

2024 Second Quarterly Report – Ambient Air Quality Monitoring Program

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Algoma Steel Inc.

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Executive Summary

AECOM Canada Ltd. (AECOM) was retained by Algoma Steel Inc. (Algoma) to prepare the 2024 Second Quarterly Report (Report) for the months of April to June 2024 for its Ambient Air Quality Monitoring Program (AAQMP) in Sault Ste. Marie, Ontario (Facility). Algoma is responsible for the operation and maintenance of the existing monitoring stations and ambient air quality sampling, formerly carried out by the Ontario Ministry of the Environment, Conservation, and Parks (MECP). The AAQMP was operated in general accordance with the MECP Operations Manual for Air Quality Monitoring in Ontario dated February 2018 (Operations Manual). Reporting and/or excursion notification were conducted in general accordance with Ontario Regulation 419/05, "Air Pollution – Local Air Quality" (O. Reg. 419/05), the Ontario Ambient Air Quality Criteria (Ontario AAQC) and are presented within the attached summary table.

The objective of the AAQMP is to perform ongoing data analysis and reporting of both continuous and non-continuous data for the following stations:

- Station 71042 – Bonney Street Station
- Station 71082 – 4th Ave – David Kyle Park Station
- Station 71083 – West & Cathcart Street Station
- Station 71015 – Spadina Avenue (dustfall only)
- Station 71042 – Bonney Street (dustfall only)
- Station 71043 – Wilding Avenue (dustfall only)
- Station 71045 – Adelaide Street (dustfall only)

This quarterly report includes a summary of the continuous and non-continuous statistical data for the above-noted stations for the Fourth Quarter. The report also highlights the details of the AAQMP, provides a summary of observations such as meteorological data statistics, and occurrence of any excursions following all AAQC, Upper Risk Thresholds (URT), Guideline, and/or Standard excursions as per the MECP's requirements and in accordance with O. Reg. 419/05.

Bonney Street Station (71042)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Continuous Parameters (Quarterly)							
Total Reduced Sulphur (TRS) - 24 hour	ppb	9.26	0.19	1.65	5 ppb (24-hour)	3	5 ppb (24-hour)
Total Reduced Sulphur (TRS) - 10 minute	ppb	35.2	0.0	1.65	10 ppb (10-minute)	298	10 ppb (10-minute)
Sulfur Dioxide (SO2) – 10 minute	ppb	174	0.0	1.87	67 ppb (10-minute)	24	67 ppb (10-minute)
Sulfur Dioxide (SO2) – 1 hour	ppb	84.1	0.03	1.87	40 ppb (1-hour)	80	40 ppb (1-hour)
Sulfur Dioxide (SO2) – 24 hour	ppb	19.7	0.08	19.7	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM ₁₀) – 24 Hour	µg/m ³	196	3.30	47.9	N/A	55	50 µg/m ³ (AAQC 24-hour)
Particulate Matter less than 2.5 microns (PM _{2.5}) – 24 Hour	µg/m ³	23.0	1.41	10.1	N/A	0	27 µg/m ³ (AAQC 24-hour)
Non-Continuous Parameters (Quarterly)							
Total Suspended Particulate (TSP)	µg/m ³	309	41.8	146	120 µg/m ³ (24-hour)	13	120 µg/m ³ (24-hour)
Total Suspended Particulate Manganese	µg/m ³	1.96	0.142	0.746	0.4 µg/m ³ (24-hour)	13	0.4 µg/m ³ (24-hour)
Total Suspended Particulate Ferric Oxide	µg/m ³	51.1	2.85	20.3	25 µg/m ³ (24-hour)	7	25 µg/m ³ (24-hour)
Total Suspended Particulate Metals (TSP Metals except Manganese, Ferric Oxide)	µg/m ³	Various Parameters - No Excursions to Report					
Volatile Organic Compounds (for VOCs except Benzene)	µg/m ³	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (Benzene)	µg/m ³	6.55	0.080	1.528	0.45 (Annual)	4	2.3 µg/m ³ (24-hour)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m ³	20.70	0.037	2.75	0.01 ng/m ³ (Annual)	17	0.05 ng/m ³ (24-hour)
Fourth Avenue – David Kyle Park Station (71082)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Continuous Parameters (Quarterly)							
Total Reduced Sulphur (TRS) – 24 hour	ppb	7.16	0.25	1.56	5 ppb (24-hour)	2	5 ppb (24-hour)
Total Reduced Sulphur (TRS) – 10 minute	ppb	21.5	0.0	1.56	10 ppb (10-minute)	90	10 ppb (10-minute)
Sulfur Dioxide (SO2) – 10 minute	ppb	50.6	0.0	1.25	67 ppb (10-minute)	0	67 ppb (10-minute)
Sulfur Dioxide (SO2) – 1 hour	ppb	27.0	0.0	1.25	40 ppb (1-hour)	0	40 ppb (1-hour)
Sulfur Dioxide (SO2) – 24 hour	ppb	6.00	0.29	6.00	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM ₁₀) – 24 hour	µg/m ³	98.3	1.05	21.0	N/A	13	50 µg/m ³ (24-hour)
Particulate Matter less than 2.5 microns (PM _{2.5}) – 24 Hour	µg/m ³	17.7	0.56	6.01	N/A	0	27 µg/m ³ (AAQC 24-hour)
Non-Continuous Parameters (Quarterly)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Total Suspended Particulate (TSP)	µg/m ³	91.80	5.30	43.30	120 µg/m ³ (24-hour)	0	120 µg/m ³ (24-hour)

