

Appendix 46

Meadowbank and Whale Tail 2020 Air Quality and Dustfall Monitoring Report



AGNICO EAGLE

MEADOWBANK COMPLEX

**2020 Air Quality and Dustfall
Monitoring Report**

In Accordance with NIRB Project Certificates No.004 and No.008

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Complex

March, 2021

EXECUTIVE SUMMARY

The 2020 air quality and dustfall monitoring program at Meadowbank Complex was conducted according to the Air Quality and Dustfall Monitoring Plan, Version 5 (March, 2020). The objective of this program is to measure dustfall, NO₂, and/or suspended particulates (TSP, PM₁₀, PM_{2.5}) at various monitoring locations around the Meadowbank and Whale Tail sites, Meadowbank All-Weather Access Road (AWAR), and Whale Tail Haul Road (WTHR).

Results obtained for the measured parameters in 2020 were primarily compared to Government of Nunavut (GN) Environmental Guidelines for Ambient Air Quality (October, 2011) and/or Canadian Ambient Air Quality Standards (CAAQS) for TSP, PM_{2.5} and NO₂; BC Air Quality Objectives (August, 2013) for PM₁₀; and Alberta Ambient Air Quality Guidelines (August, 2013) for passive dustfall. Results are also compared to model predictions from the Project's Final Environmental Impact Statement, where available.

For all monitoring stations and parameters, the vast majority of 2020 sample results were well within 24-h regulatory standards for particulate matter and 30-d dustfall guidelines. No exceedances of annual average standards occurred (GN guidelines, CAAQS for particulate matter and NO₂), and no exceedances of available FEIS Addendum model predictions occurred.

In total, five of 409 samples for suspended particulates exceeded applicable standards for the 24-h average, including four TSP samples and one PM₁₀ sample. These occasional exceedances occurred across all three PM monitoring stations and no clear trend was observed. No PM_{2.5} samples exceeded applicable standards.

Of 54 dustfall samples collected at onsite locations DF-1 – DF-6, one sample exceeded the relevant Alberta guideline for industrial/commercial areas. However, this sample was considered an outlier because the same result for fixed dustfall was well below the guideline and the majority of onsite dustfall results were below the Alberta guideline for recreational/residential areas. The threshold for dustfall along the AWAR and WTHR (0.53 mg/cm²/30d at 500 m) was not exceeded for any transect. This threshold was met within 100 m of the road for nine of ten sampled transects.

Annual average NO₂ did not exceed the GN guideline of 32 ppb nor the CAAQS of 17 ppb for any station at the Meadowbank or Whale Tail sites. A continuous NO₂ monitoring station is planned to be installed in 2021.

Estimated greenhouse gas emissions for the Meadowbank site as calculated for reporting to Environment Canada's Greenhouse Gas Emissions Reporting Program in 2020 were 225,435 tonnes CO₂ equivalent, which is similar to the values reported in recent years.

Incinerator stack testing was not performed in 2020. The next test will be conducted in 2021.

Overall, there are no apparent trends towards increasing or unpredicted air quality concerns at the Meadowbank Complex in 2020, and mitigation measures in place to control air emissions are therefore considered to be effective.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	II
SECTION 1 • INTRODUCTION	1
1.1 Background and Objectives	1
1.2 Dust Mitigation	1
1.2.1 AWAR and Whale Tail Haul Road Dust Suppression	3
1.2.1.1 AWAR	3
1.2.1.2 Whale Tail Haul Road	3
1.2.2 Mine Site	4
1.3 Community Concerns	4
1.4 Monitoring Locations	4
1.4.1 Meadowbank Onsite Locations DF-1 – DF-4	8
1.4.2 Whale Tail Onsite Location DF-6 a & b	8
1.4.3 Whale Tail Haul Road Location DF-7	8
1.4.4 Meadowbank AWAR Dustfall Transects	9
1.4.5 Whale Tail Haul Road Dustfall Transects	9
SECTION 2 • MONITORING METHODS	10
2.1 TSP, PM ₁₀ , PM _{2.5}	10
2.2 Dustfall	11
2.3 NO ₂	11
2.4 Weather Data	12
2.5 Greenhouse Gas Emissions	12
SECTION 3 • DATA ANALYSIS	12
3.1 Regulatory Standards	12
3.2 FEIS Predictions	13
3.2.1 Whale Tail Site	13
3.2.2 Whale Tail Haul Road	14
3.2.2.1 NO ₂	14
3.2.2.2 Dustfall	14
SECTION 4 • 2020 MONITORING RESULTS	15
4.1 TSP, PM ₁₀ , PM _{2.5}	15
4.2 Dustfall	18
4.2.1 Onsite Locations DF-1 – DF-6	18
4.2.2 Meadowbank AWAR Dustfall Transects	22
4.2.3 Whale Tail Haul Road Dustfall Transects	23
4.2.4 Comparison of Collection Methods	26
4.3 NO ₂	27
4.4 QA/QC	27
4.4.1 Partisol Operations and Maintenance	28
4.4.2 Travel Blanks and Field Duplicates	28
4.5 Effectiveness of Mitigation	29

SECTION 5 • HISTORICAL COMPARISON	31
5.1 TSP, PM ₁₀ , PM _{2.5}	31
5.2 Dustfall.....	33
5.2.1 Onsite Locations DF-1 – DF-6.....	33
5.2.2 Meadowbank AWAR Dustfall Transects.....	33
5.2.3 Whale Tail Haul Road Dustfall Transects.....	34
5.3 NO ₂	35
SECTION 6 • WEATHER DATA	36
SECTION 7 • GREENHOUSE GAS EMISSIONS	37
SECTION 8 • INCINERATOR STACK TESTING	38
SECTION 9 • SUMMARY	39
9.1 Suspended Particulates (TSP, PM ₁₀ , PM _{2.5})	39
9.2 Dustfall.....	39
9.3 NO ₂	39
9.4 GHG Emissions	39
9.5 Incinerator Emissions	39
9.6 Conclusion	39
SECTION 10 • ACTIONS	41
SECTION 11 • REFERENCES	42

APPENDICES

Appendix A: 2020 Weather Data

LIST OF TABLES

Table 1. Thresholds and mitigation measures (Air Quality and Dustfall Monitoring Plan, Version 5 – March 2020).	2
Table 2. Dust suppressant locations along the Meadowbank AWAR in 2020. Strikethrough indicates location where dust suppressant application was identified in the Air Quality Monitoring Plan (Version 5), but no application was completed in 2020. Italics indicate supplemental dust suppression locations in 2020.	3
Table 3. UTM coordinates for the Meadowbank air quality and dustfall monitoring locations (all zone 14W). ^DF-6 replaced DF-5 in May 2019.	5
Table 4. Standards for ambient air quality for the parameters of concern at Meadowbank and Whale Tail.....	13

Table 5. Model-predicted maximum concentrations of measured criteria air contaminants for location DF-6a or b (as applicable) the Whale Tail site (FEIS Addendum, Appendix 4C – Agnico Eagle, 2018b).	14
Table 6. Predicted maximum monthly dust deposition rate as a function of distance from the Whale Tail Haul Road (FEIS Addendum, Appendix 4C, Table 4-C-24 – Agnico Eagle, 2018b).....	15
Table 7. Annual geometric mean concentrations of TSP and arithmetic mean concentrations of PM _{2.5} at DF-1, DF-2, and DF-6b for comparison with the GN guideline and CAAQS.....	18
Table 8. Arithmetic mean of the measured 24-h concentrations and FEIS-modeled maximum annual concentrations of TSP and PM _{2.5} for monitoring station DF-6b at the Whale Tail site. FEIS values from Agnico Eagle, 2018b (FEIS Addendum, Appendix 4C).	18
Table 9. Available and actual number of 24-h samples collected in 2020 for suspended particulates. Operation of the Partisol instruments at DF-6b was initiated on April 28.	28
Table 10. RPD values for duplicate dustfall canisters in 2020.	29
Table 11. Estimated greenhouse gas emissions for the Meadowbank site as reported to Environment Canada’s Greenhouse Gas Emissions Reporting Program. 2018+ includes Meadowbank and Whale Tail sites.....	37
Table 12. Historical stack testing results for mercury and dioxins and furans at the Meadowbank site. *The GN standard is for the average of three tests, as reported here.....	38

LIST OF FIGURES

Figure 1. Air quality and dustfall monitoring stations for the Meadowbank site and All Weather Access Road.....	6
Figure 2. Air quality and dustfall monitoring stations for the Whale Tail Site and Haul Road.	7
Figure 3. 24-h average concentrations of total suspended particulates (TSP) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality.	16
Figure 4. 24-h average concentration of airborne particulate matter less than 10 microns (PM ₁₀) at Meadowbank stations DF-1, DF-2, DF-6b. Dashed line indicates the BC Air Quality Objective for this parameter.	16
Figure 5. 24-h average concentration of airborne particulate matter less than 2.5 microns (PM _{2.5}) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the GN guideline for ambient air quality, and the dotted line represents the Canadian Ambient Air Quality Standard.	17
Figure 6. 30-day-normalized rates of total and fixed dustfall at DF-1 at the Meadowbank site. Points represent start date of sample collection.....	19
Figure 7. 30-day-normalized rates of total and fixed dustfall at DF-2 at the Meadowbank site. Points represent start date of sample collection.....	20
Figure 8. 30-day-normalized rates of total and fixed dustfall at DF-3 at the Meadowbank site. Points represent start date of sample collection.....	20
Figure 9. 30-day-normalized rates of total and fixed dustfall at DF-4 at the Meadowbank site. Points represent start date of sample collection.....	21
Figure 10. 30-day-normalized rates of total and fixed dustfall at DF-6a at the Whale Tail site. Points represent start date of sample collection.....	21
Figure 11. 30-day-normalized rates of total and fixed dustfall at km 18 along the Meadowbank AWAR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began August 1. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.	22

Figure 12. 30-day-normalized rates of total and fixed dustfall at km 78 along the Meadowbank AWAR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began August 1. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side. 23

Figure 13. 30-day-normalized rates of total and fixed dustfall at km 134 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side. 24

Figure 14. 30-day-normalized rates of total and fixed dustfall at km 151 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side. 25

Figure 15. 30-day-normalized rates of total and fixed dustfall at km 169 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side. 25

Figure 16. Total dustfall collected on stands (1.8 m height) and at ground level during monitoring Round 1 (July 2) and Round 2 (August 1) at km 78 and km 169. Ground-level samples at -1000 m for km 78 were missing or fallen over and are not shown. 26

Figure 17. Monthly average concentration of NO₂ at DF-1, DF-2, and DF-6a. Points represent start date of sample collection. Dashed line indicates GN standard for the annual average and dotted lines represents the Canadian Ambient Air Quality Standard for the annual average. 27

Figure 18. 24-h average concentrations of total suspended particulates (TSP) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality. 31

Figure 19. 24-h average concentration of airborne particulate matter less than 10 microns (PM₁₀) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the BC Air Quality Objective for this parameter. 32

Figure 20. 24-h average concentration of airborne particulate matter less than 2.5 microns (PM_{2.5}) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality. 32

Figure 21. Total 30-day-normalized dustfall at DF-1 – DF-6 at the Meadowbank site. Points represent start date of sample collection. Plot omits the initial sample from DF-4 (6.26 mg/cm²/30d; December 17, 2011), which was considered to be an outlier. 33

Figure 22. Total dustfall rates (mg/cm²/30d) for all samples collected since 2012 (August sampling events) along the Meadowbank AWAR in areas without dust suppression. Negative distances represent the downwind (east) side of the road, and positive distances represent the upwind (west) side. 34

Figure 23. Total dustfall rates (mg/cm²/30d) for all samples collected in August along the Whale Tail Haul Road to date. 2018 and 2019 data was collected at ground level, while all August 2020 samples were collected on stands. Negative distances represent the east side of the road, and positive distances represent the west side. 35

Figure 24. Monthly average concentration of NO₂ at DF-1, DF-2, and DF-6a. Points represent start date of sample collection. Dashed line indicates the GN standard for the annual average. 36

SECTION 1 • INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

Since November 2011, Agnico Eagle Mines Ltd. (Agnico) has conducted outdoor dust and air quality monitoring at the Meadowbank site, near Baker Lake, Nunavut, as required under NIRB Project Certificate No. 004. In 2018, Agnico was issued NIRB Project Certificate No. 008 for development of the Whale Tail site, a satellite deposit at the Meadowbank Mine.

In accordance with conditions of these Project Certificates, air quality and dustfall monitoring in 2020 followed the Air Quality and Dustfall Monitoring Plan - Version 5 (March, 2020). The objective of this program is to monitor ambient air quality around the Meadowbank and Whale Tail sites. Dustfall is also monitored along the Meadowbank All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) as a component of this plan.

Parameters measured at various locations include suspended particulates (TSP, PM₁₀, PM_{2.5}), NO₂ and dustfall. Onsite, dustfall and NO₂ are measured over one-month averaging periods throughout the year, and suspended particulates are measured over 24 hour averaging periods on a six day cycle throughout the year. Roadside dustfall along the AWAR and WTHR is measured over two one-month averaging periods during the summer season, when peak traffic rates occur. One continuous (active) NO₂ monitor is also planned to be installed in 2021.

This report provides results of current year air quality monitoring (Section 4), historical trends (Section 5), onsite weather data (Section 6), greenhouse gas emissions data as required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) (Section 7), and a summary of incinerator stack testing as conducted under Meadowbank's Incinerator Waste Management Plan (Agnico Eagle, 2018a) (Section 8).

1.2 DUST MITIGATION

In 2020, road dust management was carried out in accordance with the Air Quality and Dustfall Monitoring Plan (Version 5, March 2020), and the Whale Tail Haul Road Management Plan (Version 3, April 2020). Road dust mitigation options consist primarily of:

- Enforcing or temporarily lowering speed limits
- Grading road surfaces
- Placement of new coarser material on the road surface
- Road watering or application of dust suppressants

In addition to annual dust suppressant application along the AWAR (see Section 1.2.1), dust management actions are planned for onsite areas, the Whale Tail Haul Road, and site access roads according to pre-determined monitoring thresholds (Table 1). Both visual indicators and numeric thresholds are used to determine when specified mitigation measures need to be initiated.

Table 1. Thresholds and mitigation measures (Air Quality and Dustfall Monitoring Plan, Version 5 – March 2020).

Location	Frequency	Indicator	Threshold	Mitigation Measure
Haul road and site access roads	Regular weekly or more frequency inspection by road supervisor during the late spring and summer periods	Measured dustfall Visibility	Deterioration of visibility Safety concern High dust levels evident near significant waterbodies Dustfall exceeding 0.53 mg/cm ² /30-day at 500 m from the AWAR or WTHR	Use of water and/or dust suppressant in areas requiring attention Grade the road surface Add new granular material to the road surface Temporarily lower the speed limit on the road
Mine site, including travel areas	Regular weekly or more frequent inspection by the site supervisor during the late spring and summer periods.	Measured dustfall Measured PM	Deterioration of visibility Safety concern Dust reaching Whale Tail Lake or Mammoth Lake Dustfall exceeding 1.58 mg/cm ² /30-day at stations DF-1 to DF-6 Active PM results exceeding FEIS predictions at DF-6	Use of water and/or dust suppressant on exposed surfaces such as parking areas, pads, haul, access and service roads Review mitigation measures in place Add new granular material to surface If applicable, grade the surface Temporarily lower the speed limit on site
Ramps in the open pits	Regular inspection by pit supervisor during summer period	Visibility	Deterioration of visibility Safety concern	Use water as a dust suppressant

The following sections discuss the application of dust suppressant or road watering for each location identified in Table 1 in 2020. Records are not specifically maintained on the implementation of other

mitigation actions (e.g. grading, new material additions) in response to dustfall thresholds. Rather, the effectiveness of the mitigation overall is determined based on results of dustfall and suspended particulate monitoring for the current year (Section 4.5).

1.2.1 AWAR and Whale Tail Haul Road Dust Suppression

1.2.1.1 AWAR

According to the Air Quality and Dustfall Monitoring Plan (Version 5, March 2020), a calcium chloride dust suppressant was planned to be applied twice during the summer season on five sections of the AWAR, two locations in Baker Lake, and one onsite location. Between June 29 and July 4, 2020, dust suppressant in the form of calcium chloride (dry flake product) was applied to nine sections of the AWAR, as well as two locations in the hamlet of Baker Lake, and one area onsite. Locations are described in Table 2, and have been generally consistent since this program began in 2017. Changes to dust suppression locations in 2020 compared to the Air Quality and Dustfall Monitoring Plan are indicated in Table 2. Some changes occurred due to restrictions related to COVID-19, and some based on field observations. No additional applications of dust suppressant were conducted along the AWAR, because the first application continued to be effective throughout the season, based on visual observations. Section 4.5 provides a discussion on the effectiveness of the mitigation using quantitative dustfall monitoring thresholds.

Table 2. Dust suppressant locations along the Meadowbank AWAR in 2020. Strikethrough indicates location where dust suppressant application was identified in the Air Quality Monitoring Plan (Version 5), but no application was completed in 2020. Italics indicate supplemental dust suppression locations in 2020.

Location Type	Dust Suppression Location	Rationale
Hamlet	Agnico Eagle spud barge area	High traffic area near hamlet
Hamlet	Agnico Eagle tank farm to Arctic-Fuel site	High traffic area near hamlet (not applied in 2020 due to COVID restrictions)
AWAR	km 3 – Baker Lake	High traffic area near hamlet
AWAR	km 10 - 12	High traffic area near hamlet & area of concern to HTO – proximity to lake
AWAR	km 24 - 26	Area of concern to HTO – proximity to lake
AWAR	km 48 - 50	Area of concern to HTO – water crossing
AWAR	km 68 - 70	Location identified by Agnico Eagle – water crossing
<i>AWAR</i>	<i>km 72.5 – 73.5</i>	<i>New 2020 (safety considerations)</i>
AWAR	km 80 - 84	Location identified by Agnico Eagle – proximity to water & crossing
AWAR	km 85 - 86	<i>New 2020 (safety considerations)</i>
AWAR	km 91 - 94	<i>New 2020 (safety considerations)</i>
AWAR	km 97 - 98	High traffic area near site
Onsite	Emulsion plant turn off to Meadowbank site (km 103 – 106)	High traffic area onsite

1.2.1.2 Whale Tail Haul Road

For the Whale Tail Haul Road, the use of chemical dust suppressants was planned only as a last resort. Management primarily consists of enforcing speed limits, grading, placement of new material, and if necessary, road watering or application of dust suppressants. The implementation of dust mitigation measures is determined by the Road Supervisor and Environment Department based on visibility concerns, or where dust deposition is potentially impacting traditional land uses, fish habitat, and/or water quality.

In 2020, dust suppressant in the form of calcium chloride (dry flake product) was applied to the entire length of the WTHR in mid-June. In addition, road watering was conducted along the entire WTHR throughout the summer season, as needed.

1.2.2 Mine Site

Road watering was conducted regularly for roads on the Whale Tail site between July 2 and August 10, with a total of 17,700 m³ applied.

As in previous years, watering was also conducted regularly throughout the summer months for the Meadowbank onsite roads and airstrip, as needed.

1.3 COMMUNITY CONCERNS

As described in the Air Quality and Dustfall Monitoring Plan (Version 5, March 2020), Agnico records community concerns that are raised with regards to dust generated by traffic on the AWAR and Whale Tail Haul Road.

In 2020, no specific comments or complaints were received on this topic by the Meadowbank Environment Department.

