



February 7th, 2022

Emily Koide
Technical Advisor I
Nunavut Impact Review Board
P.O. Box 1360 Cambridge Bay
Nunavut NU X0B 0C0

RE: NIRB 124106/11MN034: 2020-2021 Annual Monitoring Report and Board's Recommendations for Agnico Eagle's Meliadine Gold Mine Project

Dear Mrs. Koide,

Agnico Eagle Mines Limited (Agnico Eagle) thanks the Nunavut Impact Review Board (NIRB) for the recommendations and comments included in the NIRB's *2020-2021 Annual Monitoring Report for the Meliadine Gold Mine Project and Board's Recommendations* received November 9th, 2021.

As per Recommendation 1, please find attached Agnico Eagle's *2021 Saline Discharge Strategy Update*.

Should you have any questions or require further information, please do not hesitate to contact us.

With our best regards,

A handwritten signature in blue ink, appearing to read "Sara Savoie".

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Meliadine Gold Mine
2021 Saline Discharge Strategy Update

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

February 7th, 2022

SECTION 1 • INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine (the Project or Mine), located approximately 25 kilometres (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut, on Inuit Owned Lands (IOL). The Mine is located within the Meliadine Lake watershed of the Wilson Water Management Area (Nunavut Water Regulations Schedule 4).

In their 2020-2021 Annual Monitoring Report for Agnico Eagle's Meliadine Gold Mine Project, NIRB recommended Agnico Eagle provided an update on the continuation of the saline discharge strategy in 2021 (Recommendation 1).

As per NIRB's recommendation, this document presents an update on trucking and discharge activities that occurred during the 2021 open water season, as well as a summary of the:

- 2021 Ocean Discharge Monitoring Program summary and the 2021 Discharge Season results, including an analysis of the impacts on the marine environment;
- 2021 Terrestrial Environment Management and Monitoring Plan (TEMMP) update, presented in Appendix A;
- 2021 Preliminary Air Quality Monitoring report, presented in Appendix B.

It should be noted that monitoring results presented in this report provide a summary of 2021 results available at the time of writing. Complete results will be reported in the Meliadine Annual Report.

SECTION 2 • OCEAN DISCHARGE MONITORING PROGRAM SUMMARY

The following Tables 1 and 2 summarize the Ocean Discharge Monitoring Program monitoring locations and monitoring design. The marine sampling stations locations are shown on Figure 1.

Table 1 : Ocean Discharge Monitoring Program – Monitoring Locations

Description	Location	Centroid Location Coordinates (NAD 83)
Final Discharge Point (FDP; end-of-pipe monitoring)	MEL-26, Sampling Valve	62°48'01.99" N 92°06'00.05" W
Receiving Environment	MWE-1, Diffuser Location	62°47'48.43" N 92°05'53.10" W
Exposure Area	Melvin Bay	62°47'49.24" N 92°05'52.97" W
Reference Area A	Melvin Bay	62°46'55.38" N 92°07'01.43" W

Table 2 : Ocean Discharge Monitoring Program – Sampling Summary

Monitoring Component	Sampling Frequency	Monitoring Location	Sample Replication and Number of Samples
Deleterious Substances (MDMER Schedule 4)	Once per week	▪ FDP	One grab sample.
Effluent Characterization	Four times a year, at least one month apart, during discharge	▪ FDP	One grab sample.
In situ Water Column Measurements ¹	Four times a year, once a month during discharge	▪ Receiving Environment ▪ Exposure Area ▪ Reference Area A	7 stations in the Receiving Environment and Exposure Area, 3 stations in Reference Area A. One vertical profile per station.
Water Quality ¹	Four times a year, once a month during discharge	▪ Receiving Environment ▪ Exposure Area ▪ Reference Area A	7 stations in the Receiving Environment and Exposure Area, 3 stations in Reference Area A. One sample at 1 m below the surface and one sample at 5 m above the bottom at each station.
Acute lethality	Every month (sampled concurrently with effluent characterization)	▪ FDP (end-of-pipe)	One grab sample
Sublethal toxicity	Twice a year, at the start and finish of the discharge	▪ FDP (end-of-pipe)	One grab sample

Notes:

Sampling requirements per Metal and Diamond Mining Effluent Regulations (MDMER).

FDP = Final Discharge Point (end of pipe).

Receiving Environment = Diffuser Location.

¹ In situ water column measurements and water quality sampling at Receiving environment, Exposure Area and Reference Area were conducted twice in 2021 (August and September), since the discharge occurred mainly during those 2 months (between August 12th and October 5th). Limited discharge occurred at the beginning of October (until the 5th), hence a third sampling event was not carried out because of weather conditions and proximity with the last sampling event (September 18th).

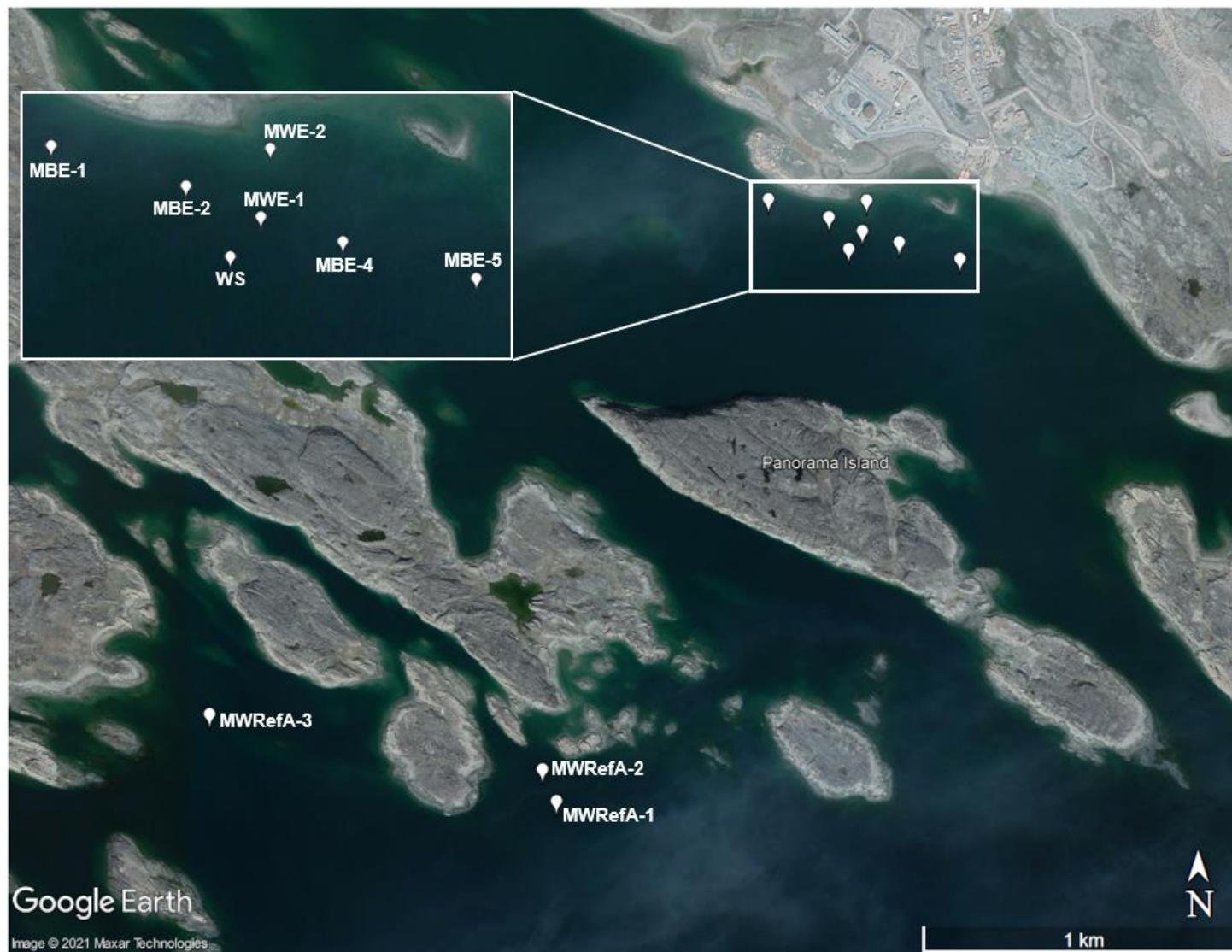


Figure 1: Ocean Discharge Monitoring Plan – Marine Sampling Stations

SECTION 3 • 2021 DISCHARGE SEASON RESULTS

In 2021, Agnico Eagle discharged 47,759 m³ of treated saline effluent into Melvin Bay through the final discharge point (MEL-26 monitoring station) in 52 days (August 12th, August 15th to 18th, August 20th to October 5th). In comparison, in 2020 Agnico Eagle discharged 30,317 m³ in 41 days (August 10th to 31st, September 16th to September 18th and September 23rd to October 8th).

Table 3 below summarizes the number of *one-way* trips on the All-Weather Access Road (AWAR) of trucks for discharge to sea during 2020 and 2021 discharge seasons.

Table 3 : Summary of truck trips for the 2020-2021 Discharge to sea seasons

	Number of one-way trips on the AWAR	
Month	2020	2021
August	868	505
September	505	1,747
October	303	250
Total	1,676	2,502

The trucking and discharge to sea rates increased in 2021 compared with 2020, with 826 additional one-way trips on the AWAR and 17,442 m³ additional volume of effluent discharged.

Analytical results of MEL-26 samples are presented in Appendix C. No exceedances of MDMER maximum authorized concentrations of prescribed deleterious substances occurred during the 2021 discharge season.

Additional mitigation measures and improved water management procedures were put in place to ensure the 2021 discharge season would maintain compliance with the TSS effluent limits. A TSS Mitigation and Monitoring Playbook was developed to compile items outlined in the action plan developed in 2020 in addition to other mitigation measures, monitoring programs, procedures defined for saline discharge. The TSS Mitigation and Monitoring Playbook was diligently followed throughout the 2021 discharge season.

The following items summarize the mitigation measures outlined in the playbook:

- Meetings with stakeholders and relevant personnel outlining roles and responsibilities in carrying out TSS mitigation actions, prior to discharge.
- Cleaning of Saline Pond 3 (SP3) prior to discharging to remove any accumulated solids in the pond.
- Maintaining SP3 operating levels to prevent re-suspension of TSS that may have accumulated at the pond bottom by wind-driven mixing.
- Elevating the pump installation in SP3 to further reduce entrainment of TSS that may have accumulated at the pond bottom.
- Truck cleaning requirement in adherence with a truck cleaning procedure prior to discharge.
- Logged inspections of truck tanks on a frequent basis and prior to discharge.

- Bag filter changes at the truck loading and discharge filtration stations based on pressure differentials observed before and after filtration and based on total water filtered by each bag.

Additionally, a TSS monitoring sampling calendar with the frequency and responsibility of samples to be collected at the Saline Effluent Treatment Plant (SETP) discharge, filtration station, and final discharge point was implemented and followed. TSS samples were analyzed both internally for immediate results in addition to accredited analysis conducted by ALS Burnaby. This lab was selected due to their analysis methodology for saline water resulting in unbiased (i.e. not skewed higher) TSS concentration results for high salinity samples. The analysis conducted internally replicates the methodology carried out by ALS Burnaby to ensure accurate results. Monitoring checklists conducted at time of sampling ensured QA/QC practices are maintained.

The TSS Mitigation and Monitoring Playbook also outlines a decision-making strategy to ensure inspection items and monitoring results trigger appropriate actions in maintaining TSS compliance.

Lastly, roles and responsibilities for the execution of the previously mentioned items are defined in the playbook to ensure it is successfully executed.

The mitigation techniques and additional monitoring that were implemented have been successful in preventing any non-compliances in 2021. In addition, acute toxicity tests on the Three Spine Stickleback at MEL-26 done throughout the sampling season indicated the water was non-toxic.

Tables in Appendix D show the results from the exposure and the reference areas at Melvin Bay. The preliminary analysis of results seems to indicate that there is no appreciable difference between the two locations which supports the assumption that there was no adverse impact from the increased discharge of effluent in 2021 on the marine environment.

As stated in the Ocean Discharge Monitoring Plan, results of the Ocean Discharge Monitoring will also be submitted to Environment and Climate Change Canada (ECCC) as per MDMER reporting requirements.

APPENDIX A

2021 TEMMP UPDATE



Meliadine Gold Mine
2021 TEMMP Update

Prepared by:

Agnico Eagle Mines Limited – Meliadine Division

February 7th, 2022

SECTION 1 • INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine (the Project or Mine), located approximately 25 kilometres (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut, on Inuit Owned Lands (IOL). The Mine is located within the Meliadine Lake watershed of the Wilson Water Management Area (Nunavut Water Regulations Schedule 4).

