispersion Modelling Report

Contaminant	CAS No.	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	MECP POI Limit ($\mu\text{g}/\text{m}^3$)	Limiting Effect	Category	Percent of MECP Limit (%)
Titanium (and its compounds)	7440-32-6	3.82E-03	AERMOD v.19191	6.25E-02	24	120	Particulate	B1	0.05%
Titanium Dioxide	13463-67-7	1.79E-03	AERMOD v.19191	3.52E-03	24	34	Health	B1	0.01%
Toluene	108-88-3	1.32E-03	AERMOD v.19191	5.68E+00	10 min	2000	Odour	de minimus	0.28%
Total reduced sulphur (TRS)	NA	0.00E+00	AERMOD v.19191	0.00E+00	10 min	13	Health Odour	B1	0.00%
trans-2-Butene	624-64-6	7.34E-05	AERMOD v.19191	1.12E-01	24	2400	Health	B1	0.00%
Tungsten (elemental)	7440-33-7	1.60E-04	AERMOD v.19191	3.50E-04	24	5	Health	B2	0.01%
Vanadium (fume or dust)	7440-62-2	2.32E-03	AERMOD v.19191	4.55E-03	24	2	Health	B1	0.23%
Xylene (mixed isomers)	1330-20-7	8.05E-05	AERMOD v.19191	4.30E-02	24	730	Health	B2	0.01%
Zinc	7440-66-6	1.18E+00	AERMOD v.19191	6.79E-01	24	120	Particulate	B1	0.57%

Notes:

Category – refers to Category B1 and B2 in the Air Contaminants Benchmark (ACB) List Version 2.0, unless noted otherwise.

de minimus – POI concentration of $0.1 \mu\text{g}/\text{m}^3$ (24-hour averaging period) applied for substance without standard or guideline under O. Reg. 419/05, as per MECP's ESDM Procedure Document.

SSS – Site-specific Standard

B1 – (Benchmark 1) - Exceedance of a B1 concentration triggers specific actions under O. Reg. 419/05.

B2 – (Benchmark 2) - Exceedance of a B2 concentration triggers a toxicological assessment to determine the likelihood of adverse effect

NA - Not Applicable

Assumption: Iron Oxide (FeO) was included in modelling assessment and was determined to have similar properties as Ferric Oxide (Fe_2O_3). Therefore, the maximum POI concentrations for FeO and Fe_2O_3 have been combined and compared against the corresponding MECP POI limit for Ferric Oxide ($25 \mu\text{g}/\text{m}^3$)