In response to the NIRB's 2019-2020 Recommendations, Agnico Eagle will assess the development of a community based monitoring program. Agnico would first like to have a meeting with the Baker Lake Hunters and Trappers Organization and Hamlet of Baker Lake to hear about their concerns, if any. A specific action plan will be established following this first meeting and communicated to NIRB via subsequent annual report.

In the past, consultation with the Hamlet was conducted to identify major areas of concern along the AWAR. Five areas were identified, and Tetraflake (CaCl₂) is applied during the summer to mitigate dust in those areas.

Additional dust suppressing methods could be implemented along the AWAR and WTHR depending on additional overall community concerns and traditional knowledge information given during regular consultations. As well, overall safety concerns towards increased traffic and wildlife interactions, including but not limited to, visibility, could increase dust mitigation along the WTHR and AWAR.

1.4 MONITORING LOCATIONS

Air quality and dustfall monitoring is conducted at six locations around the Meadowbank and Whale Tail sites. Dustfall is monitored for five transects along the AWAR and Whale Tail Haul Road. For all locations, UTM coordinates are provided in Table 3, and locations are shown in relation to minesite features in Figure 1 and Figure 2.

Table 3. UTM coordinates for the Meadowbank air quality and dustfall monitoring locations (all zone 14W). ^DF-6 replaced DF-5 in May 2019. *DF-7 will be installed in 2021.

Monitoring Location	Measured Parameters	Easting	Northing
DF-1	TSP, PM ₁₀ , PM _{2.5} , NO ₂ , dustfall	636850	7217663
DF-2	TSP, PM ₁₀ , PM _{2.5} , NO ₂ , dustfall	637895	7213049
DF-3	Dustfall	639599	7213198
DF-4	Dustfall	639233	7217074
DF-6a^	30-d NO ₂ and dustfall	608842	7254348
DF-6b^	TSP, PM ₁₀ , PM _{2.5} .	608361	7254974
DF-7*	Continuous NO ₂	632414	7233318
AWAR km 18	Dustfall	640208	7152082
AWAR km 78	Dustfall	626155	7199739
WTHR km 134	Dustfall	630941	7234375
WTHR km 151	Dustfall	618132	7238621
WTHR km 169	Dustfall	613782	7249508

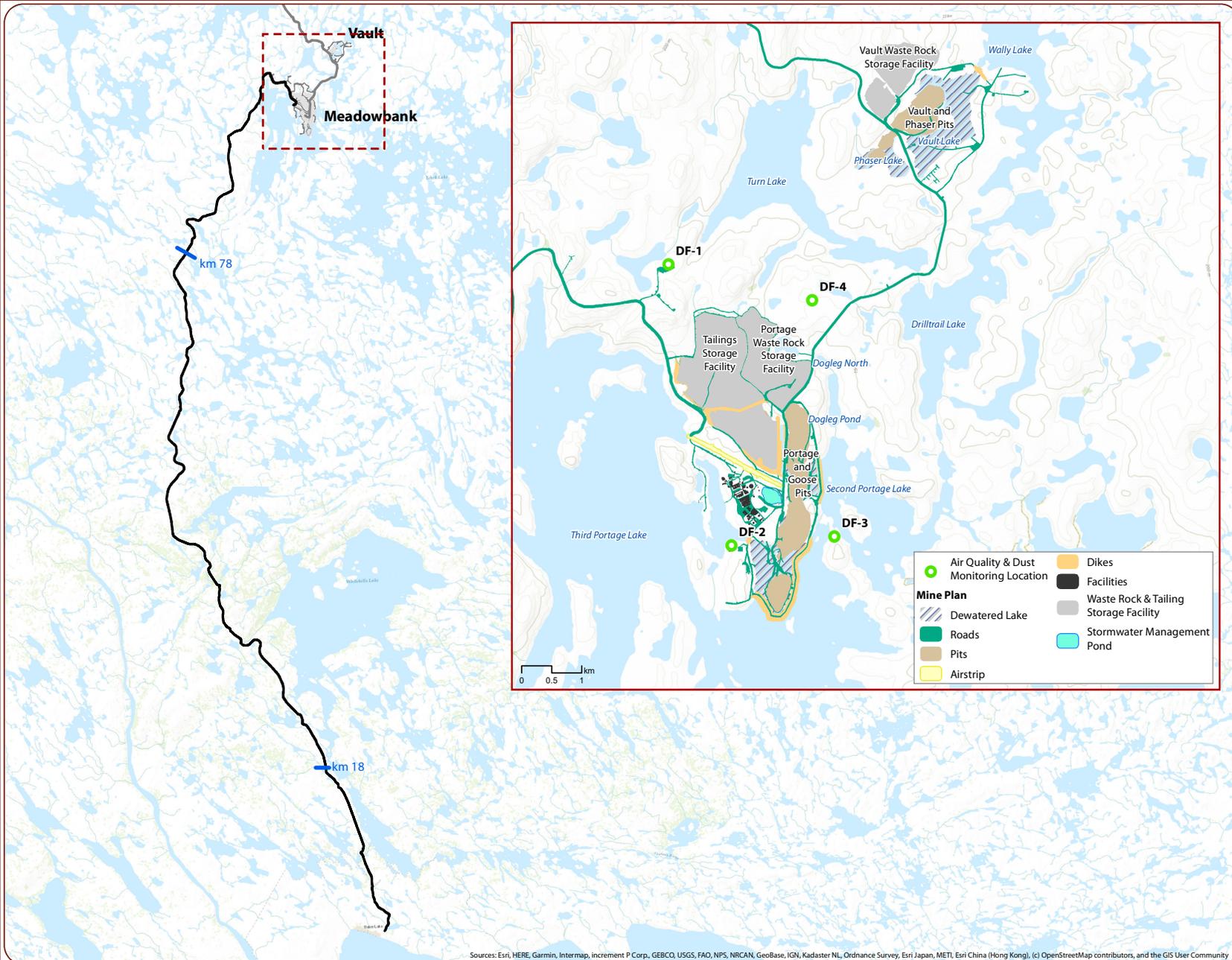
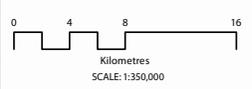


Figure 1: Air Quality and Dustfall Monitoring Locations Meadowbank Site and All Weather Access Road

-  Dustfall Monitoring Transect
- Mine Plan**
-  All Weather Access Road (AWAR)
-  Road
-  Mine Site

-  Air Quality & Dust Monitoring Location
- Mine Plan**
-  Dewatered Lake
-  Roads
-  Pits
-  Airstrip
-  Dikes
-  Facilities
-  Waste Rock & Tailing Storage Facility
-  Stormwater Management Pond



AGNICO EAGLE



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Disclaimer:
The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations, features, or roads, nor as a guide to navigation.

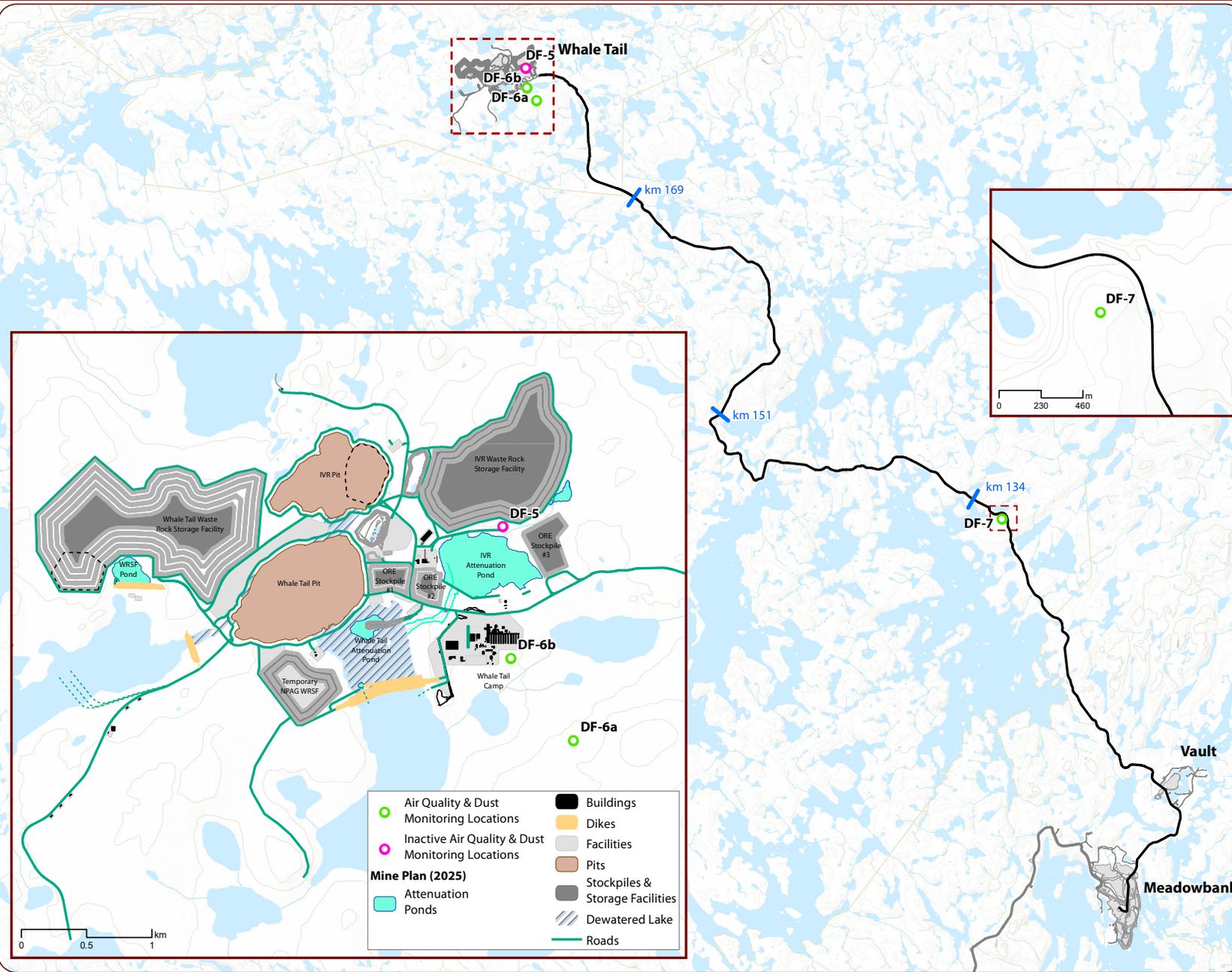
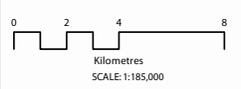


Figure 2: Air Quality and Dustfall Monitoring Locations
Whale Tail Site and Whale Tail Haul Road

Legend

- Air Quality & Dust Monitoring Locations
- Inactive Air Quality & Dust Monitoring Locations
- Dustfall Monitoring Transects
- Mine Plan (2025)**
- Whale Tail Haul Road
- Road
- Mine Site

- Air Quality & Dust Monitoring Locations
- Inactive Air Quality & Dust Monitoring Locations
- Mine Plan (2025)**
- Attenuation Ponds
- Buildings
- Dikes
- Facilities
- Pits
- Stockpiles & Storage Facilities
- Dewatered Lake
- Roads



AGNICO EAGLE



Disclaimer: The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations, features, or roads, nor as a guide to navigation.

1.4.1 Meadowbank Onsite Locations DF-1 – DF-4

Monitoring locations for the Meadowbank site were determined in consultation with Environment Canada in 2011. One station was moved in 2012 due to changes in the location of the Vault haul road (see 2012 Annual Report – Air Quality and Dust Monitoring Report).

Station DF-1 is located next to the explosive storage area (emulsion plant), and approximately 500 m north of the all-weather access road. PM₁₀ and PM_{2.5}, NO₂ and dustfall are monitored at this location year-round.

Station DF-2 is located at the northern corner of South Camp Island, near the TCG contractor area. All parameters (TSP, PM₁₀ and PM_{2.5}, NO₂ and dustfall) are monitored at this location year-round.

Station DF-3 is approximately 1,800 m east of the East Dike. According to the Plan, dustfall only is monitored at this location year-round.

Station DF-4 is approximately 1,500 m southwest of Vault Pit. The original location of this monitoring station was chosen before the beginning of the construction of the Vault Road. Realignment of the road during construction placed the station within 10 feet of the road. Therefore, Agnico re-positioned Station DF-4 approximately 480 m to the north-west on February 29, 2012 to be representative of the originally intended location relative to the road. According to the Plan, dustfall only is monitored at this location year-round.

1.4.2 Whale Tail Onsite Location DF-6 a & b

Station DF-6 replaced DF-5 in May 2019 after only 4 months of monitoring for dustfall and NO₂ at that station.

Station DF-6a (Figure 2) is sited approximately 800 to 1000 m southeast of the Whale Tail Camp in a representative area for dustfall and NO₂. Station DF-6b (Figure 2) is located on the southern edge of the main camp in an area identified as significant for determination of particulate matter (TSP, PM₁₀ and PM_{2.5}) relative to concentrations predicted further from the project footprint. Monitoring at DF-6a started in May 2019 for dustfall and NO₂. Suspended particulate monitoring (TSP, PM₁₀, PM_{2.5}) began at station DF-6b in April 2020¹.

1.4.3 Whale Tail Haul Road Location DF-7

In 2021, an active NO₂ monitor will be installed at station DF-7 (Figure 2). This station will be sited near the communications tower at kilometer 132 along the Whale Tail Haul Road. This location was chosen as there is readily available AC power from a diesel generator used to provide power to the communications tower. Station DF-7 will be located at least 200 m downwind of the generator to minimize the impacts of NO₂ emissions from the generator influencing measurements at the station. This monitoring location was also chosen as it will provide an accurate assessment of regional NO₂ concentrations that are not unduly influenced by a single facility but are still able to account for the impacts of developments at Whale Tail and Meadowbank. The station is downwind of Whale Tail based

¹ Although the Partisol instruments were installed at this station in November 2019, a permanent power supply was not available until April 2020.

on the predominant wind directions in the area, which is also a requirement of Project Certificate 008 Condition 1.c.

In response to ECCC concerns, Agnico held a call on March 16, 2021 to discuss the proposed location of the NO₂ continuous monitoring station along the WTHR at km 132. During this call, Agnico explained the rationale for choosing this location and also confirmed to ECCC that comparison of the monitoring results to the CAAQs and FEIS modelling predictions will be possible and are actually aligned with the requirements of the Project Certificate. Agnico also committed to adding a passive monitoring station along with the continuous NO₂ station. Based on this discussion, ECCC was in agreement with the proposed location at km 132. Agnico considers this concern resolved and will pursue with the installation and commissioning of the station at this location in 2021.

1.4.4 Meadowbank AWAR Dustfall Transects

Dustfall transects were established beginning in 2012 at kilometers 18 and 78 along the AWAR from Baker Lake to Meadowbank (Figure 1). Dustfall samples are collected annually during the summer season over 1-month averaging periods. Transects include monitoring stations at 25 m, 100 m, and 300 m from the road on both sides (east/downwind and west/upwind). Stations are also located at 1000 m for the km 78 transect only (presence of waterbodies has precluded sampling at this distance for km 18). These distances were chosen to bracket the smallest predicted zone of influence (ZOI) of 100 m. The zone of maximum dustfall has previously been reported to be within 300 m of roads under heavier use than the Meadowbank AWAR (Auerbach et al. 1997).

In recent years (from 2017-2019), transects have also been monitored in five locations where dust suppressant is applied (km 11, 25, 50, 69, 80). The purpose of these temporary monitoring stations was to evaluate the effectiveness of dust mitigation measures in comparison to the reference sites at km 18 and 78. This assessment was complete in 2019, and indicated that the application of dust suppressant effectively reduced roadside dustfall levels. Moving forward, Agnico will continue to apply the suppressant in these locations, but monitoring will be conducted only in areas without suppressant.

1.4.5 Whale Tail Haul Road Dustfall Transects

In 2019, dustfall transects were established between kilometers 18 & 19, 36 & 37, and 54 & 55 along the Whale Tail Haul Road. In 2019, the WTHR km markers were re-named as a continuation of the AWAR. The WTHR thus begins at km 115, and the sampling locations were renamed as km 134, 151, and 169, respectively (Figure 2).

Dustfall samples are collected during the summer season over one-month averaging periods. Each transect includes stations at 25 m, 100 m, 300 m and 1000 m upwind, (east/north) and downwind (west/south) of the haul road. The 1000 m sample at location km 151 east is collected at approximately 800 m, due to the presence of a waterbody.

SECTION 2 • MONITORING METHODS

2.1 TSP, PM₁₀, PM_{2.5}

Suspended particulate matter is generated by wind erosion of local landscapes, movement of vehicles/equipment, airstrip activities, construction activities, the combustion of diesel fuel, and solid waste incineration.

The monitoring program for suspended particulates utilizes Partisol Model 2025 sequential air samplers (single and dichotomous units) installed at two locations to measure:

- Total suspended particulates (TSP) – particulate matter less than 100 µm;
- PM₁₀ – particulate matter less than 10 µm; and
- PM_{2.5} – particulate matter less than 2.5 µm.

In 2020, Agnico Eagle field staff aimed to sample suspended particulates (TSP, PM₁₀, PM_{2.5}) for 24-h periods every six days using Partisol Plus Model 2025 Sequential Air Samplers (TSP) and Partisol Plus Model 2025-D Dichotomous Sequential Air Samplers (PM_{2.5} and PM_{coarse}). Partisol samplers draw in a stream of ambient air at a controlled flow rate, and particulates are collected on a pre-weighed filter supplied by an accredited laboratory. The exposed filter is then shipped back to the laboratory and re-weighed to measure the total accumulated particulates. Calculations for TSP, PM₁₀ and PM_{2.5} were performed according to the Partisol operating manual, as follows.

TSP is calculated as:

$$\text{TSP} = M_{\text{TSP}}/V$$

Where: TSP = mass concentration of particulates (µg/m³)

M_{TSP} = final mass of TSP filter – initial mass of filter (µg/filter)

V = volume of air drawn in during the sampling period (~24 m³)

Since the dichotomous unit splits the intake air stream to determine PM_{2.5} and PM_{coarse} (PM_{10-2.5}), the volume of air is different for each filter. Calculations are performed as follows:

PM_{2.5} is calculated as:

$$\text{PM}_{2.5} = M_{2.5}/V_{2.5}$$

Where: PM_{2.5} = mass concentration of particulates (µg/m³)

$M_{2.5}$ = final mass of PM_{2.5} filter – initial mass of filter (µg/filter)

$V_{2.5}$ = volume of air drawn through the PM_{2.5} filter during the sampling period (~21.7 m³)

And PM_{coarse} is calculated as:

$$\text{PM}_{\text{coarse}} = M_{\text{coarse}}/V_{\text{total}} - \text{PM}_{2.5}(V_{\text{coarse}}/V_{\text{total}})$$

Where: PM_{coarse} = mass concentration of particulates (µg/m³)

M_{coarse} = final mass of PM_{coarse} filter – initial mass of filter (µg/filter)

V_{total} = total volume of air drawn into unit during sampling (~24m³)

V_{coarse} = volume of air drawn through the PM_{coarse} filter during the sampling period (~2.4 m³)

Concentration of PM₁₀ is then calculated as PM_{coarse} + PM_{2.5}.

For comparison to Government of Nunavut Ambient Air Quality Guidelines (2011), concentrations of particulates need to be calculated using air volumes normalized to 25°C and 101.3kPA (standard temperature and pressure; STP). Depending on system settings, standardized volumes were either recorded by the Partisol unit, or were calculated from average temperature and pressure values recorded by the Partisol unit during the sampling period.