Annual monitoring and reporting of key valued ecosystem components (VECs) of the Mine, including wildlife and vegetation metrics, are contained in an annual Terrestrial Environment Management and Monitoring Plan (TEMMP). At the time this document was prepared, 2021 data analysis was underway and only preliminary findings are available for certain studies. This document will serve as a precursor to the 2021 TEMMP Annual Report, and further details about the findings of the 2021 monitoring programs will be contained in the 2021 TEMMP Annual Report as part of the Meliadine Annual Report.

SECTION 2 • 2021 TEMMP PROGRAM SUMMARY

Due to the COVID-19 pandemic, access to the Mine was restricted and therefore some monitoring programs (e.g., raptor nest monitoring) that were anticipated to be completed in 2021 could not be fulfilled (see Table 1). Furthermore, on-site participation by local communities was limited in 2021 to protect communities from the spread of COVID-19. In strict accordance with the detached operation protocol and all necessary health and safety protocols to prevent the spread of COVID-19, Jeremiah Issaluk from Rankin Inlet Kangiqliniq Hunters and Trappers Organization (KHTO) worked on site for 12 days in 2021. Jeremiah assisted with the caribou monitoring and mitigation program and the All-Weather Access Road (AWAR) wildlife survey. A full list of surveys completed in 2021 and any modifications due to COVID-19 are contained in Table 1. A brief summary of 2021 monitoring is provided below.

Table 1: Surveys Completed in 2021 at the Meliadine Mine.

Terrestrial Component	Survey	Completed in 2021	Survey Dates	Modifications
Vegetation	Non-native Plant Survey	Yes	23- 25 July	None
	Vegetation and Soil Monitoring	No	N/A	None – next survey planned for 2022
Wildlife	Wildlife Observations	Yes	Year Round	None
	Wildlife Track Surveys	Yes	6 January – 10 November	None
	Den Survey	Yes	5 July and 15 August	None
	Incidents and Mortalities	Yes	Year Round	None
	Caribou Advisory Program	Yes	22 June – 28 July	None
	Caribou Behaviour Scans	Yes	29 June – 12 July	Reduced surveying capacity
Birds	Shoreline Surveys	Yes	18 June – 05 July	None

Terrestrial Component	Survey	Completed in 2021	Survey Dates	Modifications
	Breeding Bird Surveys	Yes	21 June – 28 June	None
	Raptor Nests	No	None	Cancelled

Based on information analyzed as per 30 November 2021.

Non-native Plant Survey

A total of 100 locations were surveyed during the 2021 non-native invasive plant survey. Non-native plants were found throughout the survey area.

Of the 100 locations surveyed, one regulated weed, common dandelion (*Taraxacum officinale*) was observed at three locations within the AWAR in proximity of Rankin Inlet. Because of the small populations of common dandelion, these populations were removed by hand and disposed of at the incinerator. Of the 100 non-native occurrences, 97 contained flixweed (*Descurainia sophia*). Flixweed was mainly observed along the AWAR and around the exploration accommodation facility at different phenology stages including vegetative, blooming, seeding, and senescent. Agnico Eagle will try and determine if the species of flixweed being observed on site is the native species (*Descurainia sophioides*) or the non-native species (*D. sophia*) through specimen collection and subsequent delivery to the Canadian Museum of Nature for identification.

Wildlife Track Surveys

Wildlife sighting and track surveys were conducted by AEM personnel along the AWAR and Site. There were 3,938 individuals of 17 wildlife species and 6 unidentified wildlife species groups observed during surveys between January 6th and November 10th, 2021. This is a greater number of individuals recorded than in 2020 (2020 - 1,761 excluding caribou; 2021 – 3,930 excluding caribou). One species at risk, a single peregrine falcon (*Falco peregrinus*) was observed during surveys on June 2nd, 2021. The 2021 TEMMP Annual Report will include a summary of remaining data collected between November 11th and December 31st, 2021.

Den Survey

A survey for carnivore dens was conducted July 5th and August 15th, 2021. One Arctic fox den was observed approximately 375 m east of KM29 on the AWAR on July 5th, 2021. No photos are available for this den, since cubs were observed at the time of survey and it was not possible for the observer to get close.

One Arctic fox den was observed 1.3 km west of the Meliadine Mine on August 15th, 2021. Many entrances were observed, which may indicate that this den has been used by foxes for several years. This den is still active; a fox was observed going down one of the entrances at the time of the survey.

Incidents and Mortalities

A total of 37 wildlife mortalities were reported at the Mine in 2021. Mortalities were reported for three species: Arctic fox, Arctic hare, and a ptarmigan (unknown species). Thirty-two (32) of these mortalities were related to live trapping of Arctic fox by GN conservation officers. One other incident where a caribou ran into the side of a pickup truck was recorded. The driver was following a tractor trailer, and only heard the sound of something hitting the truck's rear side panel. The driver then saw the animal in the rear view mirror get up off the road and run east for several hundred metres out of sight. The caribou did not appear to be injured following the incident.

Caribou Advisory Program

The Qamanirjuaq caribou migration through the Mine was monitored from June 22nd through July 25th, 2021. Site and AWAR surveys were completed throughout this period by AEM personnel. Shutdowns affecting different components of the Mine were implemented to facilitate the safe migration of caribou through the Local Study Area. This includes closures along the AWAR for a total of 122.5 hours across 10 days. Vehicle traffic on site was restricted for 194.75 hours across 12 days. Open pit operations were shutdown for 211 hours across 12 days. The Exploration Camp was shutdown for 215.5 hours across 14 days. Activities at the Main Camp were restricted for 209.5 hours across 14 days.

Caribou Behaviour Monitoring

In 2021, AEM retained ERM Consultants Canada Ltd. (ERM) to update field protocols used for caribou behaviour monitoring. Caribou behaviour surveys were conducted in June and July 2021 at the Mine and along the AWAR in support of the existing Mine. A total of 46 surveys were conducted in 2021.

Shoreline Surveys

All shorelines within 200 m of the existing Mine infrastructure and AWAR were surveyed in 2021 for nesting waterbirds. Nests of twelve species were observed. A total of 55 active nests were detected in 2021, more than were found in previous years (2018 – 34 nests, 2019 – 26 nests, 2020 – 15 nests). As suggested in the 2020 TEMMP, discussion of areas where differences in number of nests observed between years, and potential influence of observer effects will be included in the TEMMP.

Point Count Surveys

A total of 72 point-count plots were resurveyed in 2021 to track changes in breeding bird metrics over the life of the Mine. Plots were surveyed along the AWAR in perpendicular transects to determine effects of the AWAR on breeding bird richness, diversity, and density. Six songbird species were detected in 2021. As suggested in the 2020 TEMMP, analysis in 2021 will account for habitat and observer effects on estimation of bird density.

APPENDIX B

2021 PRELIMINARY AIR QUALITY MONITORING REPORT



MELIADINE GOLD MINE

2021 Preliminary Air Quality Monitoring Report

Prepared by:

Agnico Eagle Mines Limited – Meliadine Division

February 7, 2022

EXECUTIVE SUMMARY

In accordance with NIRB Project Certificate No. 006, and as described in the Air Quality Monitoring Plan (Version 2, April 2020), Agnico Eagle Mines Ltd. (Agnico Eagle) continued ambient air quality monitoring at the Meliadine site, near Rankin Inlet in 2021. Monitoring included year-round passive measurement of dustfall at four onsite sampling stations, as well as NO₂ and SO₂ at two locations, over one month averaging periods. Agnico Eagle also conducted summertime dustfall transect sampling (25, 50, 100, 300 m distances from the road) at three locations along the AWAR and one location along the Rankin Inlet Bypass Road. Monitoring of suspended particulates (TSP, PM_{2.5}, and PM₁₀) occurred year-round at two onsite monitoring stations.

This preliminary 2021 monitoring report provides a summary of 2021 results available at the time of writing (January 2022). This includes complete results for NO₂ and SO₂, results through November 11 for dustfall, and most results through October 25 for suspended particulates.

Dustfall results are compared to Alberta Environment's Ambient Air Quality Guidelines (Alberta Environment and Parks, 2017) for recreational and industrial areas (AB-Rec, AB-Ind), for context. These guidelines are based on nuisance concerns and are not in place for the protection of environmental or human health. It is anticipated that guidelines for recreational areas may regularly be exceeded in close proximity to the AWAR or mine site, and that guidelines for industrial areas may occasionally be exceeded. For onsite perimeter monitoring stations (DF-4 – DF-7), 33 of the 40 samples collected to date in 2021 met the AB-Rec guideline, and all samples met the AB-Ind guideline. Historically, an increase in measured dustfall rates has occurred since mid-2017 when the construction period began, as anticipated, but exceedances of even the AB-Rec guideline continue to be relatively uncommon (<13% of samples in 2021).

For AWAR and By-Pass Road transects (DF-1, DF-2, DF-3, and DF-WT, summer-only sampling), overall rates of dustfall were lower than ever observed previously, despite similar or increased traffic in 2021. Historically (2019 and 2020), annual average rates of dustfall have only exceeded AB-Rec at the 25-m distance, and in 2021, average dustfall was well below the guideline for all distances. In total, three of the 62 total dustfall samples from transects exceeded the AB-Rec guideline in 2021. Though sampling later in the season than previously (into October) may have reduced average rates due to effects of snow cover, there were limited differences across sampling months suggesting that dust suppression applied during round 1 (July – August) was as effective in controlling dust as any snow cover later in the season. Dust suppressant in the form of calcium chloride dry product was applied along the length of the AWAR 2 – 3 times per month in June, July, and August.

Suspended particulates (TSP, PM_{2.5}, and PM₁₀) were assessed on a 6-d schedule in two locations (DF-5 and DF-7) using four Partisol air samplers. Overall data loss was 20% (56 of 282 possible samples), primarily due to a single instrument downtime incident that took it offline for two months.

All results for suspended particulates (222 samples) were below regulatory guidelines for the 24-h averaging time (Government of Nunavut Ambient Air Quality Standards (GN, 2011)/BC Ambient Air Quality Objectives (BC, 2020)) and maximum concentrations predicted in the FEIS, with the exception of a single TSP sample. Annual averages were less than relevant regulatory guidelines and FEIS predictions. Concentrations of metals of concern to the Project in TSP (cadmium and iron) were also less than FEIS-selected health-based screening values and FEIS maximum model predictions in all samples.

Calculated annual average concentrations of NO₂ and SO₂ were well below the Government of Nunavut Ambient Air Quality Standards, and were also less than FEIS maximum predicted values. This was the fifth full year of monitoring for gaseous compounds, and no clear spatial or temporal trends were observed.

As described in the Air Quality Monitoring Plan, a permanent weather station was installed at the Meliadine site, and daily averages for wind speed, direction, temperature, and solar radiation are provided.

Incinerator stack testing was performed in October, 2021. Average measured concentrations of mercury and total dioxins and furans were below the GN standards for these parameters.

Agnico Eagle is required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions. Calculated emissions for the Meliadine site (including Rankin Inlet operations) were reported on June, 2021 for the 2020 year. Total emissions were 123,357 tonnes CO₂e, which is less than the FEIS-predicted maximum of 317,000 tonnes CO₂e.

Since monitoring results in 2021 were within applicable air quality standards and FEIS predictions, and/or did not indicate any air quality trends of concern, no additional adaptive management measures are planned. Monitoring in 2022 will proceed according to the Air Quality Monitoring Plan (Version 2, April 2020). Complete results will be reported in the final 2021 Air Quality Monitoring Report, to be provided as part of the Meliadine Annual Report.

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Appendix A: Record of Dust Suppression

Appendix B: Daily Average Weather Data

1 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

In February 2015, Agnico Eagle Mines Ltd. (Agnico Eagle) was issued NIRB Project Certificate No. 006 for the Meliadine Gold Project, near Rankin Inlet, NU. In accordance with Conditions 1, 2, 3 and 27b of the Project Certificate, Agnico Eagle maintains the Meliadine Air Quality Monitoring Plan (the Plan; Version 2, April 2020) to describe the program for onsite ambient air quality monitoring.

The overall intention of the monitoring program is to confirm the effectiveness of mitigation measures identified in the Project's environmental assessment by measuring key air quality parameters, and in doing so, determine if alternative mitigation strategies are required to further reduce emissions from the Project.

In accordance with the NIRB Project Certificate and the Plan, air quality monitoring for the Meliadine site includes year-round analysis of suspended particulates, dustfall, NO₂ and SO₂. A real time meteorological station has been installed at the site and recorded meteorological data is reported.

A summary of the air quality monitoring program according to the most recent Air Quality Monitoring Plan (Version 2, April, 2020) is shown in Table 1. Monitoring according to the pre-construction objectives occurred from 2012 - 2016. In 2017, the project entered the construction phase, which continued in 2018. In 2019, the project entered the operations phase, which continued through 2021.

