

# 2024 Third Quarterly Report – Ambient Air Quality Monitoring Program

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## Executive Summary

AECOM Canada Ltd. (AECOM) was retained by Algoma Steel Inc. (Algoma) to prepare the 2024 Third Quarterly Report (Report) for the months of July to September 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 – 4<sup>th</sup> 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)
- Station 71090 – Wallace Terrace Station (Passive Sampling only)

This quarterly report includes a summary of the continuous and non-continuous statistical data for the above-noted stations for the Third 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
<b>Continuous Parameters (Quarterly)</b>							
Total Reduced Sulphur (TRS) - 24 hour	ppb	9.53	0.16	1.35	5 ppb (24-hour)	7	5 ppb (24-hour)
Total Reduced Sulphur (TRS) - 10 minute	ppb	31.9	0.0	1.20	10 ppb (10-minute)	581	10 ppb (10-minute)
Sulfur Dioxide (SO2) – 10 minute	ppb	18.3	0.0	0.35	67 ppb (10-minute)	0	67 ppb (10-minute)
Sulfur Dioxide (SO2) – 1 hour	ppb	11.7	0.0	0.35	40 ppb (1-hour)	0	40 ppb (1-hour)
Sulfur Dioxide (SO2) – 24 hour	ppb	1.7	0.0	1.7	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM <sub>10</sub> ) – 24 Hour	µg/m <sup>3</sup>	111	3.83	44.8	N/A	51	50 µg/m <sup>3</sup> (AAQC 24-hour)
Particulate Matter less than 2.5 microns (PM <sub>2.5</sub> ) – 24 Hour	µg/m <sup>3</sup>	31.8	1.31	12.4	N/A	2	27 µg/m <sup>3</sup> (AAQC 24-hour)
<b>Non-Continuous Parameters (Quarterly)</b>							
Total Suspended Particulate (TSP)	µg/m <sup>3</sup>	396	29.1	176	120 µg/m <sup>3</sup> (24-hour)	8	120 µg/m <sup>3</sup> (24-hour)
Total Suspended Particulate Manganese	µg/m <sup>3</sup>	1.35	0.112	0.555	0.4 µg/m <sup>3</sup> (24-hour)	9	0.4 µg/m <sup>3</sup> (24-hour)
Total Suspended Particulate Ferric Oxide	µg/m <sup>3</sup>	27.5	3.15	12.9	25 µg/m <sup>3</sup> (24-hour)	1	25 µg/m <sup>3</sup> (24-hour)
Total Suspended Particulate Metals (TSP Metals except Manganese, Ferric Oxide)	µg/m <sup>3</sup>	Various Parameters - No Excursions to Report					
Volatile Organic Compounds (for VOCs except Benzene)	µg/m <sup>3</sup>	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (Benzene)	µg/m <sup>3</sup>	8.95	0.08	2.14	0.45 (Annual)	2	2.3 µg/m <sup>3</sup> (24-hour)
Volatile Organic Compounds – Benzene (Passive Sampling)	µg/m <sup>3</sup>	0.35	<MDL	0.27	0.45 (Annual)	0	2.3 µg/m <sup>3</sup> (24-hour)
Poly-cyclic Aromatic Hydrocarbons – Benzo(a)pyrene (Passive Sampling)	ng/m <sup>3</sup>	0.009	0.009	0.009	0.01 ng/m <sup>3</sup> (Annual)	0	0.05 ng/m <sup>3</sup> (24-hour)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m <sup>3</sup>	3.57	0.09	1.31	0.01 ng/m <sup>3</sup> (Annual)	8	0.05 ng/m <sup>3</sup> (24-hour)
<b>Fourth Avenue – David Kyle Park Station (71082)</b>							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
<b>Continuous Parameters (Quarterly)</b>							
Total Reduced Sulphur (TRS) – 24 hour	ppb	20.88	0.0	5.36	5 ppb (24-hour)	23	5 ppb (24-hour)
Total Reduced Sulphur (TRS) – 10 minute	ppb	59.4	0.0	2.66	10 ppb (10-minute)	1878	10 ppb (10-minute)
Sulfur Dioxide (SO2) – 10 minute	ppb	58.3	0.0	1.83	67 ppb (10-minute)	0	67 ppb (10-minute)
Sulfur Dioxide (SO2) – 1 hour	ppb	43.1	0.0	1.83	40 ppb (1-hour)	0	40 ppb (1-hour)
Sulfur Dioxide (SO2) – 24 hour	ppb	9.11	0.0	9.11	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM <sub>10</sub> ) – 24 hour	µg/m <sup>3</sup>	57.4	3.74	21.5	N/A	1	50 µg/m <sup>3</sup> (24-hour)
Particulate Matter less than 2.5 microns (PM <sub>2.5</sub> ) – 24 Hour	µg/m <sup>3</sup>	32.9	1.23	9.95	N/A	1	27 µg/m <sup>3</sup> (AAQC 24-hour)
<b>Non-Continuous Parameters (Quarterly)</b>							

Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Total Suspended Particulate (TSP)	µg/m <sup>3</sup>	168	8.9	61.0	120 µg/m <sup>3</sup> (24-hour)	1	120 µg/m <sup>3</sup> (24-hour)
Total Suspended Particulate Metals (TSP Metals)	µg/m <sup>3</sup>	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (for VOCs except Benzene, and Alpha-Pinene)	µg/m <sup>3</sup>	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (Benzene)	µg/m <sup>3</sup>	2.75	0.08	0.78	0.45 (Annual)	1	2.3 µg/m <sup>3</sup> (24-hour)
Volatile Organic Compounds (Alpha-Pinene)	µg/m <sup>3</sup>	881	0.14	110	0.45 (Annual)	1	2.3 µg/m <sup>3</sup> (24-hour)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m <sup>3</sup>	3.62	0.005	0.57	0.01 ng/m <sup>3</sup> (Annual)	4	0.05 ng/m <sup>3</sup> (24-hour)
<b>West &amp; Cathcart Station (71083)</b>							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
<b>Continuous Parameters (Quarterly)</b>							
Total Reduced Sulphur (TRS) – 24 hour	ppb	2.73	0.07	0.45	5 ppb (24-hour)	0	5 ppb (24-hour)
Total Reduced Sulphur (TRS) – 10 minute	ppb	47.3	0.0	0.41	10 ppb (10-minute)	16	10 ppb (10-minute)
Sulfur Dioxide (SO <sub>2</sub> ) – 10 minute	ppb	31.0	0.0	1.1	67 ppb (10-minute)	0	67 ppb (10-minute)
Sulfur Dioxide (SO <sub>2</sub> ) – 1 hour	ppb	16.0	0.0	1.1	40 ppb (1-hour)	0	40 ppb (1-hour)
Sulfur Dioxide (SO <sub>2</sub> ) – 24 hour	ppb	5.8	0.0	5.8	100 ppb (24-hour)	0	100 ppb (24-hour)
Particulate Matter less than 10 microns (PM <sub>10</sub> ) – 24 hour	µg/m <sup>3</sup>	60.0	4.08	17.0	N/A	4	50 µg/m <sup>3</sup> (AAQC 24-hour)
Particulate Matter less than 2.5 microns (PM <sub>2.5</sub> ) – 24 Hour	µg/m <sup>3</sup>	32.3	1.58	12.96	N/A	17	27 µg/m <sup>3</sup> (AAQC 24-hour)
<b>Non-Continuous Parameters (Quarterly)</b>							
Total Suspended Particulate (TSP)	µg/m <sup>3</sup>	294	16.1	77.1	120 µg/m <sup>3</sup> (24-hour)	2	120 µg/m <sup>3</sup> (24-hour)
Total Suspended Particulate Metals (TSP Metals)	µg/m <sup>3</sup>	Various Parameters – No Excursions to Report					
Volatile Organic Compounds (VOC except Benzene)	µg/m <sup>3</sup>	Various Parameters - No Excursions to Report					
Volatile Organic Compounds (Benzene)	µg/m <sup>3</sup>	2.81	0.08	0.909	0.45 (Annual)	1	2.3 µg/m <sup>3</sup> (24-hour)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene)	ng/m <sup>3</sup>	7.78	0.020	1.27	0.01 ng/m <sup>3</sup> (Annual)	7	0.05 ng/m <sup>3</sup> (24-hour)
<b>Wallace Terrace Station (71090)</b>							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
Volatile Organic Compounds – Benzene (Passive Sampling)	µg/m <sup>3</sup>	<MDL	<MDL	<MDL	0.45 (Annual)	0	2.3 µg/m <sup>3</sup> (24-hour)
Poly-cyclic Aromatic Hydrocarbons – Benzo(a)pyrene (Passive Sampling)	ng/m <sup>3</sup>	<MDL	<MDL	<MDL	0.01 ng/m <sup>3</sup> (Annual)	0	0.05 ng/m <sup>3</sup> (24-hour)

Dustfall Monitoring Stations							
Parameter	Units	Maximum	Minimum	Arithmetic Mean (Quarterly)	Standard	Number of Excursions	Guideline, AAQC Criteria
<b>Non-Continuous Parameters (Quarterly)</b>							
<b>Bonney Street Dustfall Station (71042)*</b>	g/m <sup>2</sup> /30day	35.9	7.75	18.4	7.00	3	7.00
<b>Adelaide Street Dustfall Station (71045)*</b>	g/m <sup>2</sup> /30day	7.08	3.46	4.68	7.00	1	7.00
<b>Spadina Street Dustfall Station (71015)*</b>	g/m <sup>2</sup> /30day	18.0	4.83	9.72	7.00	1	7.00
<b>Wilding Avenue Dustfall Station (71043)*</b>	g/m <sup>2</sup> /30day	7.71	4.34	5.52	7.00	1	7.00

\*Dustfall values are after optical characterization.