2.2 DUSTFALL

Dustfall collection is a passive program that provides a measure of particulate deposition in the vicinity of the Project. The main dust generation processes at Meadowbank and Whale Tail are wind erosion of site structures (e.g. the Rock Storage Facility), and fugitive sources from open pit mining, rock crushing and movement of vehicles/equipment/air traffic on site.

In accordance with ASTM methods for dustfall measurement (ASTM, 2004), dustfall samples were collected in open vessels containing a purified liquid matrix provided by an accredited laboratory. Particles are deposited and retained in the liquid, which is then filtered to remove large particles (e.g. leaves, twigs) and analyzed by the accredited laboratory for total and fixed (non-combustible) dustfall. Sampling containers are deployed in the field over one-month periods, and calculated dustfall rates are normalized to 30 days (mg/cm²/30 days per ASTM 1739-98). This sampling method is widely used in air quality studies in Nunavut and elsewhere for dustfall monitoring.

ASTM methods suggest collection of the dustfall sample at 2-3 m height on a utility pole to prevent re-entrainment of particulates from the ground, and to reduce vandalism and potential for wildlife interaction. For locations DF-1 – DF-6, samples have always been collected in this manner. However, due to the difficulty of constructing and deploying stands to hold the large number of sample containers used for roadside dustfall transects, all road-side sampling canisters were deployed at ground level from 2013 - 2019. Although comparative studies conducted in 2012 and 2019 indicated that samples collected at ground levels provide a conservative estimate of dustfall, all samples were moved to stands in 2020 based on comments received from regulators. In 2020, one AWAR transect (km 78) and one WTHR transect (km 169) was sampled at both heights in response to NIRB requests, to further compare results.

2.3 NO₂

NO₂ is produced primarily through the combustion of hydrocarbons in powerplants, vehicles and other mining equipment, and during blasting.

Ambient concentrations of NO₂ by volume (ppb) are analyzed over one month periods (approximately 30 days) using a passive sampling device provided by the accredited laboratory. The annual average NO₂ concentration by volume was calculated from the monthly data for comparison against the relevant GN guideline.

Ambient concentrations of NO₂ by volume (ppb) will also be measured at one location (DF-7) on a continuous basis for comparison with CAAQS. NO₂ will be monitored using a specific unit adapted to measure ambient concentrations of NO, NO₂ and NO_x. This unit is planned to be installed in 2021.

2.4 WEATHER DATA

Weather data for the dustfall and air quality monitoring plan is collected using the Meadowbank and Whale Tail Pit permanent climate station. Daily averages for wind speed, wind direction and temperature are available from this station.

2.5 GREENHOUSE GAS EMISSIONS

Agnico Eagle is required by the Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions based on annual fuel consumption, composition and the US EPA's AP-42 emission factors. Please see the Meadowbank and Whale Tail Greenhouse Gas Reduction Plan.

SECTION 3 • DATA ANALYSIS

3.1 REGULATORY STANDARDS

Regulatory standards for the air quality parameters of concern are provided in Table 4.

Data collected from the onsite air quality monitoring stations are compared primarily to the applicable Government of Nunavut Environmental Guidelines for Ambient Air Quality (October, 2011). These standards are available for TSP, PM_{2.5}, and NO₂.

No PM₁₀ standard is available in Nunavut, so results are compared to the BC Air Quality Objective (August, 2013).

Likewise, no standards for dustfall are available for Nunavut. Results of the dustfall analysis for transects along the AWAR and the WTHR are compared to the Alberta Ambient Air Quality Guideline for residential and recreational areas according to thresholds for dust management described in the Air Quality and Dustfall Monitoring Plan (March, 2020). Results of dustfall analysis at onsite stations DF-1 to DF-6 are compared to the Alberta guideline for commercial and industrial areas. As stated in the Alberta guideline, these dustfall guidelines may be used for airshed planning and management, as a general performance indicator, and to assess local concerns.

Continuous NO₂ monitoring results and PM_{2.5} data will also be compared to Canadian Ambient Air Quality Standards (CAAQS). CAAQS values represent voluntary objectives for an individual site, and are typically used at a regional scale for airshed planning purposes.

Table 4. Standards for ambient air quality for the parameters of concern at Meadowbank and Whale Tail.

Parameter	Averaging Period	GN Guideline		CAAQS (2020)		Other Standard
		µg/m ³	ppb	µg/m ³	ppb	
TSP	24-h average	120				
	Annual geometric mean	60				
PM ₁₀	24-h average					50 µg/m ³ *
PM _{2.5}	24-h average	30		27**		
	Annual arithmetic mean			8.8***		
NO ₂	1-h average	400	213	32 [‡]	60 [‡]	
	24-h average	200	106			
	Annual arithmetic mean	60	32	9.1**	17.0**	
Total Dustfall	30-d average					0.53 mg/cm ² [^]
						1.58 mg/cm ² ^{^^}

* BC Air Quality Objective (August, 2013)
 ** The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations
 ***The 3-year average of the annual average of all 1-hour concentrations
 ‡The 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentrations
 **The average over a single calendar year of all 1-hour average concentrations
 ^ Alberta Ambient Air Quality Guideline for recreational/residential areas (August, 2013) – applied to AWAR & WTHR transects (500+ m).
 ^^ Alberta Ambient Air Quality Guideline for commercial/industrial areas (August, 2013) – applied to DF-1 – DF-6 onsite locations.

3.2 FEIS PREDICTIONS

3.2.1 Whale Tail Site

For the Whale Tail site, measured values at DF-6 are also compared to FEIS-modeled maximum concentrations for this location to ensure modeling adequately captured the worst-case scenario. Maximum predicted values for the DF-6 locations on the Whale Tail site are shown in Table 5. Dust deposition rates were predicted for the haul road (see Section 3.2) but not for the Whale Tail site.

Table 5. Model-predicted maximum concentrations of measured criteria air contaminants for location DF-6a or b (as applicable) the Whale Tail site (FEIS Addendum, Appendix 4C – Agnico Eagle, 2018b).

Parameter	Location	Time Frame	Concentration
Total Suspended Particulate (TSP)	DF-6b	24-h	>120 µg/m ³
		Annual	30 - 45 µg/m ³
Coarse Particulate Matter (PM ₁₀)	DF-6b	24-h	>50 µg/m ³
Fine Particulate Matter (PM _{2.5})	DF-6b	24-h	21 - 28 µg/m ³
		Annual	5 – 7.5 µg/m ³
Nitrogen Dioxide (NO ₂)	DF-6a	Annual	8 - 16 ppb

3.2.2 Whale Tail Haul Road

3.2.2.1 NO₂

FEIS Addendum modelling (Agnico Eagle, 2018b) indicated that low level emissions of NO₂ will be produced by vehicles using the haul road. The model predicted ground level concentrations of NO₂ due to haul road vehicle emissions represent a very small increase compared to background concentrations and are well below their relevant ambient air quality standards. No quantitative predictions are available for comparison to measured values at DF-7.

3.2.2.2 Dustfall

The primary goal of Whale Tail Haul Road dustfall monitoring is to track trends in dustfall generated by haul road traffic, and verify predictions made during the FEIS process. However, due to differences in particle sizes collected by static dustfall monitors and those assessed through air quality emissions and dispersion modelling, these are considered conservative, screening-level comparisons only. Since dustfall canisters collect particles across a much wider range of sizes than included in standard modeling, they are very likely to measure higher rates of total dustfall than those specified in the FEIS. However, if measured dustfall is lower than predicted dustfall, model results can be verified as conservative.

Table 6 shows FEIS-predicted maximum monthly dust deposition from haul-road generated dust as a function of distance from the road. Results of the Whale Tail Haul Road monitoring program (total dustfall) are compared to these values plus background concentrations of total dustfall. A background dustfall value of 0.27 mg/cm²/30d is assumed, based on the maximum dustfall rate measured in this area (km 37, now km 152) during baseline studies for this area in 2015.

In general, FEIS predictions indicated that maximum monthly dust deposition rates will be below the Alberta guideline for residential and recreational areas within 500 m of the haul road (0.53 mg/cm²/30d). This value was also set as the threshold for supplemental dust mitigation measures (Section 1.2).

Table 6. Predicted maximum monthly dust deposition rate as a function of distance from the Whale Tail Haul Road (FEIS Addendum, Appendix 4C, Table 4-C-24 – Agnico Eagle, 2018b).

Distance (m)	Predicted Dust Deposition (mg/cm ² /30d)	Measured Maximum Background Dust Deposition (mg/cm ² /30d)	Predicted + Background Dust Deposition (mg/cm ² /30d)
25	3.4	0.27	3.67
100	1.9	0.27	2.17
300	0.59	0.27	0.86
1000	0.11	0.27	0.38

SECTION 4 • 2020 MONITORING RESULTS

4.1 TSP, PM₁₀, PM_{2.5}

Sampling dates and 24-h average concentrations of TSP, PM₁₀ and PM_{2.5} are shown in Figures 3 - 5. Despite historical difficulties with Partisol operation and maintenance, no significant gaps in sample collection occurred in 2020. Any data loss or operational difficulties for the Partisol samplers are discussed further in Section 4.4.

As in previous years, TSP concentrations were generally well below regulatory standards. Across all three monitoring stations, 4 samples exceeded the GN 24-h standard of 120 µg/m³, with a maximum measured value of 283 µg/m³ occurring at DF-1. This maximum continues to be within the historically recorded high value of 459 µg/m³ (Section 5.1). For the Whale Tail site location (DF-6b), FEIS Addendum predictions (Section 3.2.1) indicated that maximum 24-h TSP concentrations would exceed the GN 24-h standard of 120 µg/m³, which occurred on just one occasion in 2020.

For PM₁₀, one sample across all three stations exceeded the BC Air Quality Objective of 50 µg/m³ for the 24-h average (211 µg/m³ at DF-1 on May 5). FEIS Addendum predictions for the Whale Tail site (Section 3.2.1) indicated that maximum PM₁₀ concentrations at DF-6b would exceed the BC 24-h standard of 50 µg/m³ at DF-6b, which did not occur in 2020.

For PM_{2.5}, no samples exceeded the GN guideline of 30 µg/m³ for the 24-h average, or the 2020 Canadian Ambient Air Quality Standard of 27 µg/m³ for the 24-h average, or the FEIS Addendum maximum model prediction of 21 - 28 µg/m³ for this location.

Aside from a possible seasonal influence in concentrations of suspended particulates, no major trends throughout the year are evident. In early October, elevated levels of dust generation were observed for the Meadowbank Tailings Storage Facility. This event was reported to regulators as a potential spill (NT-NU Spill Report dated October 7, 2020), and follow-up monitoring and remedial actions were implemented in consultation with KIA, CIRNAC, and ECCC. The cause of this event was identified as dryer than usual tailings, prolonged warm and dry summer season combined with rapid freezing weather and strong winds in early October. A review of the annual weather data (Appendix A) indicates that in fact, the highest daily average wind speed in 2020 was measured on October 7, at 14.5 m/s. Despite these observations and conditions, results of the regular air quality monitoring program do not indicate a significant increase in suspended particulate matter or measured dustfall (see Section 4.2.1) during this event.

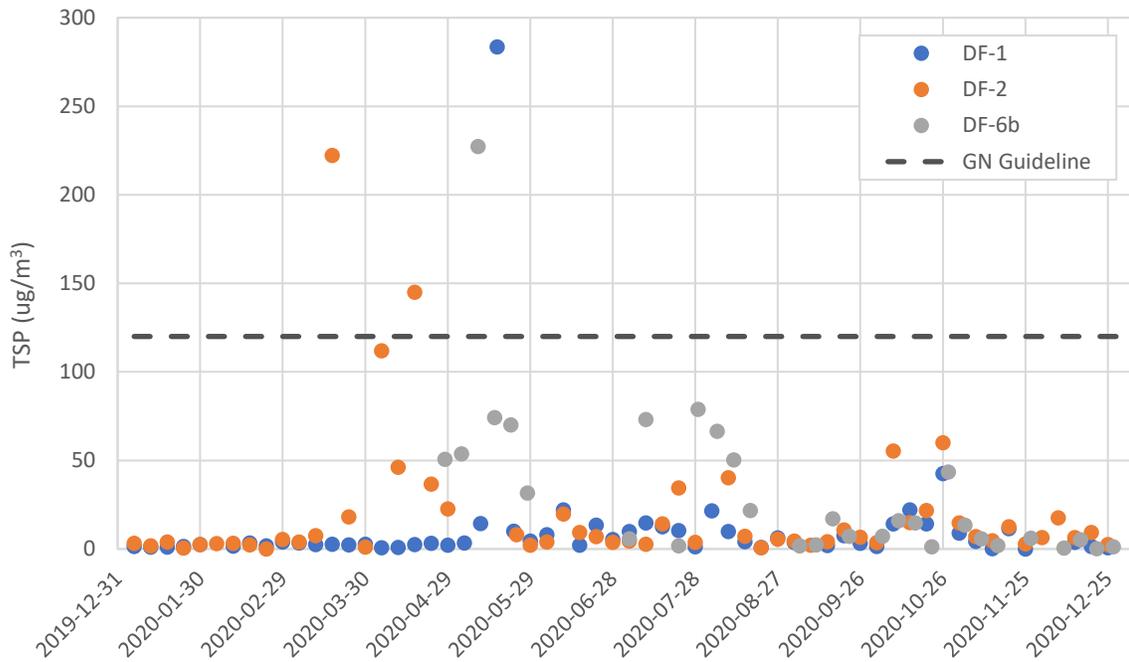


Figure 3. 24-h average concentrations of total suspended particulates (TSP) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality.

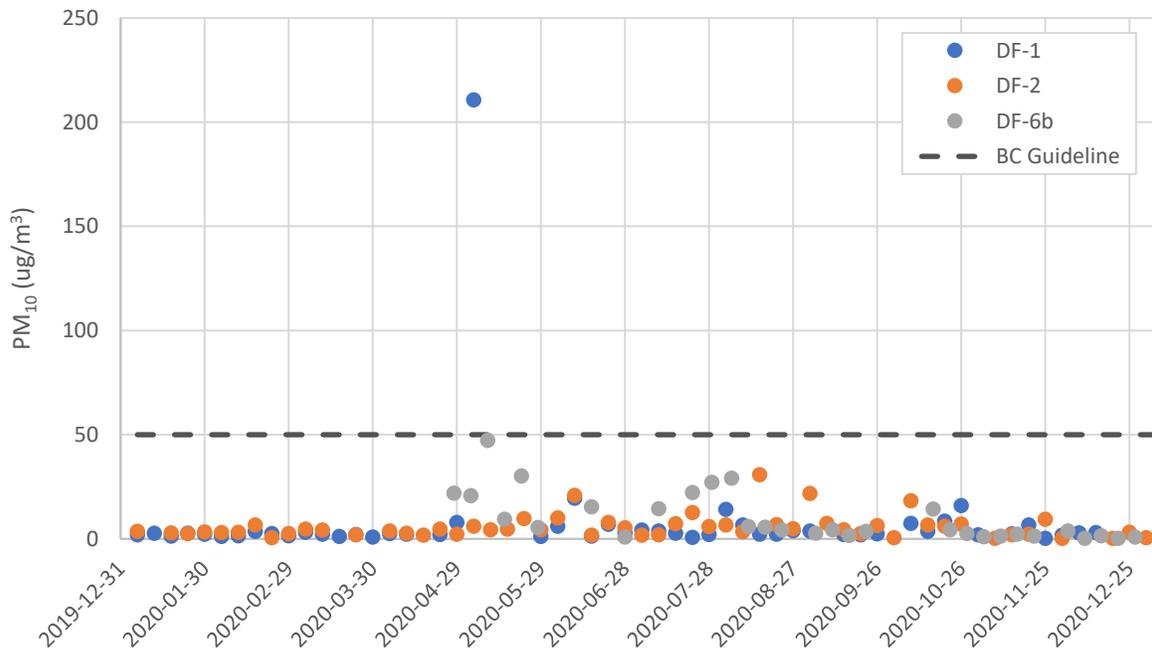


Figure 4. 24-h average concentration of airborne particulate matter less than 10 microns (PM₁₀) at Meadowbank stations DF-1, DF-2, DF-6b. Dashed line indicates the BC Air Quality Objective for this parameter.

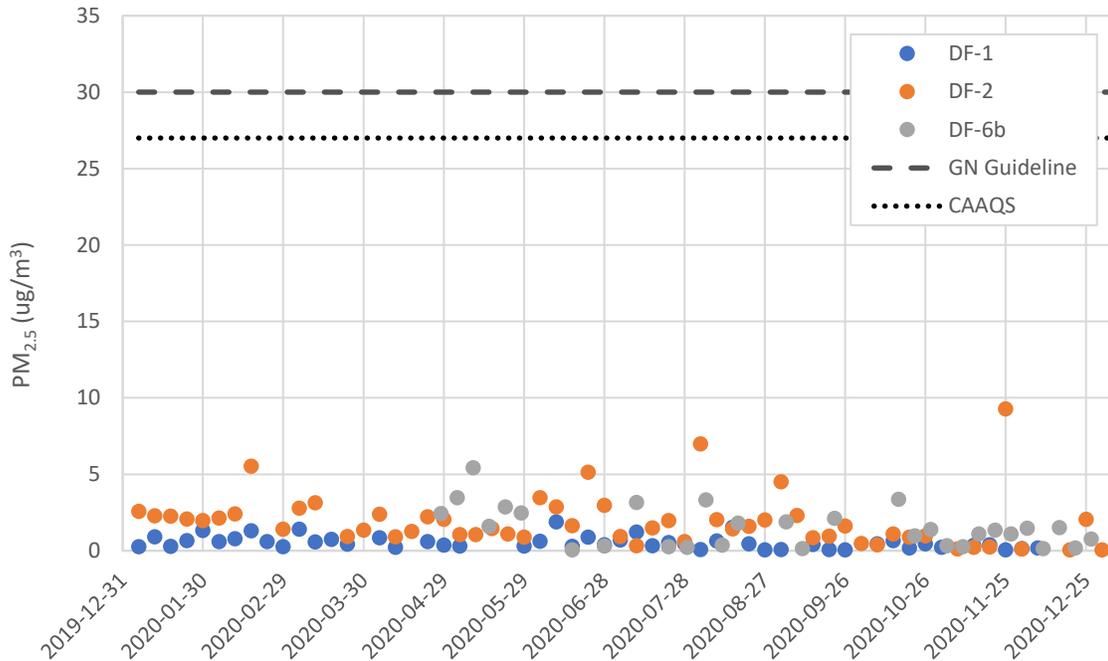


Figure 5. 24-h average concentration of airborne particulate matter less than 2.5 microns (PM_{2.5}) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the GN guideline for ambient air quality, and the dotted line represents the Canadian Ambient Air Quality Standard.

Annual geometric mean concentrations of TSP at DF-1, DF-2, and DF-6b were 3.8, 7.1, and 14.1 $\mu\text{g}/\text{m}^3$, respectively (Table 7). These estimates are well below the annual GN guideline of 60 $\mu\text{g}/\text{m}^3$, and are similar to values observed in previous years. Annual arithmetic mean concentrations of PM_{2.5} were 0.55, 1.85, and 1.53 $\mu\text{g}/\text{m}^3$ at DF-1, DF-2, and DF-6b respectively, which are well below the 2020 Canadian Ambient Air Quality Standard for annual average PM_{2.5} of 8.8 $\mu\text{g}/\text{m}^3$. It is noted that the CAAQS for PM_{2.5} is based on the 3-year average of 1-hr concentrations. Comparisons to annual averages are considered conservative, and 3-year results will be reviewed if any exceedances occur in annual data.