Table 1. Air quality monitoring objectives according to the Air Quality Monitoring Plan (Version 2; April, 2020). *New in Version 2.

Project Phase	Program Objective	Monitoring Equipment
Pre-construction (2012 – 2016)	<ul style="list-style-type: none"> To obtain baseline data in order to be able to compare with construction and operation phases 	<ul style="list-style-type: none"> Three dustfall jars (passive) onsite Three dustfall jars along AWAR
Construction (2017 – 2018)	<ul style="list-style-type: none"> To verify compliance with applicable standards To apply mitigation measures if necessary 	<ul style="list-style-type: none"> One TSP/PM₁₀ sampling unit (Partisol model 2025) One passive NO₂ – SO₂ monitor Four dustfall jars (passive) onsite Three dustfall jars (passive) along AWAR

Project Phase	Program Objective	Monitoring Equipment
Operations (2019 +)	<ul style="list-style-type: none"> To verify the predicted concentrations of TSP, PM₁₀, and PM_{2.5} To verify that the mitigation measures considered integral to the Project are being incorporated as planned, and are effective 	<ul style="list-style-type: none"> Two TSP sampling units (Partisol model 2025) (DF-5, DF-7) Two PM_{coarse}/PM_{2.5} sampling units (Partisol Model 2025-D) (DF-5, DF-7) Two passive NO₂–SO₂ monitors (DF-5, DF-7) Four dustfall jars (passive) onsite (DF-4, DF-5, DF-6, DF-7) <i>*Three dustfall (passive) monitoring transects along AWAR (km 4, 10, 23 – DF-1, DF-2, DF-3) and one along the Rankin Inlet By-Pass Road (DF-WT) – summer season</i> <i>*Background dustfall (passive) monitoring at a reference station – summer season</i>

1.2 REPORTING

According to the site's Air Quality Monitoring Plan, a comprehensive report on results of the program is provided to the NIRB by March 31 annually.

In their 2020-2021 Annual Monitoring Report for Agnico Eagle's Meliadine Gold Mine Project, NIRB recommended Agnico Eagle provided an update on the continuation of the saline discharge strategy in 2021 (Recommendation 1), including an analysis on the impacts on air quality.

In accordance with that recommendation, this document presents the preliminary 2021 air quality monitoring report, encompassing Partisol monitoring results through October 2021, dustfall monitoring results through November, 2021 and NO₂/SO₂ results through December 2021. As previously mentioned, complete results will be reported in the final 2021 Air Quality Monitoring Report, to be provided as part of the Meliadine Annual Report.

1.3 2021 PROGRAM SUMMARY

The 2021 air quality and dustfall monitoring program is summarized in Table 2 and described below, including any deviations from the Plan. Monitoring locations are shown in Figure 1.

Table 2. Planned air quality monitoring locations and parameters. *Any deviations in the sampling plan in 2021 are in italics. Data loss for each monitoring station is described in Section 2.*

Monitoring Station	UTM (15V)	Parameters	Frequency	General Location	Location Description
DF-WT	542890E 6967093N	Dustfall transect	Summer only	Rankin Inlet By-Pass Road	1.3 km northwest of Nipissak Lake and ~500m southeast (downwind) of community quarry sites. Samples at 60, 120, 300m on each side of the road and 1000 m on the east side.
DF-1	544073E 6970759N	Dustfall transect	Summer only <i>(sampled August and September)</i>	AWAR	AWAR km 4 South of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road. Former year-round station: 100 m from road (west/upwind side)
DF-2	546621E 6973334N	Dustfall transect	Summer only <i>(former single station also sampled year-round)</i>	AWAR	AWAR km 10 East of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road. Former year-round station: 100 m from road (west/upwind side)
DF-3	544899E 6981387N	Dustfall transect	Summer only <i>(former single station also sampled year-round)</i>	AWAR	AWAR km 23 North of Iqalugaarjuup Nunanga Park. Samples at 25, 100, and 300 m on each side of the road. Former year-round station: 25 m from road (west/upwind side)
DF-4	540014E 6987836N	Dustfall	Year-round	Onsite	Adjacent to freshwater pumphouse on Lake A8. Downwind of main mine site.
DF-5	542226E 6988507N	Dustfall NO ₂ , SO ₂ TSP, PM ₁₀ , PM _{2.5}	Year-round	Onsite	500 m south-east of the mine camp. Downwind of main mine site. Within Air Quality Impact Assessment Site Study Area.
DF-6	537586E 6989096N	Dustfall	Year-round	Onsite	Adjacent to Lake B5, approx. 600 m southwest of main mine site (direction perpendicular to dominant wind).

Monitoring Station	UTM (15V)	Parameters	Frequency	General Location	Location Description
DF-7	537143E 6991176N	Dustfall NO ₂ , SO ₂ TSP, PM ₁₀ , PM _{2.5}	Year-round	Onsite	Adjacent to emulsion plant, approx. 2 km northwest (upwind) of the camp complex. Within Air Quality Impact Assessment Local Study Area (just outside of Site Study Area).
DF-8	525656E 7001656N Or alternative 2021: 533022E 6999312N	Dustfall	Summer only	Reference	North end of Meliadine Lake near AEMP Reference Area 2 (MEL-04). UTM approximate. Reference stations may be rotated.

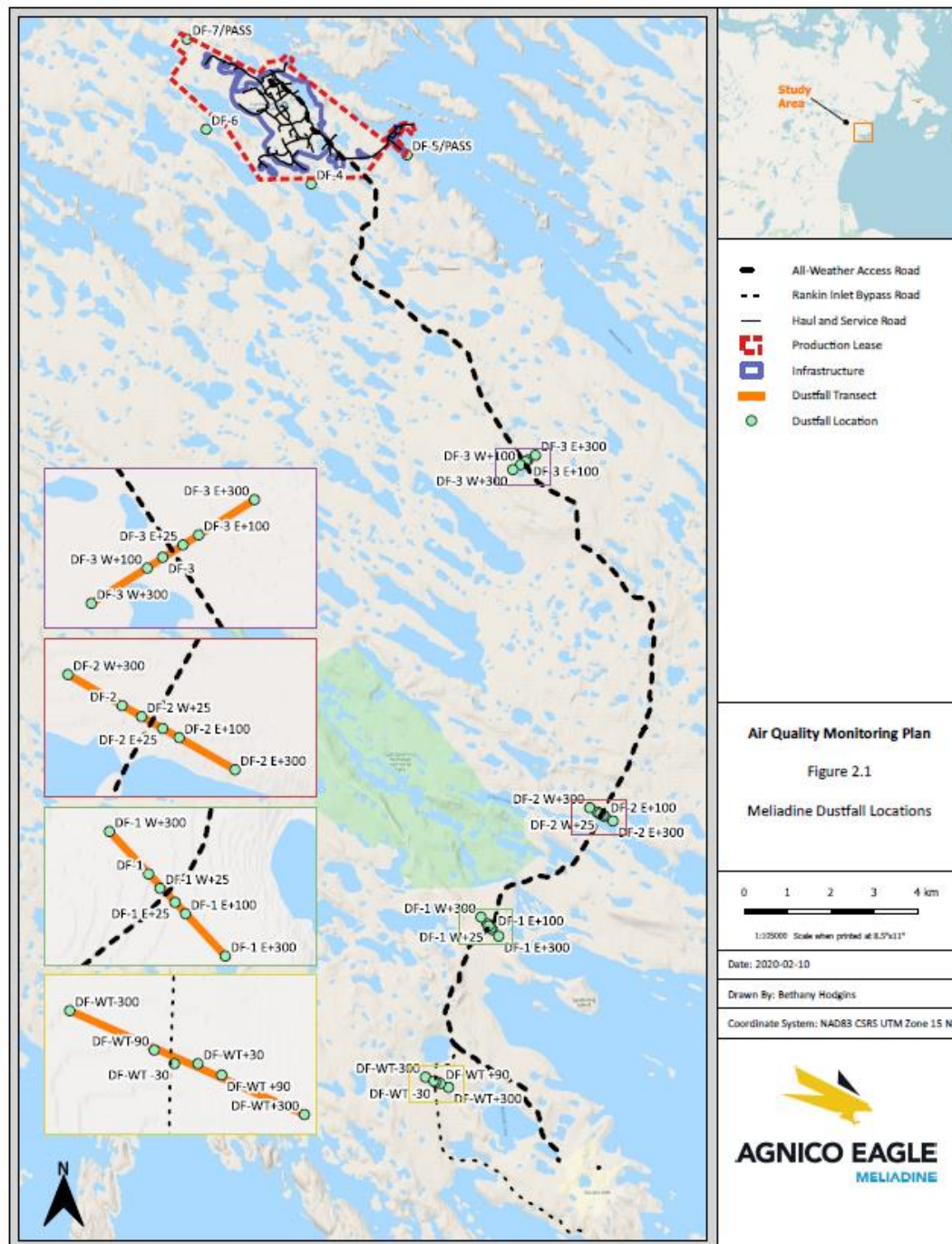


Figure 1. Air quality monitoring locations.

2 METHODS

2.1 SAMPLING METHODOLOGY

2.1.1 *Suspended Particulates*

Suspended particulates (TSP, PM₁₀, PM_{2.5}) were planned to be sampled over 24-h periods every six days using a Partisol Plus Model 2025i Sequential Air Sampler (TSP) and a Partisol Plus Model 2025-D Dichotomous Sequential Air Sampler (PM_{2.5} and PM_{coarse}) at monitoring locations DF-5 and DF-7 (Figure 1). 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. TSP filters are also analyzed by the laboratory for cadmium and iron, as described in the Plan.

In 2021, suspended particulate sampling occurred every six days beginning January 4, with the exception of sampling dates where data loss occurred for various reasons (Table 3). As described in the Air Quality Monitoring Plan (Version 2, April 2020) some data loss is anticipated, particularly during the winter months, due to the extreme weather conditions at the Meliadine site.

For three of the four Partisol units, data loss for the period of this report is considered minor to moderate, with rates of 9 - 21%, or 4 - 10 of 47 possible samples (Table 3). For the dichotomous unit (PM_{2.5}/PM₁₀) at DF-7, more extensive data loss occurred early in the year. Equipment failure began March 29 and eventually required removal of the unit from the field for troubleshooting in the indoor environment. After communication with the supplier and manufacturer, additional new parts were ordered by April 10. After receiving and installing the new parts, sampling resumed June 9. No further downtime occurred, and overall data loss to October 25 is 37% for this instrument. Results for PM_{2.5}/PM₁₀ at the other monitoring station (DF-5) are reviewed in particular for the March 29 – June 9 period of data loss to help understand trends in fine and coarse particulate matter onsite. The DF-5 station is located downwind of the site, and is generally anticipated to receive higher concentrations of mine-related suspended particulate matter than DF-7.

The downtime experienced from March 29 – June 9 at DF-7 resulted in the loss of 24 of the 282 possible particulate samples for which results are available to date. With a rigorous routine maintenance schedule, relatively few instances of data loss have occurred due to additional failures of the instrument or software (15 cases among 282 potential samples). Additional minor losses occurred as a result of torn filters (9 samples), technician error in set-up (6 samples) and logistical errors (2 samples).

Table 3. Summary of data loss due to: software error (e.g. instrument did not correctly initiate sampling sequence), logistical errors (e.g. missing in transit), technician error (e.g. sampling sequence not properly initiated) or other equipment failure (e.g. filter exchange error, broken parts), as indicated. Check mark indicates sample was collected.