Total Suspended Particulate Manganese	µg/m ³	0.42	0.003	0.15	0.4 µg/m ³ (24-hour)	1	0.4 µg/m ³ (24-hour)
Total Suspended Particulate Metals (TSP Metals except Manganese)	µg/m ³	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (VOCs)	µg/m ³	Various Parameters – No Excursions to Report					
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m ³	0.74	0.004	0.14	0.01 ng/m ³ (Annual)	8	0.05 ng/m ³ (24-hour)
West & Cathcart Station (71083)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Continuous Parameters (Quarterly)							
Total Reduced Sulphur (TRS) – 24 hour	ppb	3.95	0.10	1.15	5 ppb (24-hour)	0	5 ppb (24-hour)
Total Reduced Sulphur (TRS) – 10 minute	ppb	12.0	0.0	1.15	10 ppb (10-minute)	6	10 ppb (10-minute)
Sulfur Dioxide (SO ₂) – 10 minute	ppb	32.5	0.0	2.2	67 ppb (10-minute)	0	67 ppb (10-minute)
Sulfur Dioxide (SO ₂) – 1 hour	ppb	23.0	0.03	2.2	40 ppb (1-hour)	0	40 ppb (1-hour)
Sulfur Dioxide (SO ₂) – 24 hour	ppb	12.8	0.26	12.8	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM ₁₀) – 24 hour	µg/m ³	67.7	1.23	25.5	N/A	14	50 µg/m ³ (AAQC 24-hour)
Particulate Matter less than 2.5 microns (PM _{2.5}) – 24 Hour	µg/m ³	16.5	0.65	7.41	N/A	0	27 µg/m ³ (AAQC 24-hour)
Non-Continuous Parameters (Quarterly)							
Total Suspended Particulate (TSP)	µg/m ³	132	3.20	62.4	120 µg/m ³ (24-hour)	1	120 µg/m ³ (24-hour)
Total Suspended Particulate Manganese	µg/m ³	0.65	0.003	0.232	0.4 µg/m ³ (24-hour)	2	0.4 µg/m ³ (24-hour)
Total Suspended Particulate Metals (TSP Metals except Manganese)	µg/m ³	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (VOC)	µg/m ³	Various Parameters - No Excursions to Report					
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m ³	9.29	0.007	0.75	0.01 ng/m ³ (Annual)	11	0.05 ng/m ³ (24-hour)
Dustfall Monitoring Stations							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Non-Continuous Parameters (Quarterly)							
Bonney Street Dustfall Station (71042)*	g/m ² /30day	11.3	9.79	10.6	7.00	3	7.00
Adelaide Street Dustfall Station (71045)*	g/m ² /30day	9.02	3.13	6.60	7.00	2	7.00
Spadina Street Dustfall Station (71015)*	g/m ² /30day	12.1	8.19	9.84	7.00	3	7.00
Wilding Avenue Dustfall Station (71043)*	g/m ² /30day	6.89	4.15	5.42	7.00	0	7.00

*Dustfall values are after optical characterization.