The annual arithmetic mean TSP concentration was also calculated from measured 24-h samples and compared along with the PM_{2.5} annual arithmetic mean to the FEIS Addendum model-predicted maximum annual concentration. These values are shown in Table 8. Neither TSP nor PM_{2.5} annual averages exceeded maximum model predictions for the DF-6b location.

Table 7. Annual geometric mean concentrations of TSP and arithmetic mean concentrations of PM_{2.5} at DF-1, DF-2, and DF-6b for comparison with the GN guideline and CAAQS. “-” indicates not available or not required to be calculated.

Year	TSP (µg/m ³)				PM _{2.5} (µg/m ³)			
	DF-1	DF-2	DF-6b	GN Guideline	DF-1	DF-2	DF-6b	CAAQS
2012	8	12	-	60	-	-	-	-
2013	4.6	14.0	-	60	-	-	-	-
2014	6.5	12.8	-	60	-	-	-	-
2015	5.1	9.8	-	60	-	-	-	10
2016	3.8	6.4	-	60	-	-	-	10
2017	2.1	10.5	-	60	-	-	-	10
2018	4.9	9.8	-	60	0.2	1.4	-	10
2019	7.0	6.6	-	60	0.5	1.5	-	10
2020	3.8	7.1	14.1	60	0.6	1.9	1.5	8.8

Table 8. Arithmetic mean of the measured 24-h concentrations and FEIS-modeled maximum annual concentrations of TSP and PM_{2.5} for monitoring station DF-6b at the Whale Tail site. FEIS values from Agnico Eagle, 2018b (FEIS Addendum, Appendix 4C).

Year	TSP (µg/m ³)		PM _{2.5} (µg/m ³)	
	Measured Annual Mean	FEIS-Modeled Annual Mean	Measured Annual Mean	FEIS-Modeled Annual Mean
2020	35.0	30 - 45	1.44	5 – 7.5

4.2 DUSTFALL

4.2.1 Onsite Locations DF-1 – DF-6

Results of the 2020 dustfall sampling program (30-day normalized rates of total and fixed dustfall) are provided in Figures 6 - 10. Samples are plotted by the collection start date. To provide context, the Alberta guideline for industrial/commercial areas for total dustfall is indicated (1.58 mg/cm²/30-d). This guideline is based on aesthetic or nuisance concerns and is to be used for airshed planning and management, as a general performance indicator, and to assess local concerns. The established threshold for dust mitigation actions for these onsite stations is equivalent to this guideline.

Of the 54 onsite dustfall samples collected in 2020, one exceedance of the industrial/commercial area guideline occurred for total dustfall, in the January 20 sample at DF-2. However, this sample is considered an outlier, as the fixed dustfall result (the non-combustible fraction, more representative of road-related or inorganic dust sources) for this sample was well below the guideline, and represented only 3% of total dustfall. The recreational/residential area guideline was exceeded in an additional two samples, which is similar to previous years (see Section 5.2). While the use of these guidelines is not well defined, there are no recreational or residential users within vicinity of the minesite and exceedance of occasional samples is not expected to result in significant aesthetic or nuisance concerns.

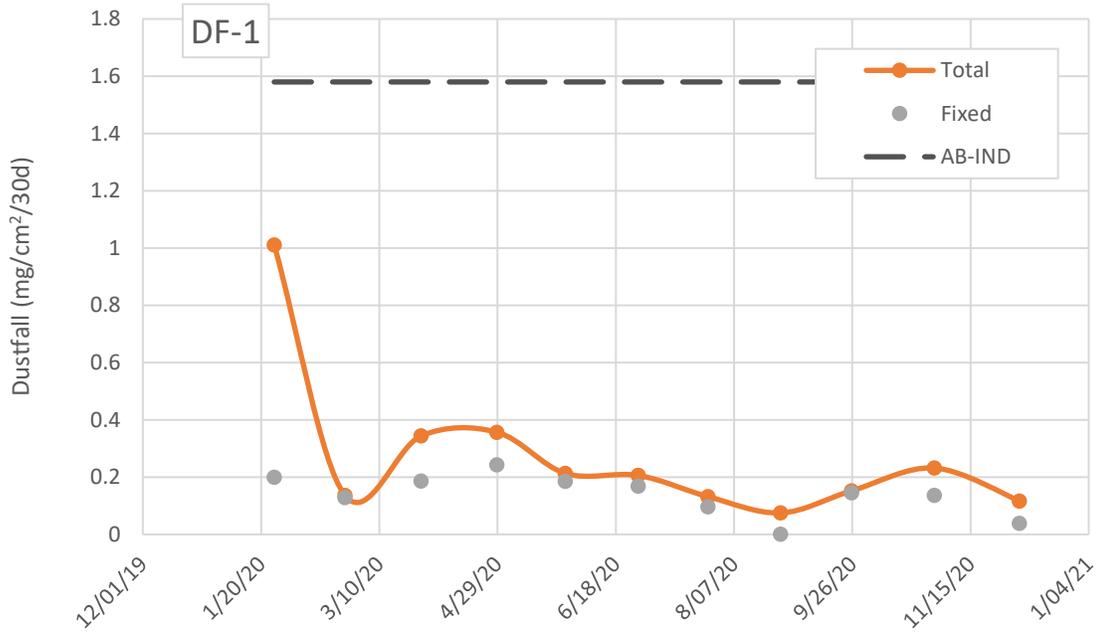


Figure 6. 30-day-normalized rates of total and fixed dustfall at DF-1 at the Meadowbank site. Points represent start date of sample collection. AB-IND indicates the Alberta guideline for industrial/commercial areas, which is equivalent to the management threshold for this station.

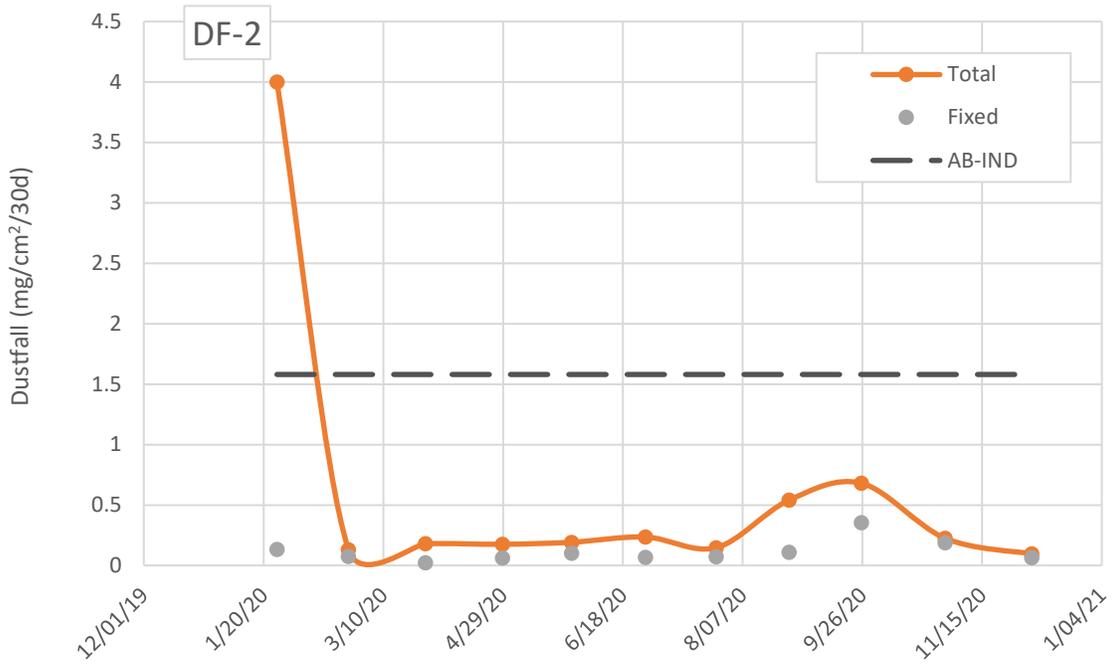


Figure 7. 30-day-normalized rates of total and fixed dustfall at DF-2 at the Meadowbank site. Points represent start date of sample collection. AB-IND indicates the Alberta guideline for industrial/commercial areas, which is equivalent to the management threshold for this station.

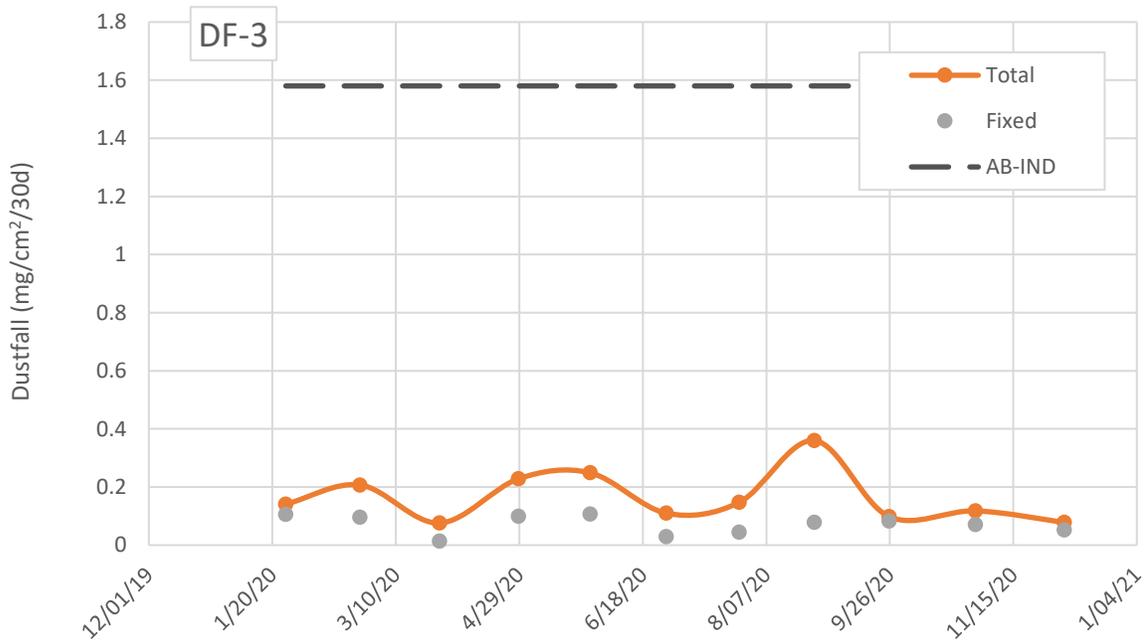


Figure 8. 30-day-normalized rates of total and fixed dustfall at DF-3 at the Meadowbank site. Points represent start date of sample collection. AB-IND indicates the Alberta guideline for industrial/commercial areas, which is equivalent to the management threshold for this station.

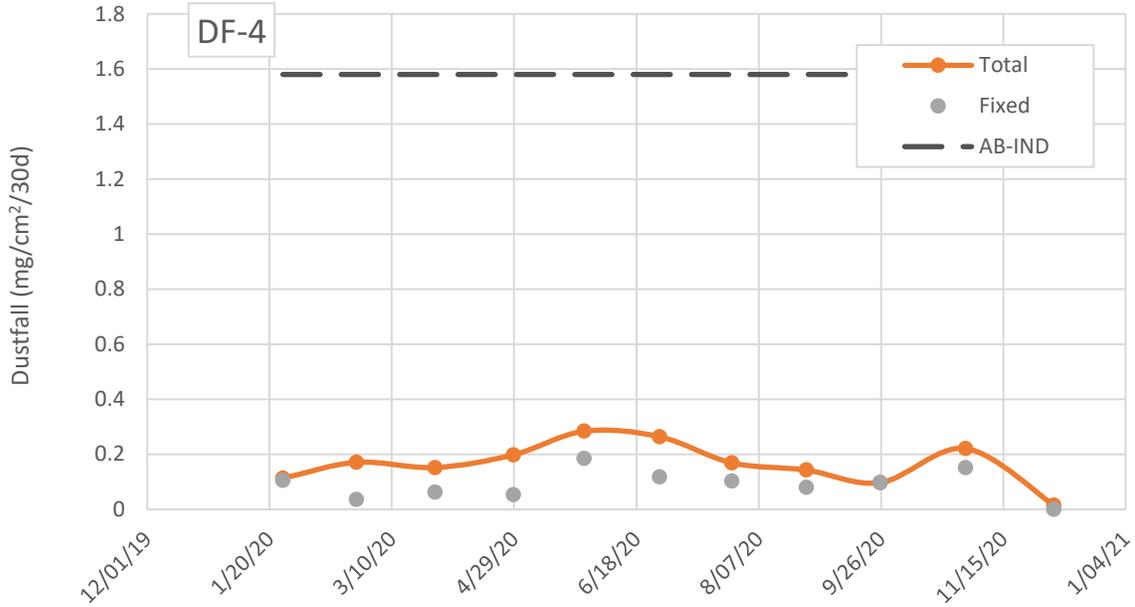


Figure 9. 30-day-normalized rates of total and fixed dustfall at DF-4 at the Meadowbank site. Points represent start date of sample collection. AB-IND indicates the Alberta guideline for industrial/commercial areas, which is equivalent to the management threshold for this station.

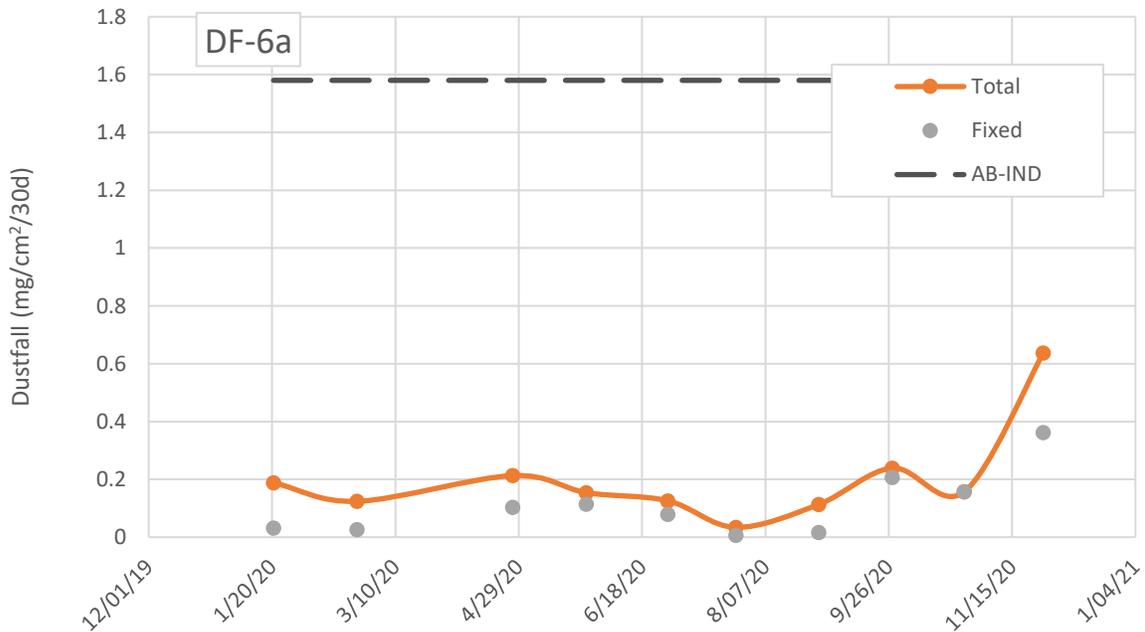


Figure 10. 30-day-normalized rates of total and fixed dustfall at DF-6a at the Whale Tail site. Points represent start date of sample collection. AB-IND indicates the Alberta guideline for industrial/commercial areas, which is equivalent to the management threshold for this station.

4.2.2 Meadowbank AWAR Dustfall Transects

As described in Section 1.3.4, dustfall sampling was conducted for two transects along the AWAR in 2020, in areas where dust suppressant was not applied. Results are presented in Figures 11 and 12, and are compared to the Alberta guideline for recreational/residential areas, for context. This guideline is applied to samples collected at and beyond 500 m, according to the management threshold established in the Air Quality and Dustfall Monitoring Plan (March, 2020). However, it should be noted that this guideline is based on nuisance and aesthetic concerns, and not necessarily impacts to vegetation or wildlife. It is also generally considered to apply to a specific dust source, over and above background values. Therefore, this is considered a conservative, screening-level comparison, and any significant, ongoing exceedances will be further investigated.

For all AWAR transects, rates of dustfall declined below the threshold of $0.53 \text{ mg/cm}^2/30\text{d}$ within 300 m, and in most cases, within 100 m.

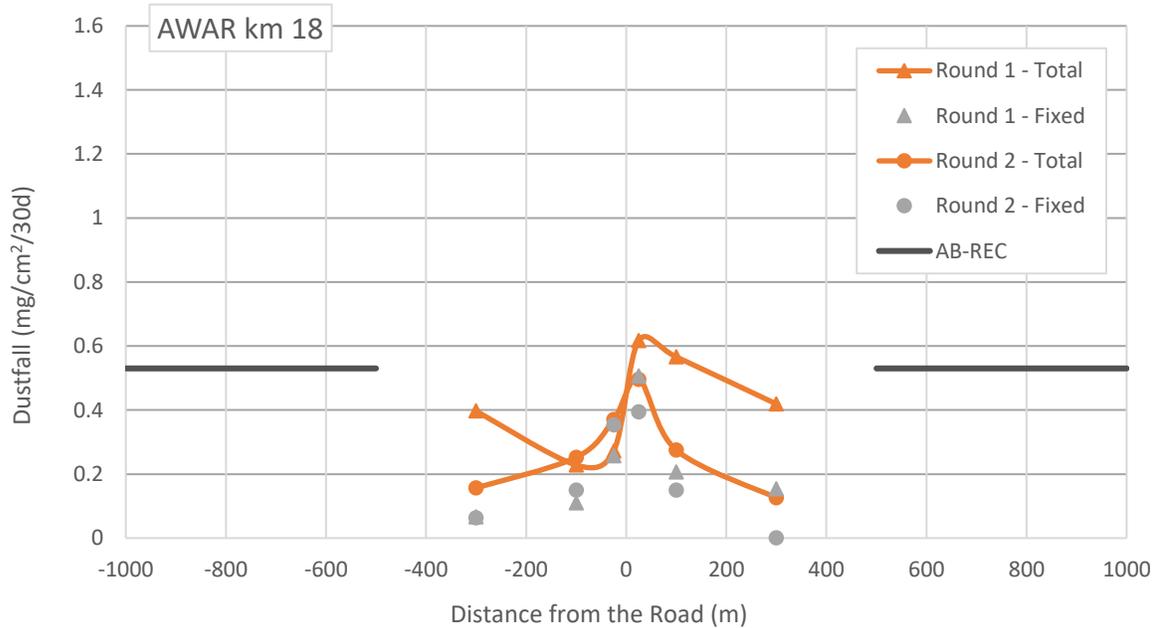


Figure 11. 30-day-normalized rates of total and fixed dustfall at km 18 along the Meadowbank AWAR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began August 1. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.