Sample Date	TSP		PM _{2.5} /PM ₁₀	
	DF-5	DF-7	DF-5	DF-7
1/04/21	✓	✓	✓	✓
1/10/21	✓	✓	✓	✓
1/16/21	✓	✓	✓	✓
1/22/21	✓	✓	✓	✓
1/28/21	✓	✓	✓	✓
2/03/21	✓	✓	✓	✓
2/09/21	✓	✓	✓	✓
2/15/21	✓	✓	✓	✓
2/21/21	✓	✓	✓	✓
2/27/21	Equipment failure ¹	✓	Equipment failure ¹	✓
3/05/21	✓	✓	✓	✓
3/11/21	✓	✓	✓	✓
3/17/21	✓	✓	✓	Software error ⁴
3/23/21	✓	✓	✓	✓
3/29/21	✓	Software error ⁴	✓	Equipment failure ⁵
4/04/21	✓	Software error ⁴	✓	
4/10/21	✓	✓	✓	
4/16/21	✓	Equipment failure ²	✓	
4/22/21	✓		✓	
4/28/21	✓		Equipment failure ³	
5/04/21	✓	✓	✓	
5/10/21	✓	✓	✓	
5/16/21	✓	✓	✓	
5/22/21	✓	✓	✓	
5/28/21	✓	✓	✓	
6/03/21	✓	✓	✓	
6/09/21	✓	✓	✓	✓
6/15/21	✓	✓	✓	✓
6/21/21	✓	✓	✓	✓
6/27/21	Software error ⁴	✓	✓	✓
7/03/21	✓	✓	Tech. error ⁸	✓
7/09/21	✓	✓	✓	✓
7/15/21	✓	Tech. error ⁸	✓	Tech. error ⁸

Sample Date	TSP		PM _{2.5} /PM ₁₀	
	DF-5	DF-7	DF-5	DF-7
7/21/21	✓	✓	✓	Tech. error ⁸
7/27/21	✓ (13 h)	Tech. error ⁸	✓ (13 h)	✓
8/03/21	✓	Equipment failure ⁷	Equipment failure ⁹	✓
8/08/21	✓	✓	✓	✓
8/14/21	Results pending			
8/20/21				
8/26/21				
9/01/21	✓	✓	✓	PM _{2.5} - ✓ PM ₁₀ – Equipment failure ⁷
9/07/21	✓	Equipment failure ⁷	PM _{2.5} - ✓ PM ₁₀ – Equipment failure ⁷	PM _{2.5} - ✓ PM ₁₀ – Equipment failure ⁷
9/13/21	✓	✓	✓	✓
9/19/21	✓	✓	✓	✓
9/25/21	Logistical error ⁶	✓	✓	✓
10/01/21	Logistical error ⁶	✓	✓	PM _{2.5} - ✓ PM ₁₀ – Equipment failure ⁷
10/07/21	✓	Equipment failure ⁷	✓	Equipment failure ⁷
10/13/21	✓	✓	Tech. error ⁸	✓
10/19/21	✓	✓	Tech. error ⁸	✓
10/25/21	✓	✓	✓	✓
¹ - The heated shelter door was found to have broken open and no sample was collected due to the low ambient temperature. Door fixed.				
² – O-ring found to have come off in filter compartment when checked on April 28. Re-set.				
³ – Filter did not exchange properly. Re-set.				
⁴ – Software error – sample not collected.				
⁵ – Extensive equipment failure requiring supplier and manufacturer support to troubleshoot, resulting in order of additional new parts.				
⁶ - Filter lost between collection and laboratory				
⁷ - Torn filter, results excluded				
⁸ - Sequence not properly initiated				
⁹ - Equipment failure fixed by technicians onsite				

2.1.2 *Dustfall*

Dustfall was collected in open vessels containing a purified liquid matrix (de-ionized water and isopropanol), supplied by a commercial analytical laboratory. Particles are deposited and retained in the liquid, which is then analyzed for total and fixed (non-combustible) dustfall by the supplying laboratory. While regulatory guidelines relate to total dustfall, the non-combustible fraction (fixed dustfall) is considered more representative of mine-related activity because it excludes organic components (e.g. pollen, plants, animal particles).

Dustfall vessels were deployed according to laboratory specifications for sequential one-month periods at each sampling location, retrieved, re-sealed, and shipped back to the laboratory. Canisters were placed on a stand at 2-m height, with an open bucket-style holder fitted with wires around the rim to deter birds (see Figure 2). Calculated dustfall rates were normalized to 30 days ($\text{mg}/\text{cm}^2/30$ days).

In 2021, dustfall monitoring was conducted over approximately 30-day periods for onsite year-round sampling stations DF-4 – DF-7 from December 25, 2020 – December 11, 2021 (Figure 1). For this report, results are available for the period until October 11. No data loss occurred for dustfall samples.

As described in the Air Quality Monitoring Plan (Version 2, April, 2020), summer-only transect sampling is planned for AWAR stations DF-1 – DF-3. However, year-round samples have historically been collected at single locations associated with these transects (see Table 2), and this sampling may continue opportunistically, as occurred for DF-2 and DF-3 in 2021.

Dustfall was also sampled for AWAR transects DF-2 and DF-3 over three 30-d periods from July 10 – October 11, 2021. AWAR transect DF-1 and By-Pass Road transect DF-WT were sampled over two 30-d periods from August 11 – October 11. These locations were not sampled until August 11 due to a limited supply of sampling canisters onsite.



Figure 2. Dustfall sampling stand at the Meliadine site.

2.1.3 NO_2 and SO_2

Concentrations of NO_2 and SO_2 by volume (ppb) were analyzed over one-month periods using a passive sampling device provided by Bureau Veritas Laboratories and deployed by Agnico Eagle technicians according to laboratory-identified procedures. Following each sampling period, the sampling device was retrieved and shipped to the commercial laboratory for analysis.

In 2021, the passive samplers for NO_2 and SO_2 were installed at two locations (DF-5 and DF-7; Figure 1). Passive monitoring of NO_2 and SO_2 was conducted over approximately 30 day periods from December 27, 2020 through December 11, 2021. In 2021, one duplicate sampler was also installed for SO_2 at DF-5 and one duplicate sampler was installed for NO_2 at DF-7.

For NO_2 , two of 11 sample results were unavailable for location DF-5 due to missing canisters as reported by the laboratory (February 28 – April 29). It is likely that these canisters were accidentally not shipped. Neither NO_2 nor SO_2 results were available for any station for the July 3 – August 11 period due to unlabeled canisters, as reported by the laboratory.

2.2 DATA ANALYSIS

2.2.1 *Suspended Particulates*

2.2.1.1 Data Processing

Laboratory-reported results for mass of particulates were used to calculate associated concentrations of TSP, PM₁₀ and PM_{2.5} (µg/m³) according to the Partisol operating manual, as follows.

TSP is calculated as:

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

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:

$$PM_{2.5} = M_{2.5}/V_{2.5}$$

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:

$$PM_{coarse} = M_{coarse}/V_{total} - PM_{2.5}(V_{coarse}/V_{total})$$

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 $\text{PM}_{\text{coarse}}$ filter during the sampling period (~2.4 m³)

Concentration of PM_{10} is then calculated as $\text{PM}_{\text{coarse}} + \text{PM}_{2.5}$.

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). Standardized volumes were recorded by the Partisol unit for each 24-h sampling period, and used in calculations.

1.1.1.1 Regulatory Guidelines and FEIS Predictions

Results of suspended particulate monitoring were compared primarily to available Government of Nunavut (GN) Environmental Guidelines for Ambient Air Quality (October, 2011). Where GN guidelines were not available (i.e. for PM_{10}) results were compared to the BC Air Quality Objective Guidelines (February, 2020). Regulatory guidelines for the measured parameters are provided in Table 4.

Results were additionally compared to FEIS predictions for maximum concentrations of suspended particulates, to ensure estimates were sufficiently conservative, and related impact assessment results continue to be representative (i.e. Air Quality Impact Assessment – FEIS Volume 5). Maximum FEIS air quality predictions for the site study area (SSA) and local study area (LSA) where the monitors DF-5 and DF-7 are located, respectively, are shown in Table 4. It is noted that monitoring results include background contributions, whereas model predictions do not, so comparisons to these FEIS predictions are expected to be conservative. Comparisons to predicted peak concentrations (which include influence of meteorological anomalies) may be conducted if such a situation occurs.

Table 4. Government of Nunavut (GN) Environmental Guidelines for Ambient Air Quality (October, 2011), BC Ambient Air Quality Objectives (February, 2020) and FEIS predictions for suspended particulate matter at Meliadine along with the representative monitoring station (DF-5/DF-7).

Parameter	Averaging Time	Regulatory Guideline		FEIS Prediction (µg/m ³)	
		Jurisdiction	Guideline (µg/m ³)	SSA (represented by DF-5)	LSA (represented by DF-7)
$\text{PM}_{2.5}$	24-h	GN	30	55.2	19.6
PM_{10}	24-h	BC	50	104.0	58.2
Total Suspended Particulate (TSP)	24-h	GN	120	213.7	122.3
	Annual geometric mean	GN	60	16.8	17.0

In accordance with Term and Condition 1b of the Project Certificate, concentrations of particulate-bound metals of relevance to the Project (iron and cadmium) are measured in TSP samples to understand implications for human health, as predicted in the Project's Human Health Risk Assessment (FEIS Volume 10). Results are compared to the FEIS-selected health-based screening values (Golder, 2014, Volume 10, Appendix 10-2), as shown in Table 5, as well as FEIS-predicted maximum concentrations of contaminants for monitoring-site locations Camp (DF-5) and Receptor 1 (DF-7) (Golder, 2014, Volume 10). The FEIS health-based screening values were generally selected as the most conservative air quality guideline from a wide range of jurisdictions, as described in Golder, 2014, Volume 10, Appendix 10-2. These guidelines will provide context for interpreting the results of trace metals analysis in particulate samples.

Table 5. FEIS-selected health-based screening values for chronic inhalation (24-h) from the Project's Human Health Risk Assessment (Golder, 2014, Volume 10), and FEIS-predicted maximum concentrations of contaminants for monitoring-site locations Receptor 1 and Camp (Golder, 2014, Volume 10).

Contaminant	FEIS Values		
	Selected Health-Based Screening Value ($\mu\text{g}/\text{m}^3$)	Prediction – Camp (DF-5) ($\mu\text{g}/\text{m}^3$)	Prediction – Receptor 1 (DF-7) ($\mu\text{g}/\text{m}^3$)
Cadmium	0.025	0.0180	0.0030
Iron	4	8.7300	3.7000

2.2.2 Dustfall

No standards for dustfall are available for Nunavut. Results of the dustfall analysis are therefore compared to the Alberta Ambient Air Quality Guideline for recreational areas for total dustfall (June, 2016) of $0.53 \text{ mg}/\text{cm}^2/30\text{d}$ and commercial/industrial guideline of $1.58 \text{ mg}/\text{cm}^2/30\text{d}$, to provide context. These guidelines are based on aesthetic or nuisance concerns, and are to be used for airshed planning and management, as a general performance indicator, and to assess local concerns.

Based on measurements for other mine-related roads in Nunavut (Meadowbank Complex), it is anticipated that guidelines for recreational areas may regularly be exceeded in close proximity to the AWAR or mine site, and that guidelines for industrial areas may occasionally be exceeded. However, exceedance of these guidelines does not necessarily indicate that impacts to ecological endpoints (e.g. vegetation or wildlife) are occurring. Impacts of dust deposition on the aquatic and terrestrial environments are assessed and compared with FEIS predictions through the AEMP (water and sediment quality monitoring) and TEMMP (soil and vegetation sampling through the ecological risk assessment program).

Dustfall rates are additionally analyzed for indications of spatial trends to look at differences between transect locations, upwind and downwind locations, and distance from the road. A temporal analysis will also check for consistently increasing trends in the measured dustfall rates year-over-year.

2.2.3 NO₂ and SO₂

NO₂ and SO₂ sampling results are compared with the GN Environmental Guidelines for Ambient Air Quality (October, 2011). Concentrations measured on a monthly basis are averaged and compared to the annual average guidelines for NO₂ (60 µg/m³ or 32 ppb) and SO₂ (30 µg/m³ or 11 ppb).

A comparison to FEIS maximum model predictions plus FEIS-assumed background concentrations for NO₂ and SO₂ is also included (Table 6), along with a review of historical data for spatial and temporal trends.

Table 6. Summary of GN guidelines and FEIS predictions (plus assumed background concentrations) for annual average concentrations of NO₂ and SO₂.

Compound	GN Guideline (Annual Average)	FEIS Prediction + Background (Annual Average)	
		SSA (DF-5)	LSA (DF-7)
NO ₂	32 ppb	23.3 + 0.05 ppb	12.1 + 0.05 ppb
SO ₂	11 ppb	0.1 + 0.2 ppb	0.0 + 0.2 ppb

2.3 QA/QC

According to the Plan, QA/QC procedures for the monitoring program included the following:

2.3.1 Suspended Particulates

- Trip blanks (laboratory prepared cartridges that travel with the samples but are not exposed to the atmosphere) were collected for the TSP units at both DF-5 and DF-7 on February 9, and both results were below detection limits (<3 ug/filter);
- An accredited laboratory was used for pre-sample preparation and determining sample weights;
- Samples and data were collected by appropriately trained personnel; and
- Qualified personnel interpreted the flow data and confirmed ambient particulate concentrations based on laboratory results.

2.3.2 Dustfall

- A trip blank (laboratory prepared samples that travel with the samples but are not exposed to the atmosphere) was sent with three shipments, and two canisters were analyzed.

- ◆ Results for trip blanks were between 0.024 and 0.086 mg/cm²/30d, which is greater than the reportable detection limit of 0.001 mg/cm²/30d.
- ◆ These results indicate that dustfall measurements for regular samples may be artificially elevated up to 0.086 mg/cm²/30d due to travel-related contamination.
- ◆ This outcome is considered in data interpretation.
- An accredited laboratory was used for sample preparation and analysis; and
- Samples were collected by appropriately trained personnel.