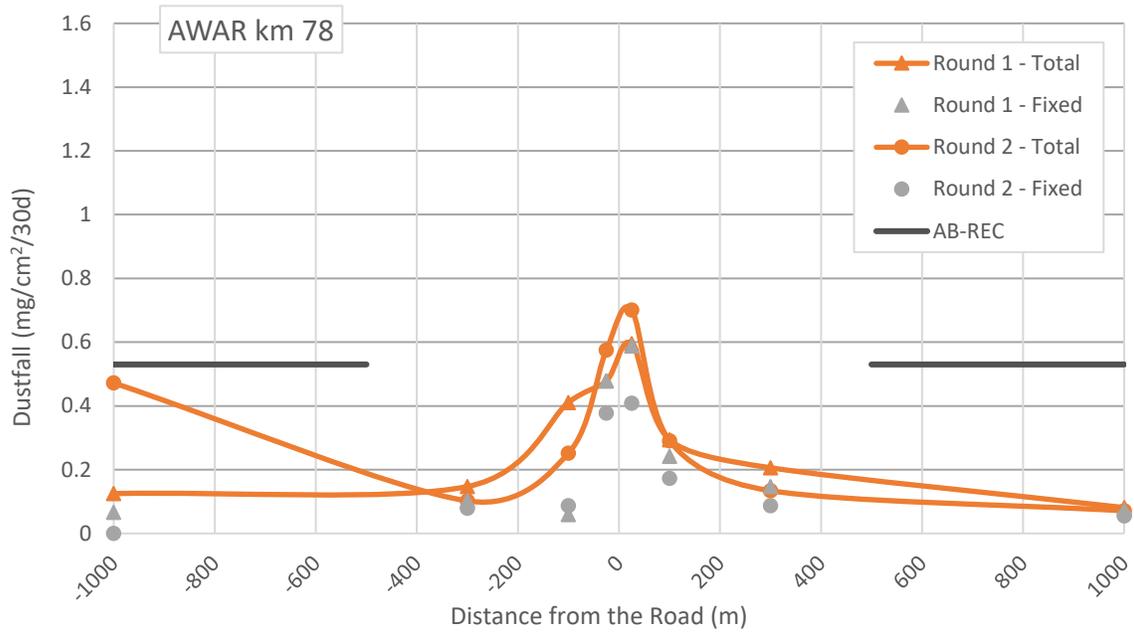


Figure 12. 30-day-normalized rates of total and fixed dustfall at km 78 along the Meadowbank AWAR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began August 1. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.

4.2.3 Whale Tail Haul Road Dustfall Transects

Results for all samples collected in 2020 for monitoring rounds 1 (started July 2) and 2 (started July 31) are provided in Figures 13 - 15.

Some exceedances of the Alberta guideline for recreational/residential areas occurred, but only at the 25-m distance, and this was predicted in air quality modeling for the Project. FEIS modelling predicted that maximum deposition rates along the AWAR would decline below the Alberta guideline within 500 m of the road. For all transects in 2020, this occurred within 100 m.

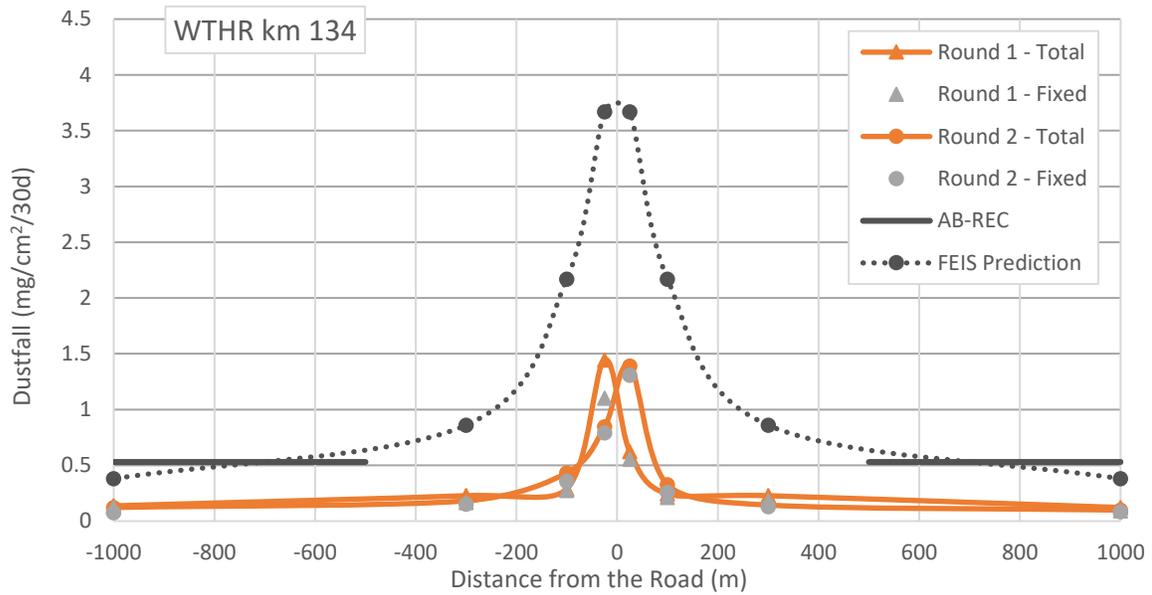


Figure 13. 30-day-normalized rates of total and fixed dustfall at km 134 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.

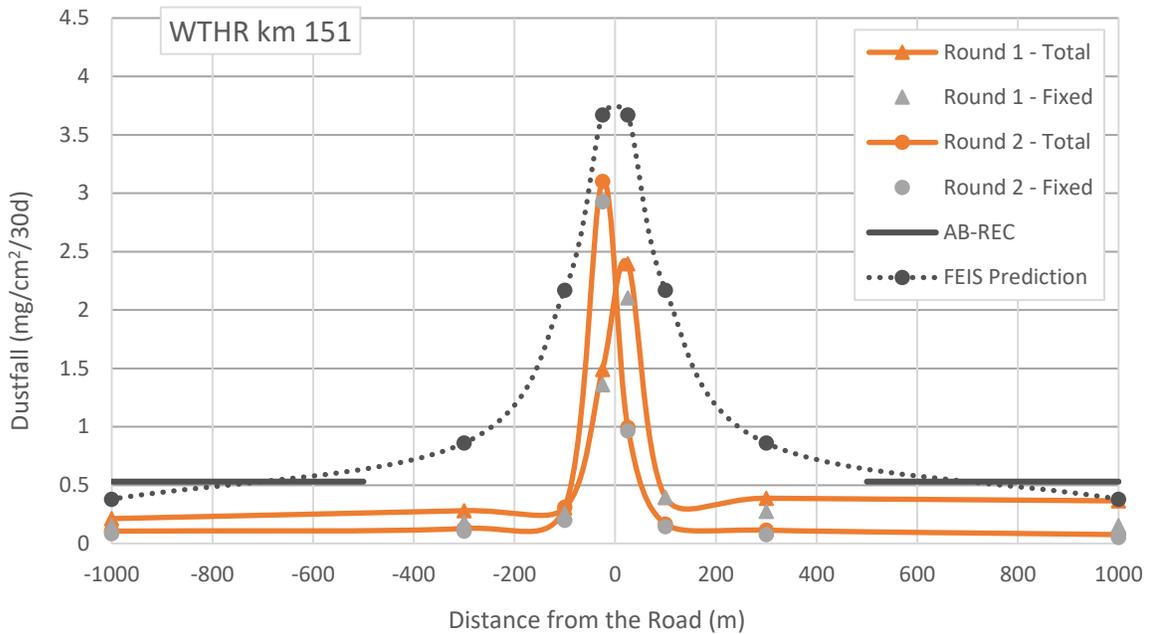


Figure 14. 30-day-normalized rates of total and fixed dustfall at km 151 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.

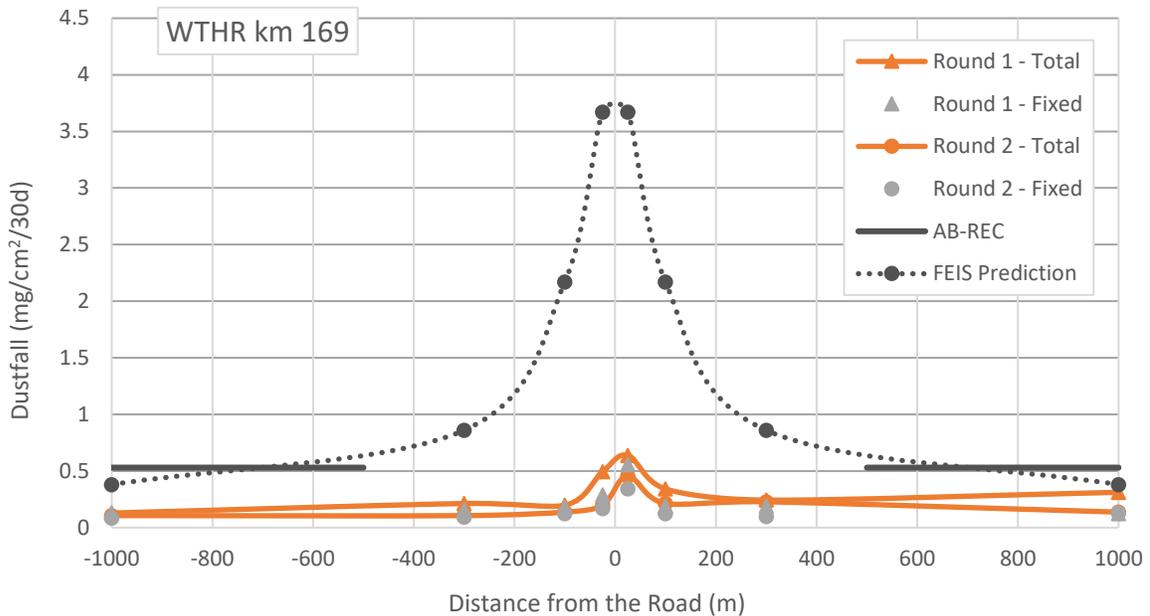


Figure 15. 30-day-normalized rates of total and fixed dustfall at km 169 along the Meadowbank WTHR in 2020. Points represent start date of sample collection. Monitoring Round 1 began July 2, and Round 2 began July 31. Positive distances represent the upwind/west side of the road, and negative distances represent the downwind/east side.

4.2.4 Comparison of Collection Methods

As described in Section 2.2, ASTM methods suggest collection of dustfall samples at 2-3 m height on a utility pole to prevent re-entrainment of particulates from the ground, and to reduce vandalism and potential for wildlife interaction. Due to the difficulty of constructing and deploying stands to hold the large number of sample containers used for road-side dustfall sampling, and assumptions that re-entrainment from the ground would result in conservative estimates, historical dustfall sampling along the AWAR has occurred at ground level (2013 – 2019). In 2012 and 2019, trials were conducted to compare results at ground level and on stands (1.8 m height), and results indicated ground level samples provided conservatively high estimates of dustfall. In 2020, all samples were collected on stands in response to ECCC comments during the Whale Tail permitting process. However, two transects (km 78 and 169) were also sampled at ground level in response to NIRB recommendations.

Total dustfall results for these transects in 2020 are shown in Figure 16. In all cases for samples up to 300 m, dustfall collected at ground level was the same as, or exceeded dustfall collected on stands. Results collected at 1000 m are considered representative of background, and any differences are marginal. These results are similar to those collected in 2019 and continue to support Agnico’s assumptions that ground-level sampling results in conservatively high estimates of dustfall. Nevertheless, Agnico will conduct all future monitoring for dustfall on stands in concordance with standard methods, for improved comparison of results with regulatory guidelines and FEIS predictions. Ground-level samplers will not be deployed in 2021.

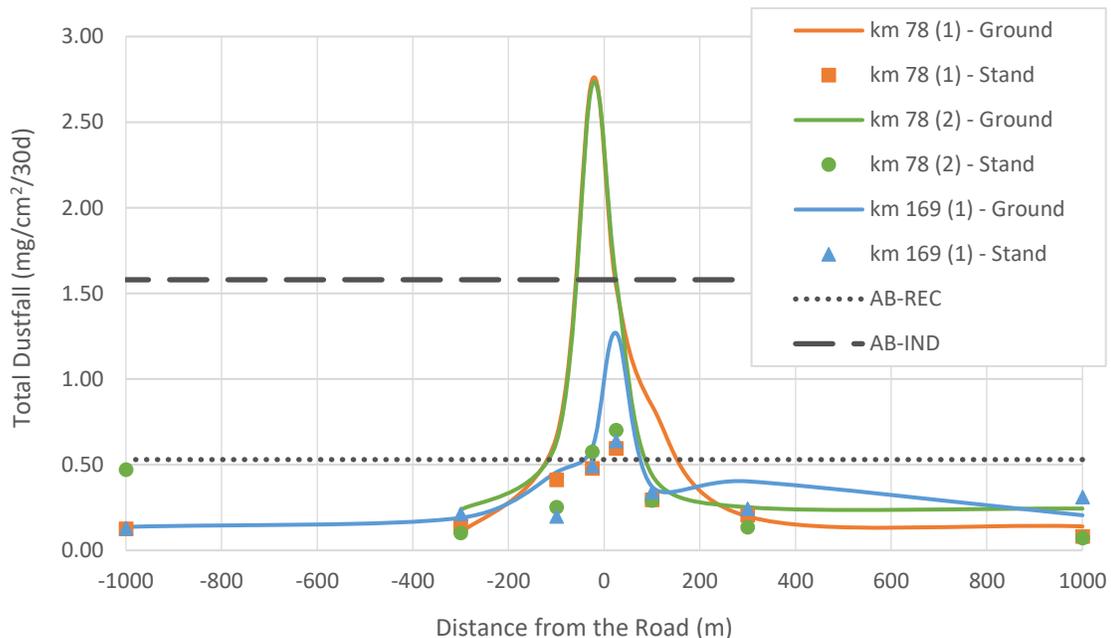


Figure 16. Total dustfall collected on stands (1.8 m height) and at ground level during monitoring Round 1 (July 2) and Round 2 (August 1) at km 78 and km 169. Ground-level samples at -1000 m for km 78 were missing or fallen over and are not shown.

4.3 NO₂

Monthly-average NO₂ trends in 2020 are provided in Figure 17. Samples are plotted by the collection start date. Concentrations of NO₂ vary between non-detect (<0.1) and 3.6 ppb. This maximum value is similar to those observed previously for the Meadowbank site (Section 5.3).

Annual arithmetic mean concentrations were calculated for each station from the monthly-average values. The annual mean concentrations of NO₂ were 0.30, 0.77, and 1.29 ppb for DF-1, DF-2, and DF-6a respectively. These are all well below the Government of Nunavut Ambient Air Quality Standard of 32 ppb for the annual average and the 2020 CAAQS for the annual average concentration of NO₂ (17.0 ppb). Results for DF-6a were also below the maximum FEIS Addendum model-predicted annual average of 8 – 16 ppb.

As discussed in Section 1.3.3, a continuous (active) NO₂ monitor will be installed at DF-7 in 2021.

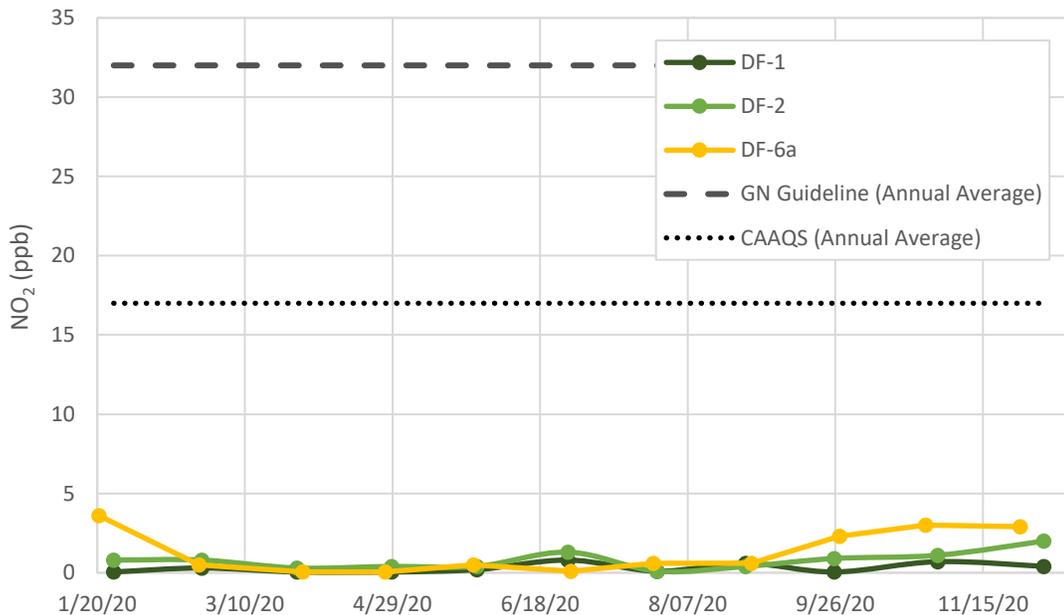


Figure 17. Monthly average concentration of NO₂ at DF-1, DF-2, and DF-6a. Points represent start date of sample collection. Dashed line indicates GN standard for the annual average and dotted lines represents the Canadian Ambient Air Quality Standard for the annual average.

4.4 QA/QC

QA/QC procedures in 2020 included the use of an accredited lab for sample preparation and analysis, sample collection by appropriate personnel (trained by a professional air quality specialist), use of travel blanks for suspended particulate and NO₂ samples, and use of field duplicates for road-side dustfall samples.

Maintenance and replacement schedules for the Partisol instruments are also discussed here, along with any data loss due to operational downtime or sampling errors.

4.4.1 Partisol Operations and Maintenance

Due to ongoing difficulties in maintaining the Partisol instruments, Agnico has committed to replacing one machine per year. In addition, repairs continue to be performed or parts replaced as necessary on all units. In 2020, the pump for the PM_{2.5}/PM₁₀ unit at DF-2 was replaced following sampling on March 12, and the repaired machine collected its first sample on March 24.

In addition to this replacement schedule, Agnico brought the Partisol supplier onsite in 2020 (December 7 – 10) to complete a full audit of the six instruments in use, and provide supplemental training to Environment Department personnel. Highlights of the training included theory of operation, menu structure, programming, maintenance, troubleshooting, installation interface software and data downloading. During this visit, the supplier provided recommendations for improved performance and reduction of downtime, but all six samplers were found to be in working condition and ready to continue sampling.

Despite historical difficulties in maintaining operational instruments, limited data loss occurred in 2020 for suspended particulate samples compared to previous years. For each sampler, Table 9 shows the monitoring period available for 2020 reporting along with available and actual number of 24-h samples collected. Sporadic data loss occurred throughout the year due to instrument error (e.g. significantly reduced air intake volume, possibly due to cold weather limitations), technician error (e.g. improper settings), or operational difficulties such as torn filters.

Table 9. Available and actual number of 24-h samples collected in 2020 for suspended particulates. Operation of the Partisol instruments at DF-6b was initiated on April 28.

Location	Monitoring Period	# Available Sampling Dates	# Sampled Dates		
			PM _{2.5}	PM ₁₀	TSP
DF-1	January 6 – December 25	60	50	52	56
DF-2	January 6 – December 31	61	56	55	56
DF-6b	April 28 – December 27	39	30	31	30

As part of QA procedures and data processing, Partisol operational data files are downloaded from each instrument and reviewed to ensure sampling occurred without error, and confirm intake volumes for use in volumetric calculations. As discussed in Section 2.1, concentrations of particulates need to be calculated using air volumes normalized to 25°C and 101.3kPA (standard temperature and pressure; STP). In 2020, depending on system settings, standardized volumes were either recorded by the Partisol unit (DF-6b), or were calculated from average temperature and pressure values recorded by the Partisol unit during the sampling period (DF-1, DF-2). Moving forward, all Partisol instruments will be set to record standardized volumes.

4.4.2 Travel Blanks and Field Duplicates

Travel blanks were used as part of four suspended particulate sample submissions. Detections occurred in three filters, with concentrations between 6 and 12 µg/filter (MDL = 3 µg/filter), which is

similar to previous years. Detections in travel blanks have been relatively common, with up to 8 contaminated blanks occurring yearly from 2014 - 2019, with concentrations up to 14 µg/filter. In the majority of cases, blanks marginally exceeded the detection limit (e.g. 4 or 5 µg/filter) and never exceeded 5x the MDL. Since there were few exceedances of regulatory guidelines, interpretation of field results was not modified based on this analysis.

Travel blanks were also analyzed for each NO₂ sampling event. Unopened canisters were shipped to the Meadowbank site by the laboratory, stored in the field office, and shipped back to the laboratory with each monthly NO₂ analysis. Detections occurred in all but one sample, from 0.1 to 1.2 ppb, which is similar to previous years. Since NO₂ concentrations are well below regulatory guidelines, interpretation of field results was not modified based on this analysis.

Field duplicate dustfall canisters are collected in the immediate vicinity of regular samples. The relative percent difference (RPD) values calculated for fixed dustfall for duplicate canisters are shown in Table 10. Relative to other media, RPDs in dustfall samples have tended to be very high, which is understandable given the potential for debris to be entrained by passing vehicles and land in adjacent dustfall canisters. This variability is taken into consideration when interpreting the results of the dustfall studies.

Table 10. RPD values for total dustfall in duplicate dustfall canisters on the east (E) or west (W) side of the Whale Tail Haul Road (WTHR) and All Weather Access Road (AWAR) in 2020.

Sampling Event	Location	Sample	Duplicate	RPD
		(mg/cm ² /30d)	(mg/cm ² /30d)	(%)
Event 1	WTHR km 134; 25 m E	0.790	0.988	20
	WTHR km 151; 25 m E	1.360	1.543	12
	WTHR km 169; 25 E	0.289	0.486	40
Event 2	WTHR km 169; 25 m E	0.167	0.220	32
	AWAR km 78; 25 m W	0.701	0.575	18
	AWAR km 18; 100 m E	0.252	0.283	12
	AWAR km 18; 300 m W	0.126	0.126	0
	AWAR km 78; 25 m E	0.575	0.535	7

4.5 EFFECTIVENESS OF MITIGATION

The effectiveness of mitigation measures discussed in Section 1.2 to reduce the generation of road dust is determined here through comparison of monitoring results with numeric thresholds identified in the Air Quality and Dustfall Monitoring Plan (Version 5; March, 2020). These thresholds and results for 2020 are summarized below with a commentary on effectiveness of the mitigation.

Threshold 1: *Dustfall exceeding 0.53 mg/cm²/30-day at 500 m from the AWAR or WTHR.*

- No exceedances of the threshold.
- In 2020, all measurements of total dustfall declined below the threshold of 0.53 mg/cm²/30-day (for the 500 m mark) within 300 m of the AWAR.

- In 2020, all measurements of total dustfall declined below the threshold of 0.53 mg/cm²/30-day (for the 500 m mark) within 100 m of the WTHR.

Threshold 2: Dustfall exceeding 1.58 mg/cm²/30-day at stations DF-1 to DF-6.

- The threshold was exceeded in one of 54 samples (January 20 sample at DF-2). However, the fixed dustfall result (the non-combustible fraction, more representative of mine-related dust sources) for this sample was well below the guideline and was just 3% of total, indicating that the majority of the elevated sample consisted of organic material such as plant or animal matter. All other samples at DF-2 were well below the threshold, with a maximum of 0.68 mg/cm²/30-day. This sample is therefore considered an outlier and no change in mitigation is planned based on this result.

Threshold 3: Active PM results exceeding FEIS predictions at DF-6.

- No PM results exceeded the relevant FEIS prediction for DF-6. See Section 4.1 for full details.

Based on these results, the mitigation measures implemented in 2020 are considered to have been effective in maintaining particulate emissions below the established threshold values.

SECTION 5 • HISTORICAL COMPARISON

5.1 TSP, PM₁₀, PM_{2.5}

In order to understand trends of suspended particulate concentrations at the Meadowbank site over time, measured values of TSP, PM₁₀, and PM_{2.5} at DF-1, DF-2, and DF-6b were plotted since monitoring began in 2012 (DF-1, DF-2) and 2020 (DF-6b) (Figures 18 - 20). These results indicate that concentrations of suspended particulates are relatively stable and have not been increasing over time.

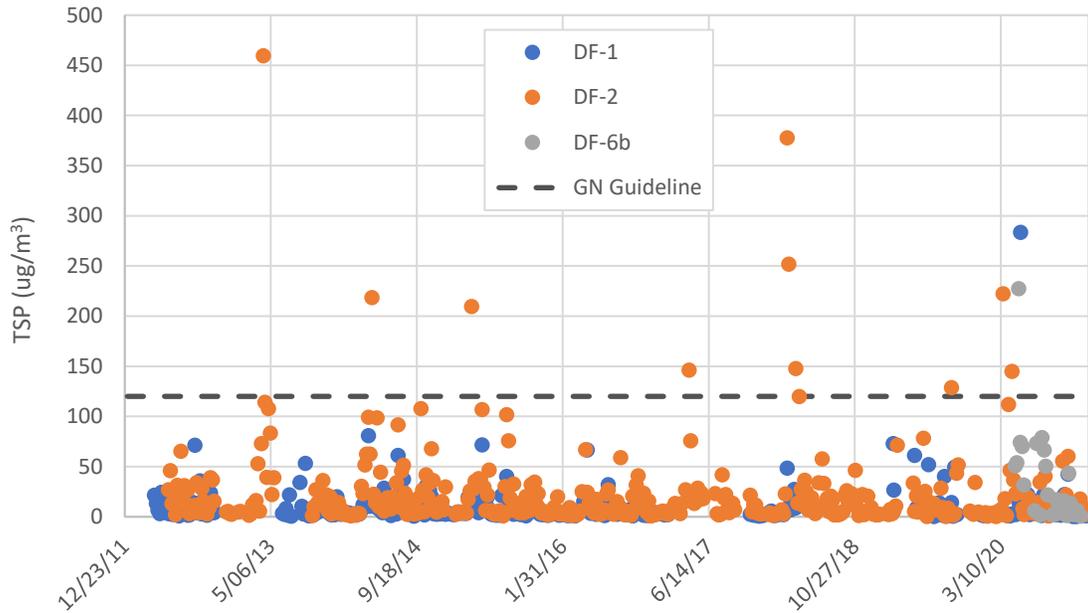


Figure 18. 24-h average concentrations of total suspended particulates (TSP) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality.

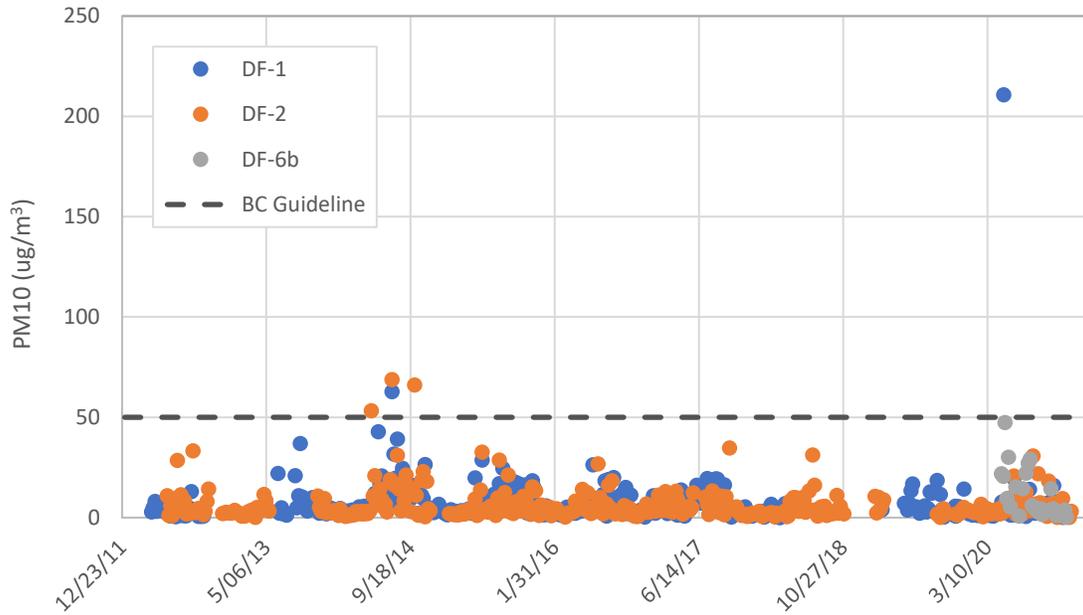


Figure 19. 24-h average concentration of airborne particulate matter less than 10 microns (PM₁₀) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the BC Air Quality Objective for this parameter.

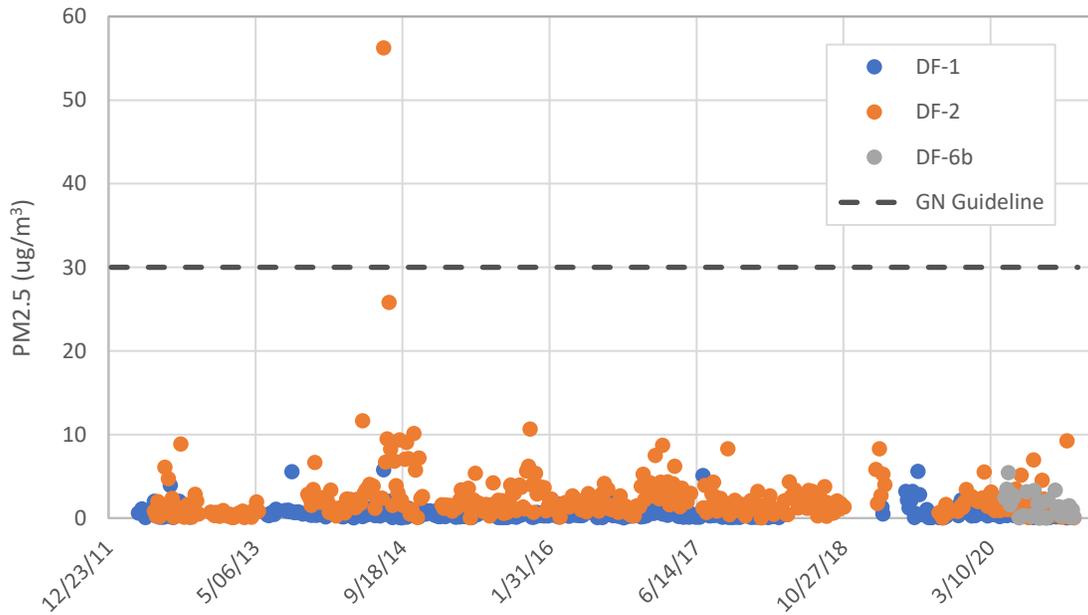


Figure 20. 24-h average concentration of airborne particulate matter less than 2.5 microns (PM_{2.5}) at Meadowbank stations DF-1, DF-2, and DF-6b. Dashed line indicates the 24-hr average GN guideline for ambient air quality.

5.2 DUSTFALL

5.2.1 Onsite Locations DF-1 – DF-6

In order to understand trends in generation of deposited particulate matter at the Meadowbank site over time, measured values of dustfall at DF-1, DF-2, DF-3, DF-4, and DF-6a were plotted since monitoring began in 2012 and 2020 (Figure 21). Although the highest measured rate of total dustfall for one timepoint was observed in 2020, this was an isolated incident and these results indicate that overall, dustfall has not been increasing over time.

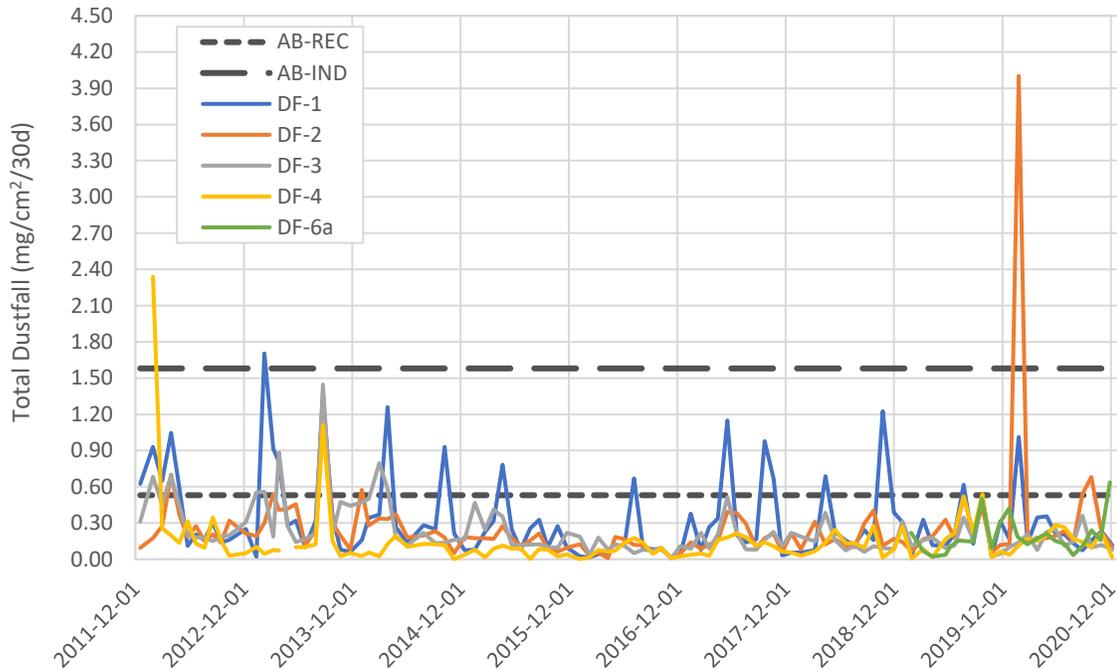


Figure 21. Total 30-day-normalized dustfall at DF-1 – DF-6 at the Meadowbank site. Points represent start date of sample collection. Plot omits the initial sample from DF-4 (6.26 mg/cm²/30d; December 17, 2011), which was considered to be an outlier.

5.2.2 Meadowbank AWAR Dustfall Transects

All results collected along the Meadowbank AWAR to date (since 2012) in locations without dust suppression are presented in Figure 22 in relation to Alberta guidelines for total dustfall. Results are compared here only for samples collected mainly in August, since historically sampling was only performed during this month, when the highest traffic rates and driest weather occurs. In 2020, sampling on stands at approximately 1.8 m height began, while previously sampling was conducted at ground level.

The range of background concentrations was determined from a total of 34 samples collected from four reference locations in 2014 – 2019, including: an established external reference site near Inuggugayualik Lake, baseline samples for the proposed Whale Tail Haul Road, and samples collected 1000 m upwind of the AWAR at km 18 and 78.

In 2020, results tended to be lower than those observed historically, especially in close proximity to the road. This is likely a result of the switch to sampling on stands, which reduces the influence of re-entrainment on dustfall results. Historically and regardless of sampling method, the current threshold for supplemental mitigation of dustfall ($0.53 \text{ mg/cm}^2/30\text{d}$ at 500 m) has never been exceeded, with all but one sample at 300 m and beyond falling below this threshold.

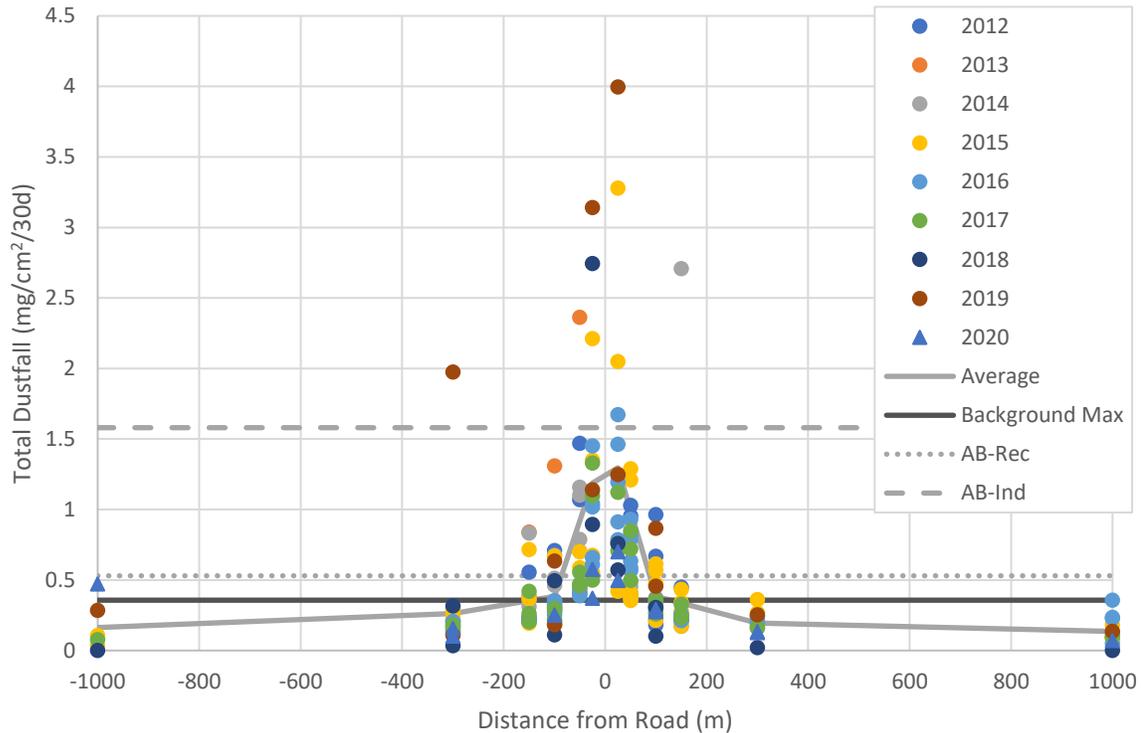


Figure 22. Total dustfall rates ($\text{mg/cm}^2/30\text{d}$) for all samples collected since 2012 (August sampling events) along the Meadowbank AWAR in areas without dust suppression. Negative distances represent the downwind (east) side of the road, and positive distances represent the upwind (west) side.

5.2.3 Whale Tail Haul Road Dustfall Transects

All results collected to date in August along the Whale Tail Haul Road (2018 - 2020) are shown in Figure 23. This month was chosen for comparative purposes to align with AWAR methods (see above) and because it generally represents the worst-case dustfall scenario (driest conditions and highest rates of traffic). In 2020, sampling on stands began for regular transects, while sampling in 2018 and 2019 was at ground level.

Overall rates of dustfall in 2020 were lower than those observed previously, which may be a result of both increased dust suppression efforts and the switch to samplers at the 1.8 m height, which reduces the potential for introduction of dust re-entrained from the ground.