2.3.3 *Passive NO₂-SO₂*

- Throughout the year, field duplicates were collected for SO₂ at DF-5 and for NO₂ at DF-7 (results discussed in Section 3.3);
- An accredited laboratory was used for pre-sample preparation and sample analysis;
- Samples were collected by appropriately trained personnel; and
- Qualified personnel interpreted ambient NO₂-SO₂ concentrations based on laboratory results.

3 MONITORING RESULTS

3.1 SUSPENDED PARTICULATES

3.1.1 *TSP, PM₁₀ and PM_{2.5}*

In 2021, suspended particulate sampling occurred every six days beginning January 4. Available results at this time (January 4 through October 25, except August 14 – 26, which are pending) are shown in Figures 3, 4, and 5.

With the exception of a single TSP sample (April 10, DF-7), all values were below the GN or BC guidelines and FEIS predictions for the 24-h averaging time. Particularly since the DF-7 station is located on the upwind edge of the Meliadine site, the single exceedance is considered to be an outlier case, potentially due to a localized event, and not indicative of typical onsite conditions or any trends towards elevated air quality concerns.

Annual average concentrations of TSP calculated for January 4 – October 25 are provided in Table 7. 2021 was the first full year of monitoring. In all cases, measured concentrations were less than the GN guideline and FEIS predictions.

Table 7. Measured and predicted annual average concentrations of TSP for Meliadine monitoring stations DF-5 and DF-7.

Year	DF-5 ($\mu\text{g}/\text{m}^3$)		DF-7 ($\mu\text{g}/\text{m}^3$)	
	Geometric mean	Arithmetic mean	Geometric mean	Arithmetic mean
	<i>GN Guideline: 60</i>	<i>FEIS Prediction: 16.8</i>	<i>GN Guideline: 60</i>	<i>FEIS Prediction: 17.0</i>
2021	3.8	6.4	4.1	11.0

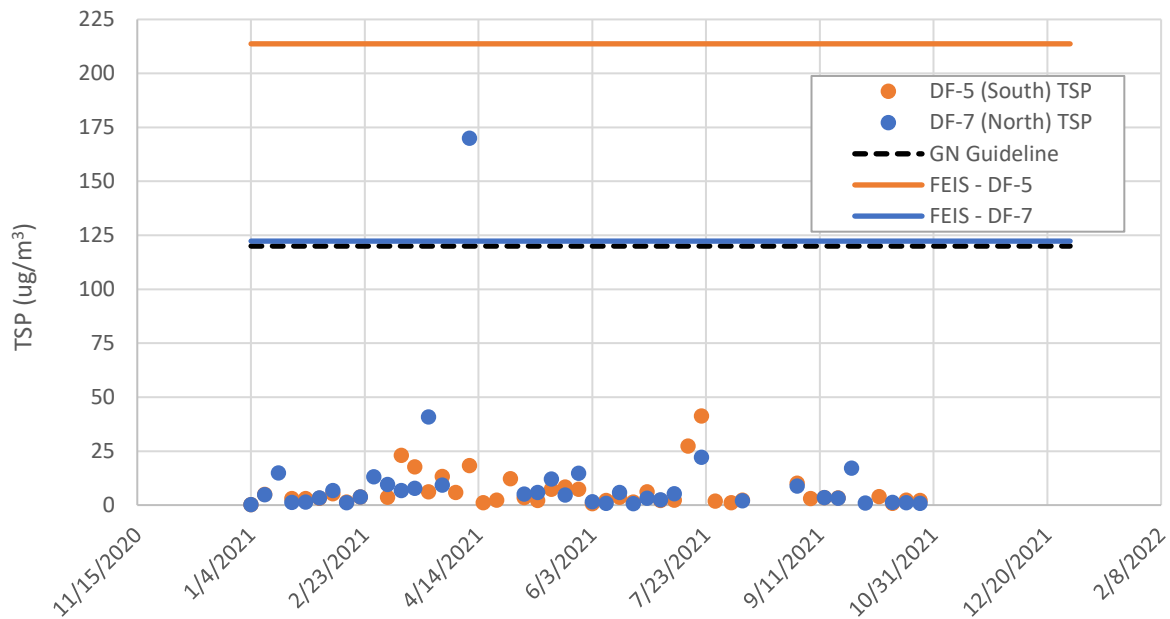


Figure 3. 24-h measured concentrations of total suspended particulates (TSP) at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the Government of Nunavut (GN) guideline and FEIS maximum model predictions for each station.

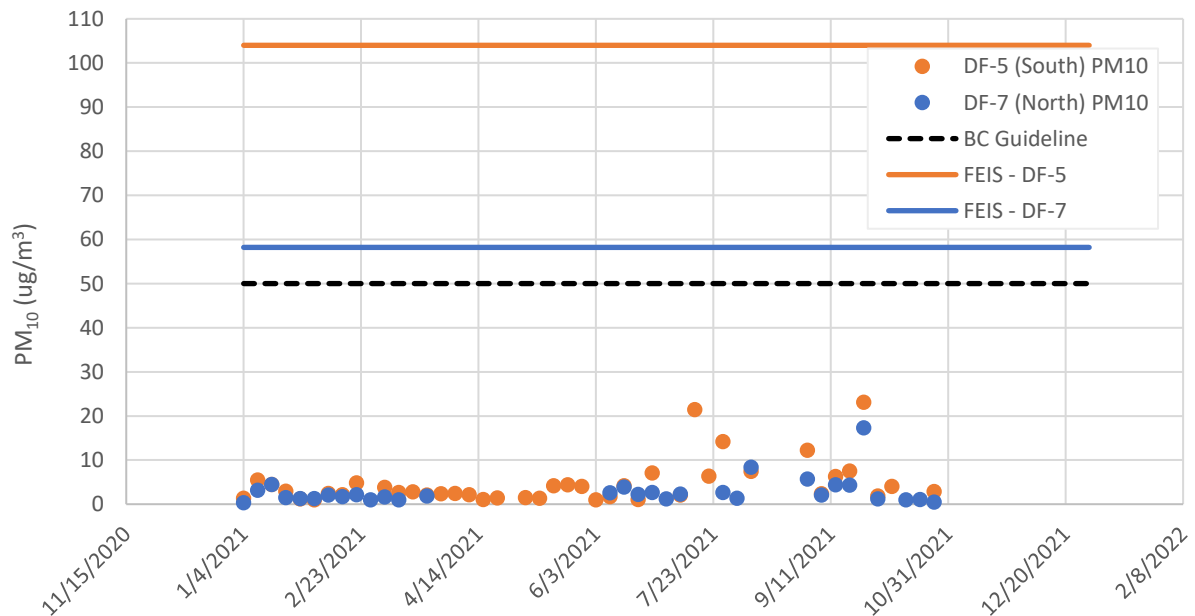


Figure 4. 24-h measured concentrations of PM₁₀ at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the BC guideline and FEIS maximum model predictions for each station.

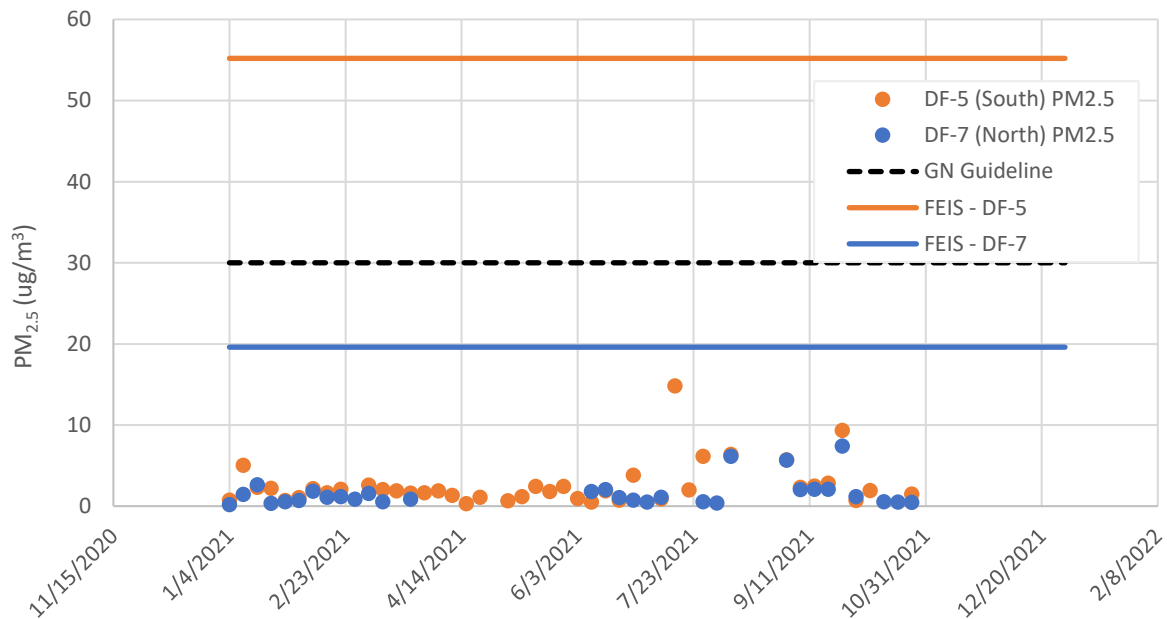


Figure 5. 24-h measured concentrations of $PM_{2.5}$ at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the Government of Nunavut (GN) guideline and FEIS maximum model predictions for each station.

Monitoring for suspended particulates began in December 2018 and all historical data is provided in Figures 6, 7, and 8. Partisol instruments were inactive from early 2019 to October 2020, when they were sent for maintenance. Just one TSP sample to date has exceeded regulatory guidelines or FEIS predictions. Since only one full year of data is available, temporal trends are not assessed.

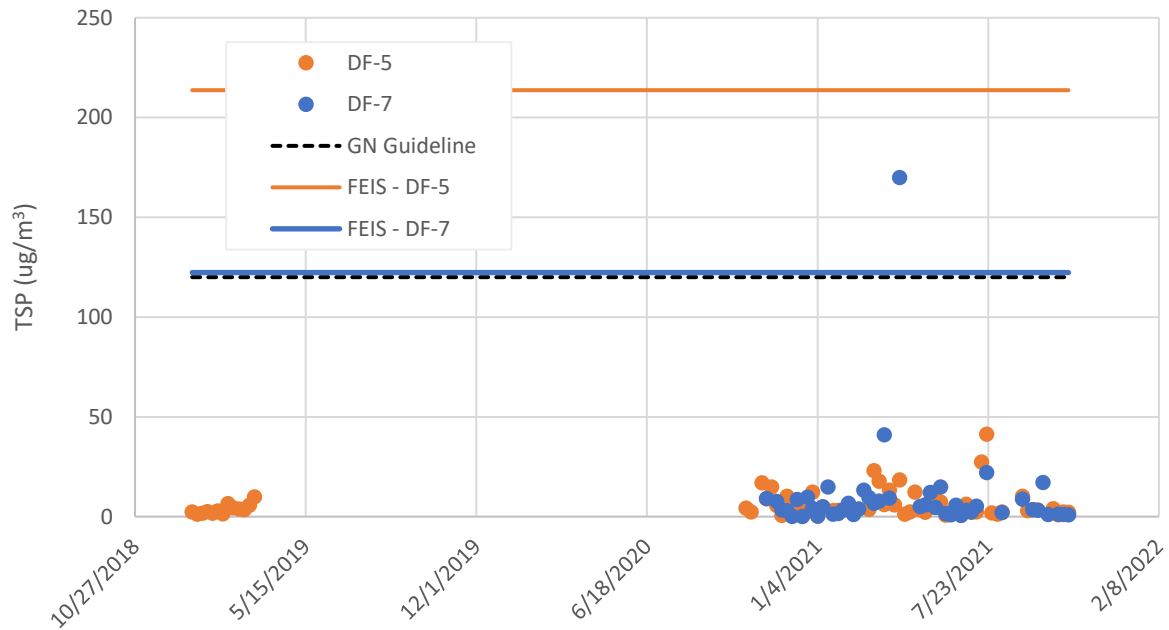


Figure 6. Historical 24-h measured concentrations of total suspended particulates (TSP) at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the Government of Nunavut (GN) guideline and FEIS maximum model predictions for each station.