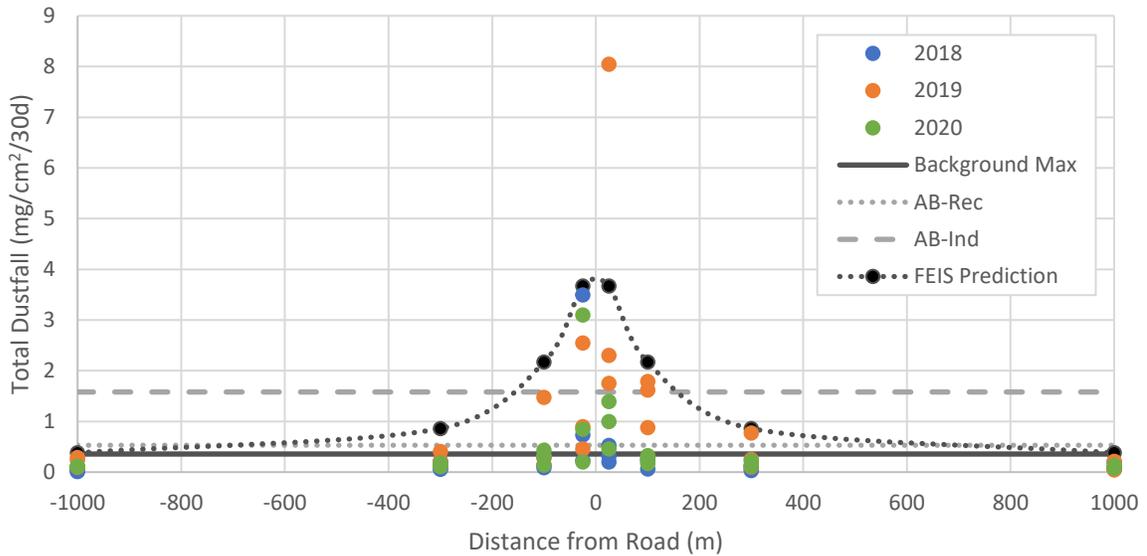


Figure 23. Total dustfall rates (mg/cm²/30d) for all samples collected in August along the Whale Tail Haul Road to date. 2018 and 2019 data was collected at ground level, while all August 2020 samples were collected on stands. Negative distances represent the east side of the road, and positive distances represent the west side. FEIS Prediction values are from the FEIS Addendum Appendix 4C, Table 4-C-24 (Agnico Eagle, 2018b).

5.3 NO₂

In order to understand trends in concentrations of gaseous pollutants at the Meadowbank site over time, measured values of NO₂ at DF-1, DF-2, and DF-6a were plotted since monitoring began in 2012 (DF-1, DF-2) and 2018 (DF-6a) (Figure 24). These results indicate that concentrations of NO₂ in the area have remained very low, and are not increasing over time.

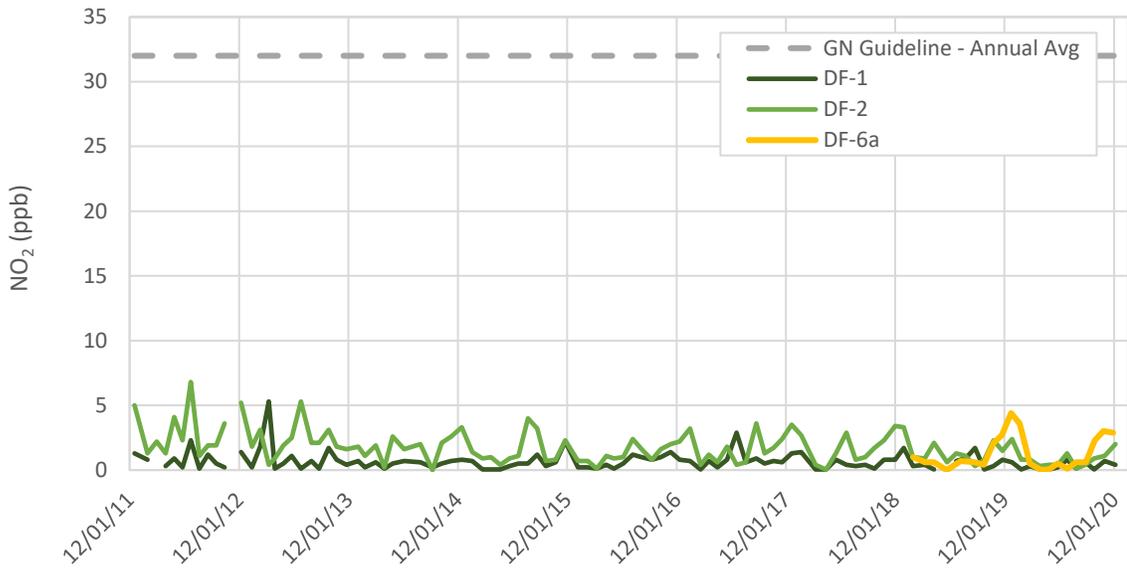


Figure 24. Monthly average concentration of NO₂ at DF-1, DF-2, and DF-6a. Points represent start date of sample collection. Dashed line indicates the GN standard for the annual average.

SECTION 6 • WEATHER DATA

Weather data for the dustfall and air quality monitoring periods was collected using the mine site's permanent weather station. Daily averages for wind speed, wind direction and temperature were available from this station.

Daily averages for wind speed, wind direction and temperature are provided in Appendix A.

SECTION 7 • GREENHOUSE GAS EMISSIONS

Agnico is required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions based on annual fuel consumption, composition and the US EPA's AP-42 emission factors.

Estimated greenhouse gas emissions for the Meadowbank site are reported to Environment Canada's Greenhouse Gas Emissions Reporting Program by June 1, annually, for the preceding calendar year. Results calculated to date are shown in Table 11.

Table 11. Estimated greenhouse gas emissions for the Meadowbank site as reported to Environment Canada's Greenhouse Gas Emissions Reporting Program. 2018+ includes Meadowbank and Whale Tail sites. *Re-calculated in 2020.

Reporting Year	Calculated CO ₂ Emissions (tonnes CO ₂ equivalent)
2012	202,201
2013	195,686
2014	179,889
2015	187,280
2016	184,223
2017	194,440
2018	186,122
2019	195,564*
2020	225,435

SECTION 8 • INCINERATOR STACK TESTING

Incinerator stack testing is conducted under Agnico Eagle’s Incinerator Waste Management Plan (AEM, 2018), and results are summarized here. As determined in consultation with Environment and Climate Change Canada, incinerator stack testing is undertaken every two years, and annually for five years following an exceedance of ECCC/GN criteria. In 2014, stack testing was conducted from July 11th to July 13th by Exova Canada Inc. Results indicated that the average (of 3 tests) measured mercury level (64.09 µg / Rm³ @ 11 % v/v O₂) exceeded the GN standard (20 µg / Rm³ @ 11 % v/v O₂). Laboratory re-analysis confirmed these results. An investigation with Meadowbank’s Site Services Department was performed to determine the potential sources. Although Meadowbank has an alkaline battery recycling program, the investigation revealed that there could still be a significant volume of batteries disposed of with regular solid waste destined for the onsite incinerator. In addition, the incinerator may have been overloaded on the day of testing which would result in some incomplete combustion but this would not be considered as a major contributing factor. The dioxin and furans results in 2014 (53.6 pg TEQ / Rm³ @ 11 % v/v O₂) were well below the GN standard (80 pg TEQ / Rm³ @ 11 % v/v O₂).

Following these tests, Agnico Eagle implemented a comprehensive site wide information campaign to reinforce the requirements of the recycling program. This included regular meetings with individual departments as well as placing information on the Agnico Eagle intranet site.

Results of annual stack testing are provided in Table 12. Since 2015, concentrations of mercury have been below the GN standard of 20 µg/ Rm³ @ 11 % v/v O₂, suggesting that efforts to reduce improper disposal of batteries were effective. Concentrations of dioxins and furans have also continued to meet the GN standard (80 pg TEQ / Rm³ @ 11 % v/v O₂).

In accordance with the Incinerator Waste Management Plan, stack testing was not performed in 2020 following five years of annual tests below the regulatory limits. Agnico Eagle sent a letter to ECCC on June 30, 2020 to confirm the reduction in stack testing frequency to biennial. ECCC informed Agnico that they do not regulate air quality emissions and the information was provided to the NIRB. Agnico did not receive the NIRB Board Recommendation to continue annual testing until December 3, 2020 and therefore did not have enough time to schedule and complete the stack testing in 2020.

Agnico Eagle acknowledges the NIRB recommendation (as indicated through Agnico Eagle’s response to the NIRB’s 2019-2020 Annual Monitoring Report for the Meadowbank Gold Project and the Whale Tail Pit Project; February 3, 2021), and will resume annual testing in 2021.

Table 12. Historical stack testing results for mercury and dioxins and furans at the Meadowbank site.

***The GN standard is for the average of three tests, as reported here.**

Year	Mercury (µg/Rm ³ @ 11% v/v O ₂)		Dioxins and Furans (pg/Rm ³ @ 11% v/v O ₂)	
	GN Standard	Stack Testing Results (Average*)	GN Standard	Stack Testing Results (Average*)
2014	20	64.09	80	53.6
2015		<0.22		21.0
2016		<0.46		33
2017		3.8		22
2018		<0.19		10
2019		0.453		27

SECTION 9 • SUMMARY

9.1 SUSPENDED PARTICULATES (TSP, PM₁₀, PM_{2.5})

For TSP, four of 142 samples across all three stations exceeded the GN 24-h guideline of 120 µg/m³ in 2020. For the Whale Tail site location (DF-6b), FEIS Addendum predictions indicated that maximum 24-h TSP concentrations would exceed the GN 24-h guideline, which occurred on just one occasion in 2020. The GN guideline for the annual average was not exceeded for any station. The FEIS Addendum prediction for the maximum annual average at DF-6b was also not exceeded.

One of 138 samples of PM₁₀ across all three stations exceeded the BC guideline for the 24-h average. FEIS Addendum predictions for the Whale Tail site indicated that maximum PM₁₀ concentrations at DF-6b would exceed the BC 24-h guideline of 50 µg/m³ at DF-6b, which did not occur in 2020.

All results for PM_{2.5} were below the relevant air quality criteria for 24-h and annual averaging times (GN guideline, CAAQS, FEIS Addendum prediction for DF-6b).

9.2 DUSTFALL

One dustfall sample of 54 collected at onsite locations DF-1 – DF-6 exceeded the relevant Alberta guideline for industrial/commercial areas. However this sample is considered an outlier because the result for fixed dustfall was well below the guideline, and the majority of results were below the Alberta guideline for recreational/residential areas.

For samples collected along the AWAR and WTHR transects, no exceedances of the established dust management threshold occurred (0.53 mg/cm²/30d at 500 m). This threshold is also the general FEIS prediction for the WTHR. For nine of ten sampled transects, the threshold was met within 100 m.

9.3 NO₂

Annual average NO₂ did not exceed the GN guideline of 32 ppb nor the CAAQS of 17 ppb for any station at the Meadowbank or Whale Tail sites. In addition, annual average NO₂ at DF-6a on the Whale Tail site did not exceed the maximum FEIS Addendum prediction for that location.

9.4 GHG EMISSIONS

Estimated greenhouse gas emissions for the Meadowbank Complex in 2020 for reporting to Environment Canada's Greenhouse Gas Emissions Reporting Program were 225,435 tonnes CO₂ equivalent.

9.5 INCINERATOR EMISSIONS

Incinerator stack testing was not performed in 2020. This program will resume in 2021.

9.6 CONCLUSION

In 2020, few exceedances of short-term air quality standards occurred and no exceedances of annual averages occurred. Furthermore, no exceedances of FEIS Addendum predictions occurred for the

applicable Whale Tail monitoring stations. Overall, there are no apparent trends towards increasing or unpredicted air quality concerns at the Meadowbank site in 2020.

Numerical thresholds for dust management were not exceeded along the AWAR or WTHR, and were only exceeded in a single dustfall sample for onsite locations. Based on these results, dust mitigation is considered to have been effective at maintaining levels of particulates below the established thresholds in 2020.

SECTION 10 • ACTIONS

Actions that were identified in the 2019 Air Quality and Dust Monitoring Report for completion in 2020 and Agnico's response to each is indicated below:

- Moving forward, dustfall sampling along the AWAR will occur at two reference locations (km 18 and 78). The frequency of sampling (2 x 1 month periods during the summer) and transect stations (25, 100, 300, 1000 m) will not change. Since three years of sampling in areas with dust suppression has confirmed efficacy of the product, the sampling focus will shift back to tracking dustfall in areas without dust suppression.
 - Complete
- Dustfall rates will be analyzed for a reference transect (area without dust suppression) along the Whale Tail Haul Road, if possible.
 - Dust suppressant application and road watering were conducted along the full length of the WHTR in 2020 so sampling of a reference transect was not possible or required.
- All dustfall monitoring will be conducted at approx. 2-3 m height, in accordance with ASTM methods.
 - Complete
- Ensure and continue training of all the Environmental staff in suspended particulate monitoring equipment maintenance and troubleshooting to reduce downtime.
 - Complete. The supplier was brought onsite and a full audit completed for each Partisol machine, along with re-training for Environment Department technicians.
- Assess potential alternative technologies in suspended particulate monitoring (possible pilot project with alternate monitoring equipment).
 - No pilot project was initiated at Meadowbank in 2020 but Agnico continues to investigate possible alternatives for future use as needed in collaboration with the Meliadine Environment Department.

SECTION 11 • REFERENCES

Cumberland Resources Ltd. (Cumberland) 2005. Meadowbank Gold Project Air Quality Impact Assessment Report.

Agnico Eagle Mines Ltd. (Agnico Eagle), 2018a. Meadowbank Gold Project Incinerator Waste Management Plan – Version 6. July, 2018.

Agnico Eagle Mines Ltd. (Agnico Eagle) 2018b. FEIS Addendum for the Whale Tail Pit – Expansion Project – Volume 4: Atmospheric Environment. December, 2018.

Appendix A

Weather Data

Table A- 1. Daily temperature, wind speed and wind direction in 2020 at the Meadowbank site.

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
1/01/20	-20.5	-28.4	-15.1	1.6	8.6
1/02/20	-16.1	-17.4	-15.1	-8.2	6.7
1/03/20	-17.2	-19.7	-16.2	0.9	3.7
1/04/20	-27.2	-35.2	-18.9	-20.6	5.5
1/05/20	-35.8	-37.9	-31.6	-32.5	1.0
1/06/20	-28.8	-34.7	-26.4	0.8	1.1
1/07/20	-31.5	-33.6	-26.4	-29.3	5.0
1/08/20	-28.6	-30.6	-26.5	-26.3	5.5
1/09/20	-30.2	-32.2	-26.3	-30.6	4.0
1/10/20	-34.5	-37.0	-31.3	-38.7	3.0
1/11/20	-36.6	-37.6	-35.6	-30.3	2.7
1/13/20	-32.9	-34.7	-28.2	-21.7	6.0
1/14/20	-33.5	-36.0	-28.5	-36.1	4.9
1/15/20	-34.3	-37.0	-28.0	-31.5	5.0
1/16/20	-26.8	-29.1	-25.2	-24.0	6.2
1/17/20	-19.4	-27.6	-17.3	-4.5	7.1
1/18/20	-25.1	-31.2	-18.7	-28.5	6.0
1/19/20	-21.3	-30.9	-15.7	-5.3	11.4
1/20/20	-17.9	-23.0	-15.7	-12.3	10.5
1/21/20	-24.3	-28.3	-21.6	-16.7	1.2
1/22/20	-30.1	-35.8	-26.4	-17.5	1.6
1/23/20	-37.2	-38.4	-35.8	-17.2	3.7
1/24/20	-36.8	-38.6	-35.2	-14.9	2.3
1/25/20	-32.8	-36.7	-30.2	-8.2	1.8
1/26/20	-30.2	-31.8	-28.0	-8.9	1.1
1/27/20	-21.7	-29.3	-17.0	1.5	2.9
1/28/20	-27.0	-30.8	-17.1	-9.5	4.5
1/29/20	-21.5	-29.5	-12.5	2.3	5.6
1/30/20	-22.4	-29.4	-15.3	-20.2	5.8
1/31/20	-19.2	-28.3	-9.4	5.0	8.3
2/01/20	-22.4	-25.3	-14.3	-33.1	8.5
2/02/20	-25.6	-27.0	-24.1	-23.0	6.3
2/03/20	-27.8	-31.8	-24.1	-10.5	5.9
2/04/20	-33.5	-35.2	-31.7	-40.2	6.3
2/05/20	-33.4	-34.8	-31.8	-24.7	7.8
2/06/20	-35.2	-37.3	-32.4	-20.7	8.5
2/07/20	-32.9	-37.2	-26.7	-16.9	4.4

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
2/08/20	-30.5	-36.6	-22.7	-25.7	7.6
2/09/20	-34.3	-37.4	-31.0	-26.6	4.5
2/10/20	-33.0	-34.3	-31.3	-19.8	5.0
2/11/20	-37.9	-43.1	-33.7	-36.5	5.1
2/12/20	-37.7	-42.9	-32.8	-13.6	9.5
2/13/20	-33.6	-35.9	-32.5	-16.7	9.2
2/14/20	-35.7	-37.4	-34.0	-32.9	5.0
2/15/20	-37.7	-39.8	-36.1	-28.0	5.1
2/16/20	-35.6	-40.0	-30.8	-32.0	7.1
2/17/20	-30.0	-33.3	-27.8	-30.8	6.7
2/18/20	-31.4	-34.5	-28.0	-28.6	5.9
2/19/20	-31.0	-34.9	-27.9	-20.4	6.2
2/20/20	-31.5	-36.0	-28.4	-50.6	1.7
2/21/20	-29.5	-35.9	-23.8	1.6	7.6
2/22/20	-30.2	-36.2	-24.3	-49.6	5.3
2/23/20	-34.5	-36.2	-32.9	-39.4	3.6
2/24/20	-33.6	-36.4	-30.5	-38.7	4.9
2/25/20	-30.7	-33.3	-27.9	-46.6	4.3
2/26/20	-31.5	-33.6	-25.8	-45.2	2.0
2/27/20	-30.0	-33.9	-26.5	-36.2	3.0
2/28/20	-28.0	-33.5	-25.0	-29.6	1.8
2/29/20	-30.0	-34.3	-24.1	-25.4	1.6
3/01/20	-20.0	-24.4	-17.4	6.5	6.5
3/02/20	-24.8	-35.4	-15.3	-19.1	4.9
3/03/20	-35.1	-38.3	-32.7	-26.1	3.8
3/04/20	-33.4	-36.4	-30.2	-40.7	3.9
3/05/20	-32.8	-37.8	-28.9	-24.4	3.3
3/06/20	-27.4	-32.9	-22.6	-13.4	6.3
3/07/20	-36.7	-40.7	-32.8	-49.1	5.0
3/08/20	-38.6	-40.7	-35.8	-20.2	9.3
3/10/20	-27.6	-35.1	-23.0	0.8	8.6
3/11/20	-24.0	-27.3	-21.3	-38.9	4.5
3/12/20	-23.2	-25.9	-20.7	-9.2	4.3
3/13/20	-29.4	-34.9	-23.4	-36.3	4.8
3/14/20	-34.1	-37.5	-30.8	-36.0	5.9
3/15/20	-27.6	-35.3	-17.2	-8.8	7.1
3/16/20	-13.8	-17.4	-10.1	-3.5	7.8
3/17/20	-22.1	-29.1	-16.6	-9.4	10.8