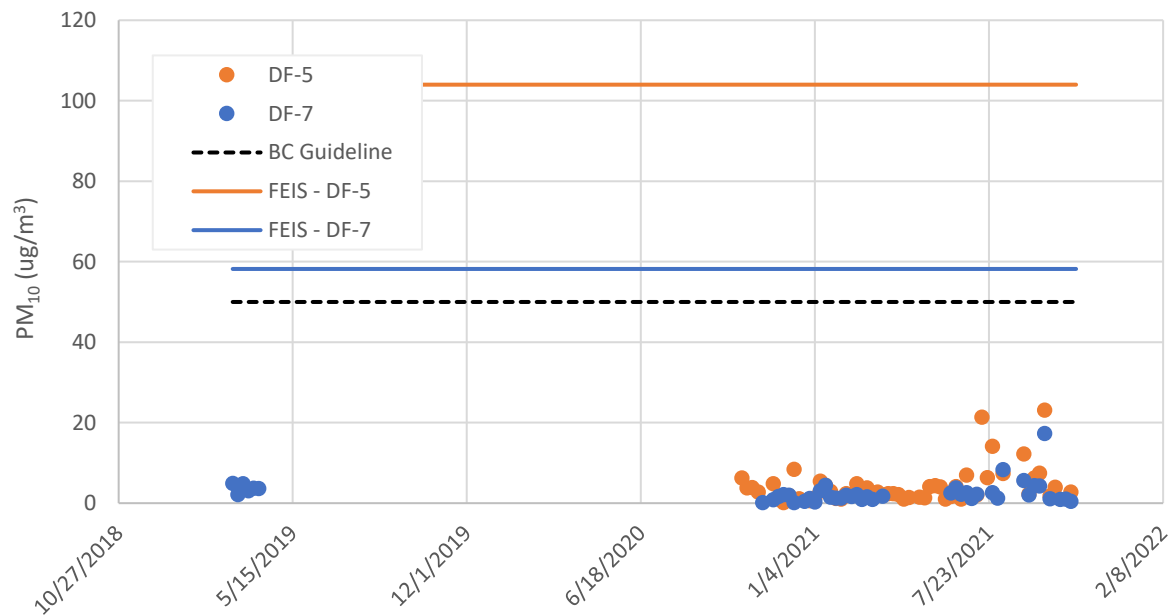


Figure 7. Historical 24-h measured concentrations of PM_{10} at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the BC guideline and FEIS maximum model predictions for each station.

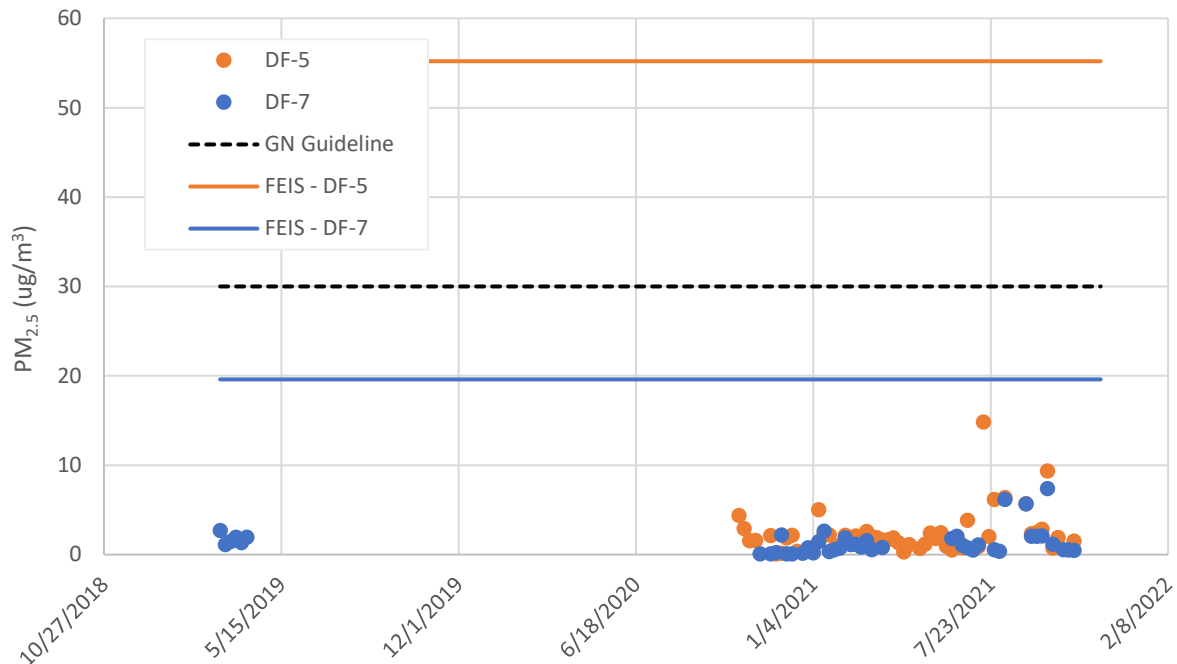


Figure 8. Historical 24-h measured concentrations of $PM_{2.5}$ at monitoring stations DF-5 and DF-7 at the Meliadine site (points). Lines indicate the Government of Nunavut (GN) guideline and FEIS maximum model predictions for each station.

3.1.2 Metals

Results for metals analysis in TSP filters are available at this time for samples collected through September 25. In addition to the TSP sample loss described in Section 2.1.1, metals results were not received for TSP samples collected on March 11 and June 3 (DF-7 location); and February 15 (DF-5 location). The reasons for this data loss are under investigation.

Concentrations of cadmium and iron measured in TSP samples are shown in Figures 9 and 10 along with the FEIS-selected health-based screening value and maximum model prediction (Section 2.2.1). Where laboratory-reported results ($\mu\text{g}/\text{filter}$) were below the detection limit, $\frac{1}{2}$ the limit was used in volumetric calculations which were performed using Partisol-recorded STP-corrected intake volumes (m^3). For both analyses, the majority of results were below the laboratory detection limit and no exceedances of the FEIS-selected health-based screening values or model predictions occurred for either cadmium or iron.

For station DF-7, the FEIS maximum model prediction for cadmium ($0.003 \mu\text{g}/\text{m}^3$) is less than the volumetric concentration calculated using $\frac{1}{2}$ the laboratory detection limit ($0.004 \mu\text{g}/\text{m}^3$). As a result, the prediction is not plotted on Figure 9, and a comparison to this value will be discussed

for samples where detections occur. In 2021, all results for cadmium from both stations were below laboratory detection limits.

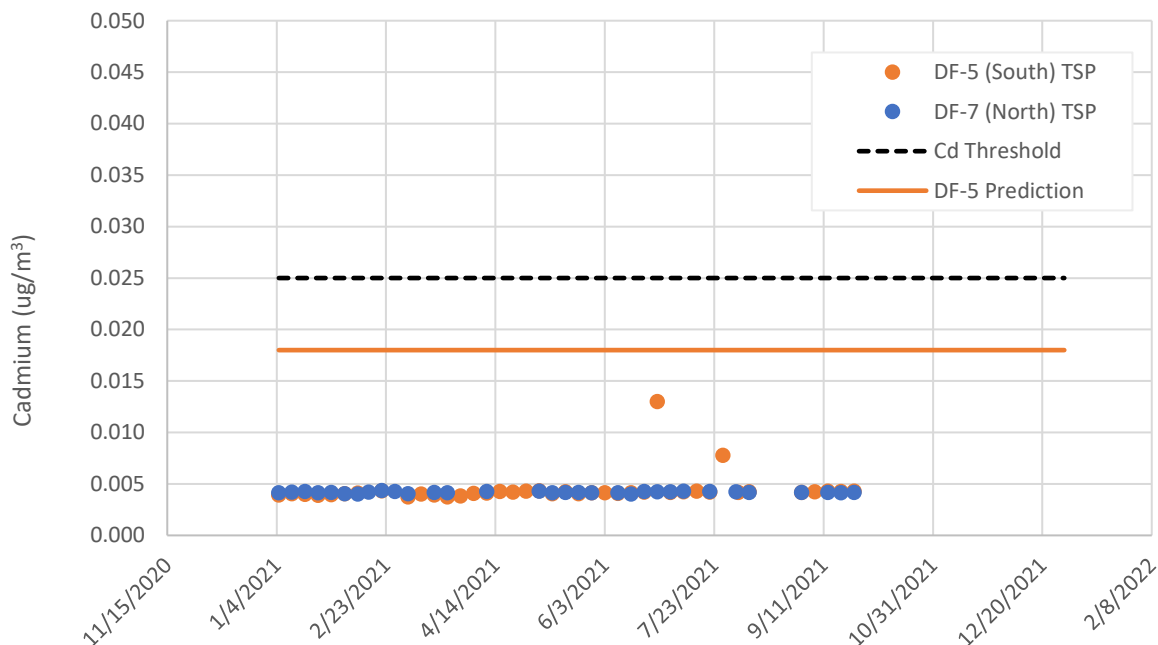


Figure 9. Measured concentrations of cadmium in 24-h TSP samples collected from stations DF-5 and DF-7 at the Meliadine site (points). Dashed line indicates the FEIS-selected health-based screening value, and solid lines indicate the FEIS maximum model-predicted value for station DF-5 (see discussion for DF-7).

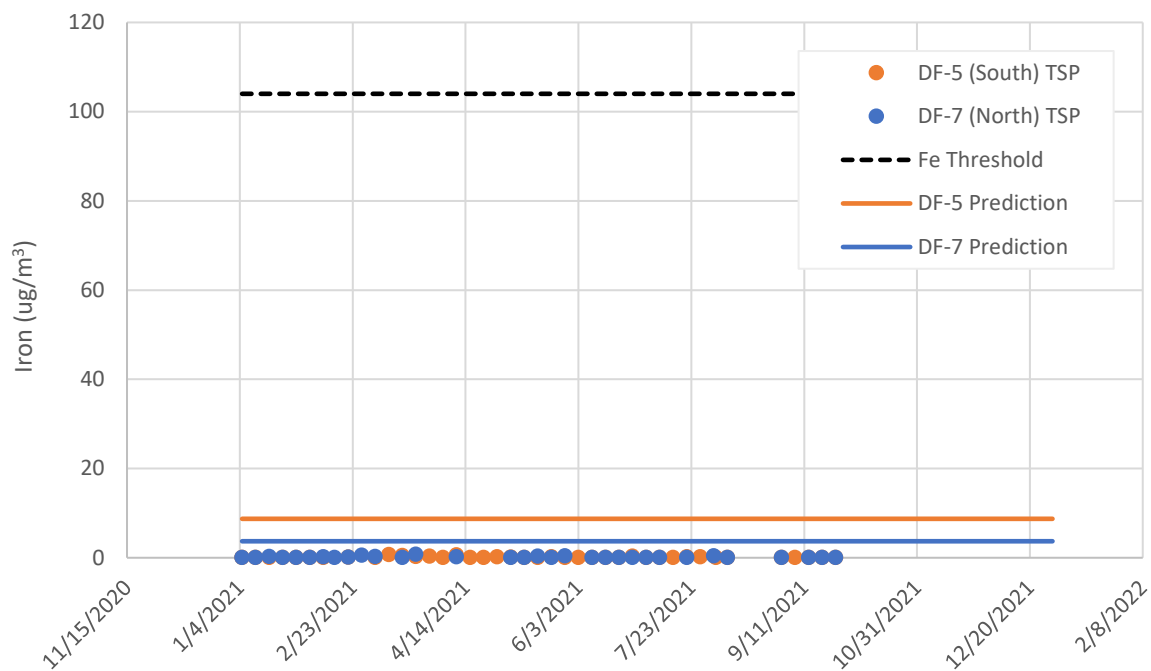


Figure 10. Measured concentrations of iron in 24-h TSP samples collected from stations DF-5 and DF-7 at the Meliadine site (points). Dashed line indicates the FEIS-selected health-based screening value, and solid lines indicate the FEIS maximum model-predicted value for each monitoring station.

3.2 DUSTFALL

3.2.1 Year-Round Sampling Locations

Results to date for the 2021 dustfall sampling program (30-day normalized rates of dustfall) for monitoring stations DF-2 – DF-7 are provided in Figures 11 – 17. Although the historical year-round stations at DF-1, DF-2, and DF-3 are no longer planned to be sampled year round, opportunistic sampling at DF-2 and DF-3 occurred throughout 2021 and results are included here. Values below the detection limit ($0.001 \text{ mg/cm}^2/30\text{d}$) are plotted as $\frac{1}{2}$ the limit. Samples are plotted by the collection start date. To provide context, the Alberta Ambient Air Quality Guidelines for recreational/residential and industrial/commercial areas of $0.53 \text{ mg/cm}^2/30 \text{ days}$ and $1.58 \text{ mg/cm}^2/30 \text{ days}$ for total dustfall are indicated.

As discussed in Section 2.2.2, it is anticipated that guidelines for recreational areas may regularly be exceeded in close proximity to the AWAR or mine site, and that guidelines for industrial areas may occasionally be exceeded.

In total, eight of the 60 samples collected to date in 2021 for these stations exceeded the recreational area guideline of $0.53 \text{ mg/cm}^2/30\text{d}$ for total dustfall. This included one to three samples each at DF-3, DF-4, DF-6, and DF-7. In four of the eight cases, the exceedance was marginal (max. $0.616 \text{ mg/cm}^2/30\text{d}$) and the result for fixed (non-combustible) dustfall was below the recreational area guideline.

No samples collected to date in 2021 have exceeded the industrial/commercial area guideline ($1.58 \text{ mg/cm}^2/30\text{d}$).

Historical results for total dustfall since 2012 are provided in Figure 18 for assessment of trends over time. Generally, an increase in measured dustfall rates has occurred since mid-2017 when the construction period began and site activity increased (as anticipated). However, exceedances of regulatory guidelines for recreational/residential areas are still considered very infrequent, occurring in <13% of total dustfall samples each year during the operations period. With a single marginal exceedance of the industrial area guideline recorded to date, these results indicate that best management practices in place for dust mitigation continue to be implemented effectively to control emissions.

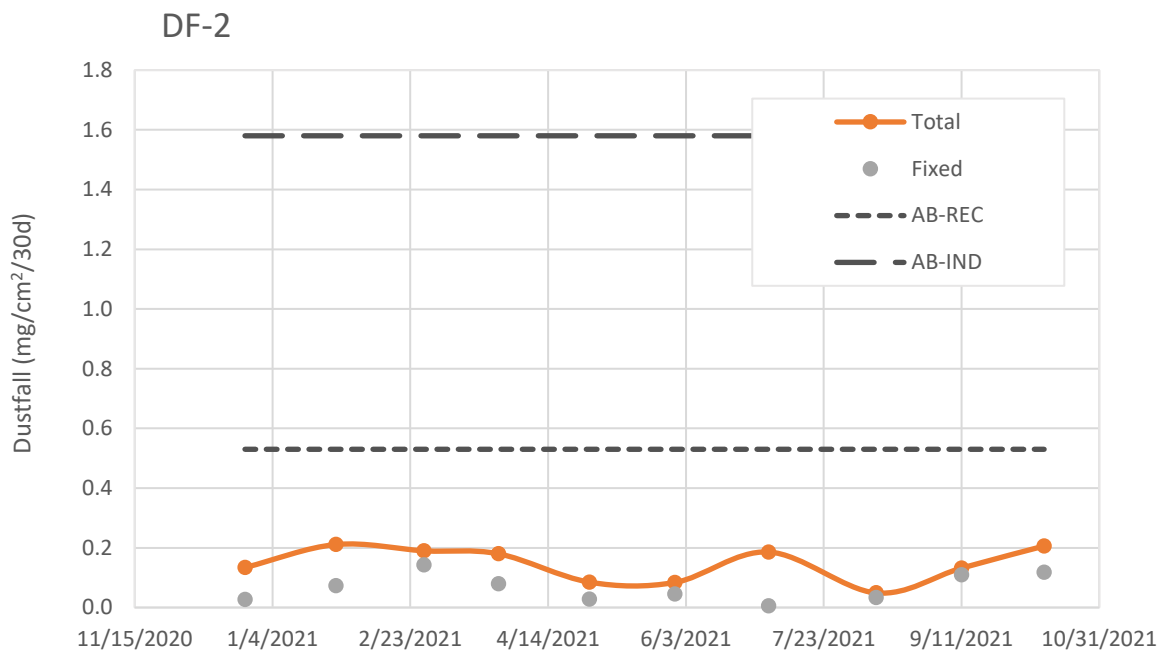


Figure 11. 30-day-normalized rates of total and fixed dustfall at sampling location DF-2 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

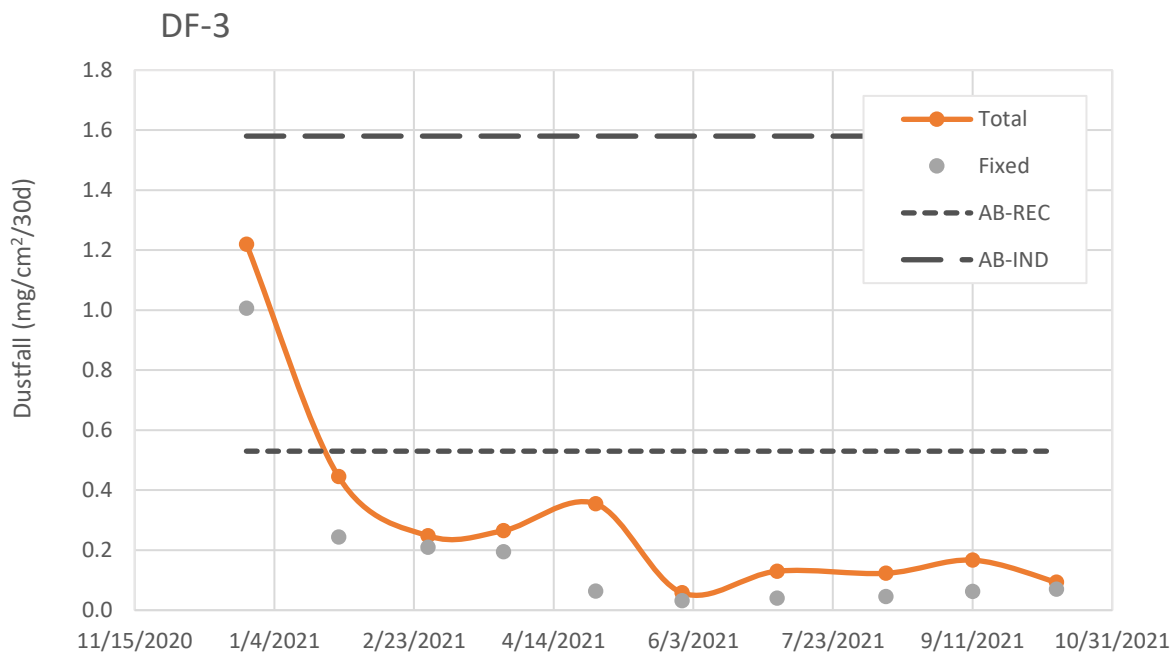


Figure 12. 30-day-normalized rates of total and fixed dustfall at sampling location DF-3 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

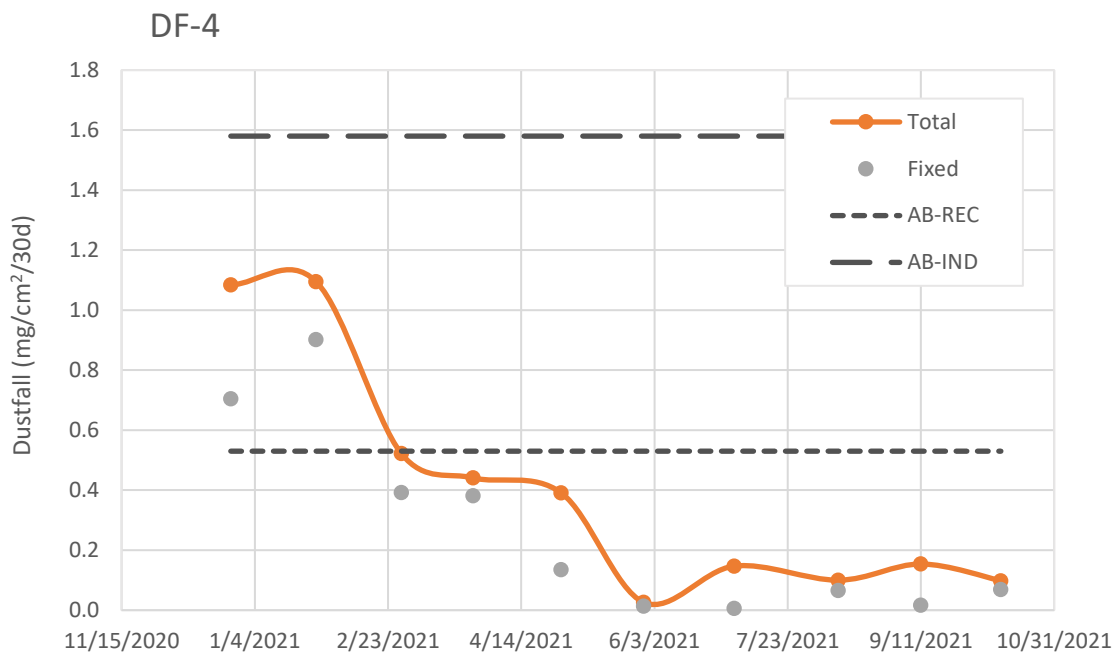


Figure 13. 30-day-normalized rates of total and fixed dustfall at sampling location DF-4 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

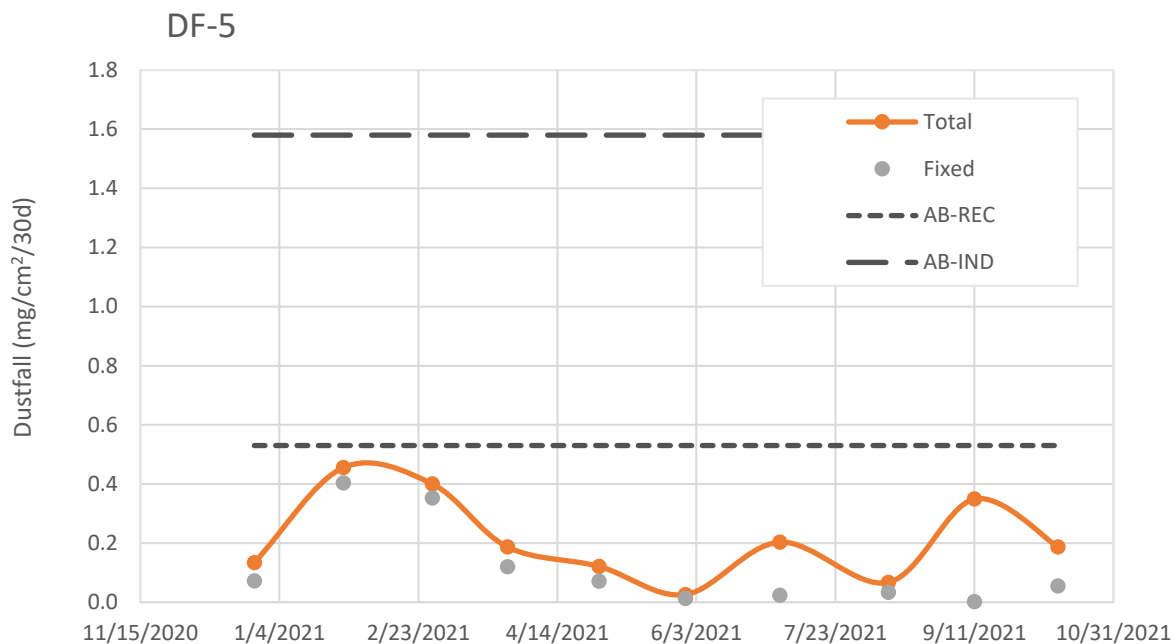


Figure 14. 30-day-normalized rates of total and fixed dustfall at sampling location DF-5 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

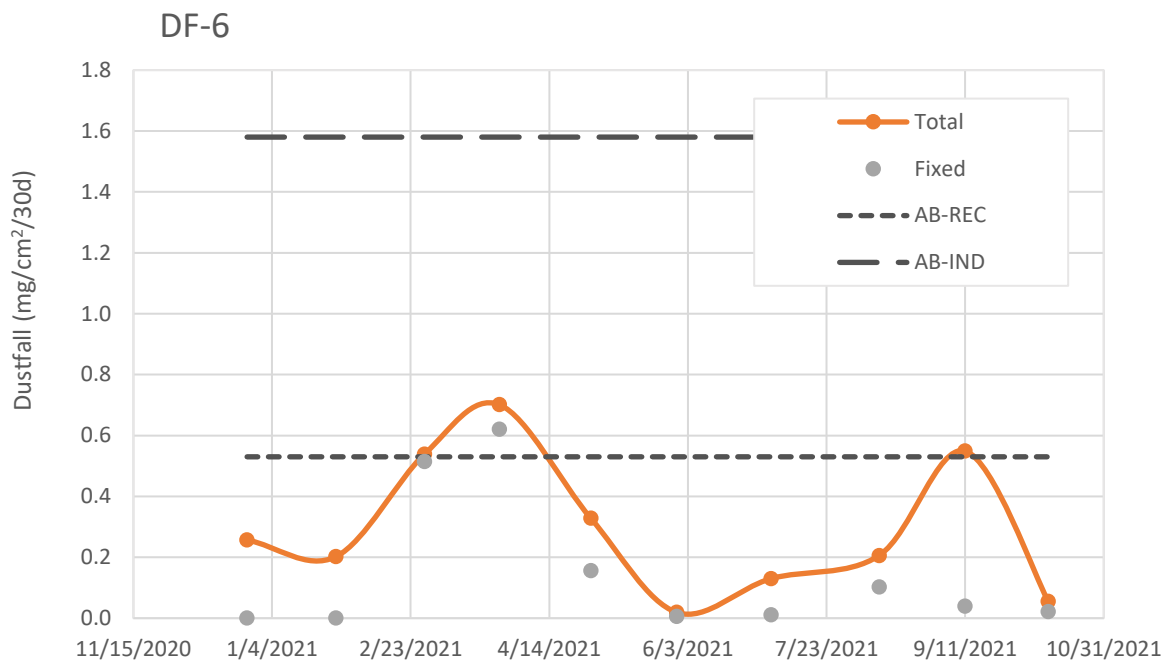


Figure 15. 30-day-normalized rates of total and fixed dustfall at sampling location DF-6 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