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
3/18/20	-30.3	-32.5	-27.6	-30.1	8.7
3/19/20	-30.3	-33.3	-27.0	-33.8	6.2
3/20/20	-28.5	-32.4	-23.6	-25.1	4.1
3/21/20	-27.2	-31.2	-23.8	-33.8	2.9
3/22/20	-15.7	-26.0	-7.8	14.9	6.5
3/23/20	-11.7	-13.5	-9.0	4.5	3.9
3/24/20	-22.5	-28.5	-13.4	-23.4	8.7
3/25/20	-23.4	-27.9	-20.1	-23.4	6.5
3/26/20	-22.5	-28.5	-18.2	-40.4	3.5
3/27/20	-21.4	-28.5	-11.8	0.8	6.7
3/28/20	-30.5	-34.1	-25.1	-38.5	6.0
3/29/20	-32.0	-36.8	-26.8	-36.0	2.1
3/30/20	-31.6	-37.0	-27.1	-36.1	2.6
3/31/20	-30.3	-34.9	-24.8	-38.1	3.1
4/01/20	-30.5	-36.6	-25.8	-29.7	1.1
4/02/20	-27.4	-33.7	-21.7	0.2	6.6
4/03/20	-17.9	-22.0	-14.9	16.8	10.2
4/04/20	-16.7	-19.4	-13.2	-3.7	9.5
4/05/20	-15.8	-19.1	-12.6	-17.0	7.5
4/06/20	-14.6	-20.1	-9.4	-4.3	4.1
4/07/20	-17.4	-22.5	-13.1	1.4	2.5
4/08/20	-17.4	-24.0	-12.2	7.3	2.4
4/09/20	-15.6	-21.6	-9.4	15.6	2.5
4/10/20	-18.5	-25.3	-14.4	24.4	2.3
4/11/20	-16.3	-21.0	-12.8	21.9	1.0
4/12/20	-19.1	-22.5	-14.4	23.2	0.0
4/13/20	-20.4	-23.3	-15.7	37.9	9.1
4/14/20	-21.6	-24.7	-17.8	4.9	9.4
4/15/20	-18.8	-25.1	-13.7	26.8	5.8
4/16/20	-15.0	-20.2	-10.0	18.8	7.6
4/17/20	-21.2	-24.7	-17.2	6.0	7.9
4/18/20	-24.8	-28.5	-22.0	15.9	9.1
4/19/20	-22.3	-25.2	-18.6	25.4	9.9
4/20/20	-22.6	-27.4	-17.7	8.5	2.9
4/21/20	-22.2	-27.0	-17.6	-1.8	1.5
4/22/20	-22.3	-28.0	-17.4	10.6	2.1
4/23/20	-16.4	-21.4	-12.5	22.3	8.1
4/24/20	-12.8	-14.5	-10.4	4.5	3.7

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
4/25/20	-16.9	-21.5	-13.0	-1.5	2.1
4/26/20	-18.4	-26.0	-13.3	-1.2	0.2
4/27/20	-19.4	-24.1	-16.3	27.2	0.0
4/28/20	-22.7	-26.0	-17.5	15.8	0.0
4/29/20	-17.1	-25.2	-11.2	14.8	3.1
4/30/20	-6.6	-12.1	-2.0	29.0	0.1
5/01/20	-9.0	-17.8	-5.6	51.4	1.2
5/02/20	-16.2	-19.8	-12.2	50.9	0.1
5/03/20	-14.8	-22.2	-9.6	53.7	0.0
5/04/20	-7.6	-11.8	-2.7	40.0	0.0
5/05/20	-7.3	-12.5	-3.5	36.2	0.0
5/06/20	-12.7	-15.5	-8.5	46.3	0.0
5/07/20	-14.0	-17.5	-10.6	53.7	0.0
5/08/20	-13.8	-20.7	-8.9	59.2	0.0
5/09/20	-10.9	-16.3	-5.2	53.1	0.0
5/10/20	-15.3	-18.9	-11.7	87.2	0.0
5/11/20	-13.3	-18.2	-8.1	91.4	0.0
5/12/20	-10.7	-17.2	-5.6	102.8	0.0
5/13/20	-11.6	-14.8	-8.3	115.6	0.0
5/14/20	-12.0	-16.2	-9.3	94.7	0.0
5/15/20	-13.3	-18.7	-8.7	104.1	0.0
5/16/20	-10.1	-16.6	-4.2	20.8	0.0
5/17/20	-5.8	-12.2	-2.4	47.0	0.0
5/18/20	-6.3	-11.0	-0.8	-18.7	0.0
5/20/20	-6.5	-8.6	-5.2	29.2	0.0
5/21/20	-6.2	-8.7	-2.7	23.7	0.0
5/22/20	-5.8	-11.4	-3.7	41.0	0.0
5/23/20	-3.5	-4.6	-1.7	37.9	0.0
5/24/20	-4.0	-5.2	-2.7	36.5	0.0
5/25/20	-2.7	-4.2	-1.5	62.9	0.0
5/26/20	-7.0	-9.7	-4.0	76.9	0.0
5/27/20	-9.8	-15.1	-6.2	85.7	0.0
5/28/20	-7.9	-10.2	-4.8	70.8	0.0
5/29/20	-4.5	-7.8	-1.9	84.2	0.0
5/30/20	-2.9	-5.3	-0.2	80.9	0.0
5/31/20	-3.4	-7.0	-1.2	92.3	0.0
6/01/20	-3.1	-7.6	-0.3	123.6	0.0
6/02/20	-2.5	-3.9	-0.8	94.2	0.0

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
6/03/20	-3.5	-6.0	-1.0	106.3	0.0
6/04/20	-1.2	-2.7	0.6	81.1	5.1
6/05/20	-0.6	-2.1	1.1	139.8	3.5
6/06/20	-0.4	-2.2	1.4	148.6	0.0
6/07/20	0.2	-2.4	2.3	155.8	0.0
6/08/20	-1.7	-3.8	0.3	128.4	0.0
6/09/20	-1.2	-2.7	1.0	132.8	0.0
6/10/20	-1.4	-2.7	0.6	159.7	0.0
6/11/20	-0.6	-3.9	2.8	176.7	0.0
6/12/20	2.2	-2.7	6.4	159.5	0.0
6/13/20	3.3	-0.5	6.6	156.4	0.0
6/14/20	3.1	1.1	4.6	95.8	0.0
6/15/20	3.6	-0.2	8.8	129.6	0.0
6/16/20	2.2	-0.5	4.6	146.2	0.0
6/17/20	1.1	-1.5	4.7	164.7	0.0
6/18/20	4.3	-1.8	10.3	164.4	0.0
6/19/20	7.3	0.6	13.5	118.3	0.0
6/20/20	11.3	3.5	18.0	139.8	0.0
6/21/20	14.4	6.4	20.9	144.9	0.0
6/22/20	13.9	8.1	20.7	145.4	0.0
6/23/20	15.8	7.1	25.1	98.0	0.0
6/24/20	16.0	9.9	20.9	146.9	0.0
6/25/20	14.0	8.6	20.3	98.6	0.0
6/26/20	15.8	7.7	24.5	107.2	0.8
6/27/20	7.9	5.7	13.6	39.7	6.5
6/28/20	11.0	5.1	17.9	137.6	2.7
6/29/20	13.8	6.5	20.2	149.6	2.2
6/30/20	16.6	9.5	23.1	130.4	1.3
7/01/20	16.6	6.1	22.6	148.6	1.7
7/02/20	19.2	10.4	26.4	139.7	3.9
7/03/20	18.3	12.8	23.6	134.9	3.8
7/04/20	15.8	10.5	21.5	122.7	3.5
7/05/20	12.5	7.4	16.6	99.2	4.6
7/06/20	17.7	10.0	25.1	130.9	2.4
7/07/20	17.2	13.5	21.3	61.0	3.5
7/08/20	16.6	13.5	20.6	53.2	3.1
7/09/20	13.3	11.0	16.2	18.2	2.9
7/10/20	11.7	8.1	15.5	91.1	5.3

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
7/11/20	12.3	7.6	15.6	150.4	3.7
7/12/20	14.3	7.5	19.2	92.8	3.3
7/13/20	16.4	10.2	22.1	142.5	5.7
7/14/20	15.4	10.4	20.5	134.4	7.4
7/15/20	11.4	7.0	15.6	47.8	7.1
7/16/20	14.3	10.1	20.3	68.4	5.4
7/17/20	13.5	10.6	16.4	62.1	7.3
7/18/20	12.7	8.6	17.2	152.0	8.2
7/19/20	12.5	7.4	17.2	135.0	0.0
7/20/20	13.8	7.0	19.6	129.4	0.0
7/21/20	16.8	10.2	23.7	114.9	0.0
7/22/20	15.4	11.0	20.1	127.1	0.0
7/23/20	16.9	11.7	21.8	111.2	0.0
7/24/20	18.9	13.6	23.6	98.7	0.2
7/25/20	18.0	12.9	23.1	89.5	0.1
7/26/20	12.0	10.4	13.6	33.2	4.8
7/27/20	12.1	10.8	13.7	9.9	3.2
7/28/20	15.1	11.6	19.6	111.5	0.9
7/29/20	16.8	13.3	21.0	91.0	0.0
7/30/20	16.4	13.2	21.3	67.3	2.0
7/31/20	12.8	10.5	16.2	53.7	1.4
8/01/20	11.0	8.0	15.8	84.5	4.3
8/02/20	13.9	7.5	21.1	93.3	1.2
8/03/20	17.8	11.7	25.0	77.7	2.3
8/04/20	20.1	13.9	28.7	83.1	2.8
8/05/20	20.9	15.5	29.2	78.1	2.2
8/06/20	20.1	14.9	25.6	83.1	0.0
8/07/20	17.0	13.5	21.1	77.6	0.0
8/08/20	14.7	13.5	16.3	35.1	0.0
8/10/20	17.2	12.3	23.4	66.8	0.0
8/11/20	17.5	13.1	22.3	65.2	0.0
8/12/20	15.4	11.6	19.5	74.0	0.0
8/13/20	13.5	10.1	16.8	55.3	0.0
8/14/20	14.5	10.8	17.9	26.8	0.0
8/15/20	12.8	11.6	14.6	37.9	5.7
8/16/20	15.8	11.2	19.1	67.2	0.0
8/17/20	9.2	7.4	11.3	30.5	4.8
8/18/20	7.7	4.5	11.5	59.7	6.8

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
8/19/20	9.6	7.4	11.6	6.8	0.0
8/20/20	8.9	5.5	13.2	31.8	0.0
8/21/20	9.2	6.8	11.9	83.7	3.9
8/22/20	5.8	4.1	7.4	40.0	0.0
8/23/20	6.9	3.9	11.1	50.4	0.0
8/24/20	10.0	6.6	14.7	39.7	0.0
8/25/20	10.3	5.7	15.1	52.4	0.0
8/26/20	12.0	7.0	17.0	49.5	0.0
8/27/20	11.3	7.8	15.0	37.0	0.0
8/28/20	9.4	7.6	11.0	18.6	0.0
8/29/20	8.1	4.7	9.4	16.4	0.0
8/30/20	4.9	1.5	8.2	60.4	0.0
8/31/20	7.5	5.9	8.5	-12.4	0.0
9/01/20	8.6	7.0	10.1	-14.8	6.6
9/02/20	9.2	8.6	10.0	10.0	7.2
9/03/20	9.2	8.1	11.0	2.1	4.9
9/04/20	7.2	5.9	8.5	20.0	7.2
9/05/20	6.9	5.7	8.2	32.2	4.2
9/06/20	5.1	1.9	6.6	46.0	0.0
9/07/20	1.8	-0.3	3.9	38.5	0.0
9/08/20	1.5	-0.2	4.0	42.2	0.0
9/09/20	3.3	0.9	5.7	33.9	0.0
9/10/20	5.3	4.3	6.4	-1.9	0.0
9/11/20	3.5	0.2	5.1	13.8	0.0
9/12/20	3.0	0.3	5.4	26.5	0.0
9/13/20	4.7	3.2	6.1	-5.6	0.0
9/14/20	1.1	-1.3	4.3	14.1	0.0
9/15/20	0.8	-1.6	3.0	19.9	0.0
9/16/20	-1.2	-3.5	2.3	18.0	0.0
9/17/20	-1.2	-3.5	1.8	32.4	8.2
9/18/20	-0.2	-1.5	1.6	24.7	6.5
9/19/20	4.8	2.8	7.8	-43.2	0.0
9/20/20	4.7	1.1	7.7	13.7	0.0
9/21/20	4.5	2.6	6.1	13.3	0.0
9/22/20	2.3	0.9	3.0	20.3	0.0
9/23/20	2.7	1.8	3.6	15.3	0.0
9/24/20	3.4	2.0	5.7	11.7	0.0
9/25/20	4.8	2.2	9.3	10.6	0.0

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
9/26/20	2.8	0.9	4.2	12.0	3.2
9/27/20	2.9	1.2	5.3	7.0	5.6
9/28/20	2.2	-1.1	6.1	-0.4	1.7
9/29/20	1.7	-0.7	4.5	-3.6	2.0
9/30/20	1.1	-0.3	2.2	14.1	6.9
10/01/20	0.0	-2.1	2.8	-2.5	4.1
10/02/20	-0.5	-2.7	1.4	13.5	4.3
10/03/20	0.7	-0.5	1.8	2.8	5.9
10/04/20	-0.3	-1.5	1.0	6.7	5.8
10/05/20	-2.0	-3.2	-0.4	-0.5	3.3
10/06/20	-2.7	-4.4	-0.8	0.8	6.1
10/07/20	-2.2	-3.2	-1.5	2.1	7.7
10/08/20	-2.6	-3.1	-1.7	5.5	14.5
10/09/20	-1.8	-3.2	-0.3	2.9	8.9
10/10/20	-2.3	-3.3	-1.0	-0.4	4.6
10/11/20	-3.8	-4.7	-2.1	4.4	3.0
10/12/20	-2.8	-3.9	-2.0	5.3	7.1
10/13/20	-1.3	-2.7	1.0	-8.6	12.5
10/14/20	0.9	-0.4	2.0	-2.2	7.2
10/15/20	0.6	-0.2	1.0	4.3	8.0
10/16/20	-0.7	-2.1	0.4	-12.4	6.6
10/17/20	-3.2	-7.1	-1.3	-20.0	4.5
10/18/20	-4.8	-8.6	-2.7	-16.2	2.3
10/19/20	-3.7	-5.4	-2.7	-13.1	2.6
10/20/20	-5.5	-8.1	-3.5	-15.3	6.3
10/21/20	-8.6	-12.5	-5.4	-14.7	8.7
10/22/20	-4.0	-5.6	-2.9	-7.0	5.7
10/23/20	-5.7	-8.1	-4.0	-12.9	0.0
10/24/20	-6.5	-7.8	-5.8	-7.2	0.0
10/25/20	-8.6	-12.2	-5.8	-17.2	0.0
10/26/20	-8.9	-14.5	-6.6	-12.7	0.0
10/27/20	-8.0	-12.0	-5.2	-11.5	0.0
10/28/20	-11.0	-13.1	-9.5	-15.6	0.0
10/29/20	-11.9	-14.5	-10.4	-15.4	0.0
10/30/20	-13.0	-14.3	-11.5	-22.7	0.0
10/31/20	-14.9	-17.4	-12.8	-36.3	0.0
11/01/20	-16.4	-18.7	-14.7	-29.4	0.0
11/02/20	-17.1	-19.3	-15.5	-18.3	0.0

2020 Air Quality and Dustfall Monitoring Report
Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
11/03/20	-19.7	-23.8	-17.0	-52.1	0.0
11/04/20	-20.4	-25.2	-15.9	-23.0	0.0
11/05/20	-15.3	-21.2	-11.8	-33.3	0.0
11/06/20	-18.5	-20.8	-16.6	-34.1	0.0
11/07/20	-19.3	-22.6	-14.9	-20.0	0.0
11/08/20	-17.4	-20.1	-14.7	-35.9	0.0
11/09/20	-15.7	-20.8	-8.9	-8.6	0.0
11/10/20	-9.7	-11.8	-7.5	-3.2	0.0
11/11/20	-17.5	-23.2	-10.0	-20.0	0.0
11/12/20	-18.8	-23.5	-15.3	-30.9	0.0
11/13/20	-20.2	-21.3	-17.9	-46.1	0.0
11/14/20	-18.1	-24.0	-13.5	-17.5	0.0
11/15/20	-23.5	-25.6	-20.7	-40.2	0.0
11/16/20	-24.4	-27.3	-17.8	-31.6	0.0
11/17/20	-13.7	-17.8	-12.4	-11.0	0.0
11/18/20	-17.7	-22.8	-12.6	-34.6	0.0
11/19/20	-17.4	-22.9	-13.2	-14.5	0.0
11/20/20	-21.9	-25.2	-18.4	-32.1	0.0
11/21/20	-24.0	-26.6	-20.2	-30.0	0.0
11/22/20	-20.4	-23.0	-18.2	-18.0	0.0
11/23/20	-21.8	-26.0	-17.6	-23.6	0.0
11/24/20	-20.7	-22.5	-18.1	-15.7	0.0
11/25/20	-22.7	-26.3	-20.1	-10.1	0.0
11/26/20	-25.4	-27.0	-22.6	-6.3	0.0
11/27/20	-23.4	-26.8	-21.7	-7.5	0.0
11/28/20	-27.9	-29.5	-25.5	-12.2	0.0
11/29/20	-27.2	-28.2	-26.0	-16.2	0.0
11/30/20	-23.4	-27.8	-15.9	-8.9	0.0
12/01/20	-22.4	-24.4	-19.1	-38.2	0.0
12/02/20	-18.2	-24.5	-13.8	-2.3	0.0
12/03/20	-11.0	-13.9	-9.5	1.7	0.0
12/04/20	-13.1	-16.3	-10.0	-12.3	0.0
12/05/20	-9.8	-12.2	-5.6	0.4	0.0
12/06/20	-11.1	-13.7	-7.6	-4.2	0.0
12/07/20	-7.8	-11.4	-6.4	-10.6	0.0
12/08/20	-14.7	-18.9	-9.1	-14.1	0.0
12/09/20	-9.7	-10.5	-9.1	-3.9	0.0
12/10/20	-15.1	-21.3	-10.4	-18.2	0.0

2020 Air Quality and Dustfall Monitoring Report
 Agnico Eagle Mines Ltd. – Meadowbank Division

Date	Average Temperature (°C)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Wind Speed (m/s)	Average Wind Direction (deg.)
12/11/20	-25.9	-31.4	-18.6	-38.7	0.0
12/12/20	-32.1	-33.5	-29.9	-39.8	0.0
12/13/20	-30.2	-32.9	-26.1	-29.3	0.0
12/14/20	-32.7	-36.6	-27.8	-42.3	0.0
12/15/20	-37.3	-38.5	-35.5	-30.8	0.0
12/16/20	-34.2	-38.1	-31.4	-7.7	0.0
12/17/20	-34.8	-38.7	-31.9	-27.6	0.0
12/18/20	-39.7	-42.3	-37.9	-30.5	0.0
12/19/20	-41.3	-42.1	-40.2	-25.8	0.0
12/20/20	-39.7	-41.6	-37.1	-23.7	0.0
12/21/20	-36.2	-38.9	-34.4	-24.7	0.0
12/22/20	-33.3	-35.8	-27.9	-12.0	0.0
12/23/20	-29.0	-34.3	-24.0	-25.1	0.0
12/24/20	-32.2	-35.6	-28.5	-20.1	0.0
12/25/20	-32.5	-35.4	-25.2	-20.6	0.0
12/26/20	-24.9	-26.9	-22.6	-38.9	0.0
12/27/20	-26.8	-31.6	-24.2	-43.7	0.0
12/28/20	-31.9	-33.3	-29.0	-30.9	0.0
12/29/20	-31.4	-32.5	-30.4	-31.8	0.0
12/30/20	-27.7	-31.2	-24.0	-13.5	0.0