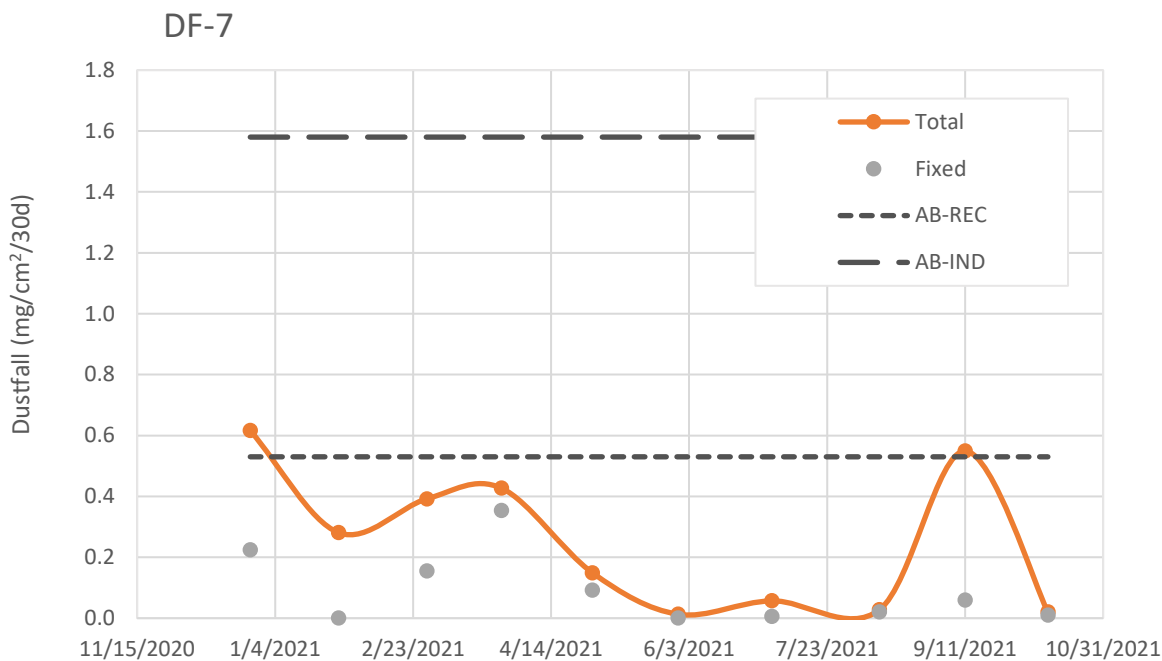


Figure 16. 30-day-normalized rates of total and fixed dustfall at sampling location DF-7 at the Meliadine site in 2021. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

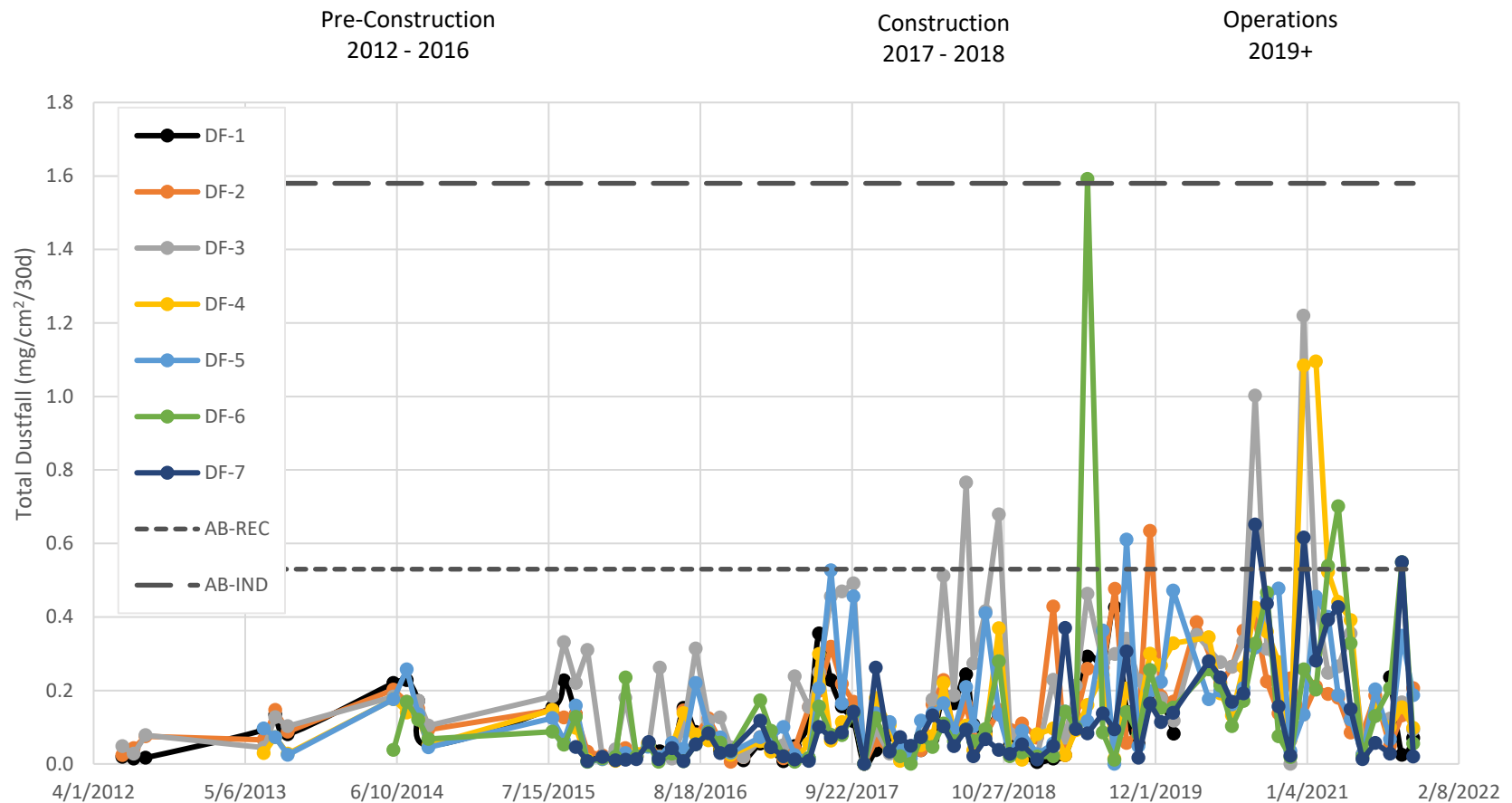


Figure 17. Historical 30-day-normalized rates of total dustfall at the Meliadine site. Symbols represent start date of sample collection. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

3.2.2 AWAR Dustfall Transects

Dustfall data collected at AWAR transects DF-1, DF-2, DF-3, and By-Pass Road transect DF-WT in 2021 are provided in Figures 18 – 21. While three rounds of sampling were completed for DF-2 and DF-3 (beginning in July, August, and September), sampling for transects DF-1 and DF-WT began in August due to a limited supply of sampling canisters onsite (see Section 7.2 for planned actions to eliminate this issue moving forward).

For station DF-1, all results were below the AB-Rec guideline.

For station DF-2, just one sample marginally exceeded the AB-Rec guideline, and this was collected at 25 m from the road but the fixed dustfall result was substantially lower, indicating an unusually high proportion of organic matter in the sample which is not representative of road-related dust.

For station DF-3, one sample collected at 300 m upwind marginally exceeded the regulatory guideline for recreational areas, but again the fixed dustfall result was substantially lower.

For station DF-WT along the Rankin Inlet By-Pass Road, a single total dustfall result collected at 120 m upwind exceeded the AB-Rec guideline. However, the fixed dustfall result was substantially lower, indicating an unusually high proportion of organic matter in the sample which is not representative of road-related dust. One sample collected at 1000 m downwind approached the guideline, and exceeded the baseline result, but this is considered a local reference station, outside of the influence of the By-Pass Road. Nevertheless, results for this station will be carefully reviewed in 2022.

Historical annual average dustfall data for all AWAR transects (DF-1 – DF-3) combined is shown in Figure 22. For each year, data are averaged across samplings transects and monitoring events (2 – 3 sequential 30-d periods). Despite similar or increased traffic rates¹, average dustfall results in 2021 were lower than observed previously (2019 and 2020). Though sampling later in the season (into October) may have reduced the 2021 average due to effects of snowcover, there were limited differences in average dustfall across sampling months for any given transect (Table 8) suggesting that dust suppression applied during round 1 (July – August) was nearly as effective in controlling dust as snow cover later in the season.

Overall, results of dustfall transect sampling indicate that mitigation measures to control dust along the AWAR were very effective in 2021, with rates of dustfall at or near the recreational area

¹ A review of traffic rates will be provided in Meliadine's 2021 Annual Report to the NIRB.

guideline throughout the summer season, even in very close proximity to the road (25 m).

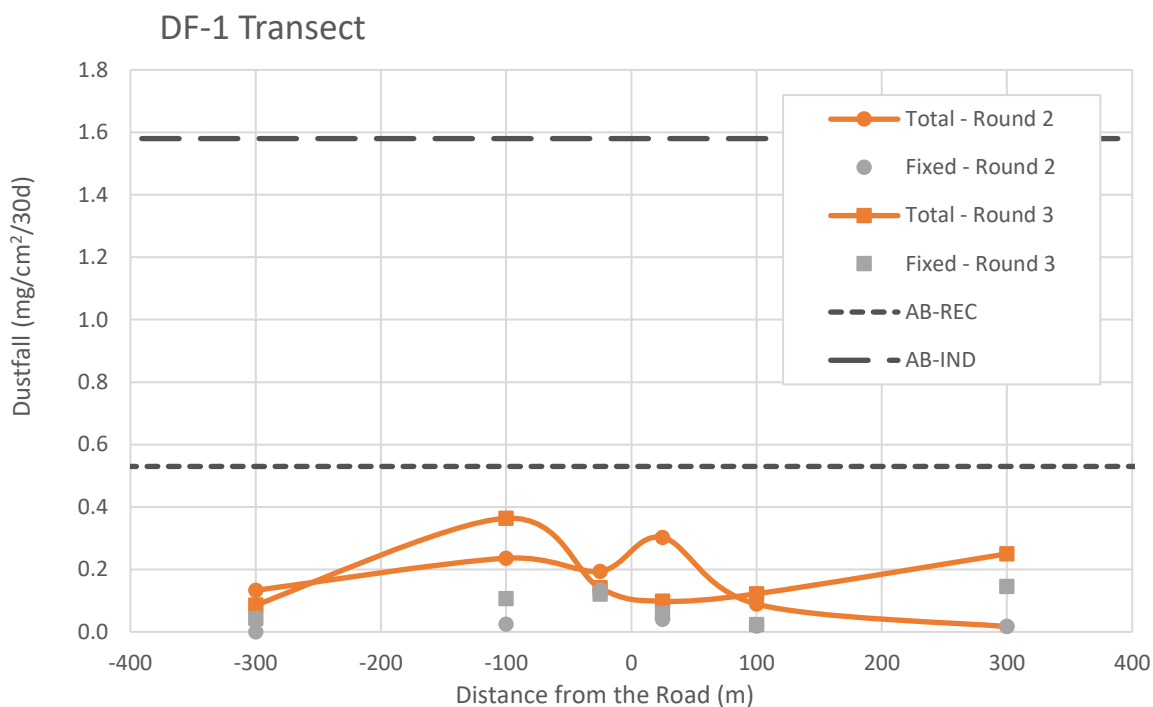


Figure 18. 30-day-normalized rates of total and fixed dustfall for transect DF-1 along the Meliadine AWAR in 2021. Negative values represent the west (upwind) side of the road. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas. Round 2 = August 11 – September 11; Round 3 = September 11 – October 11.

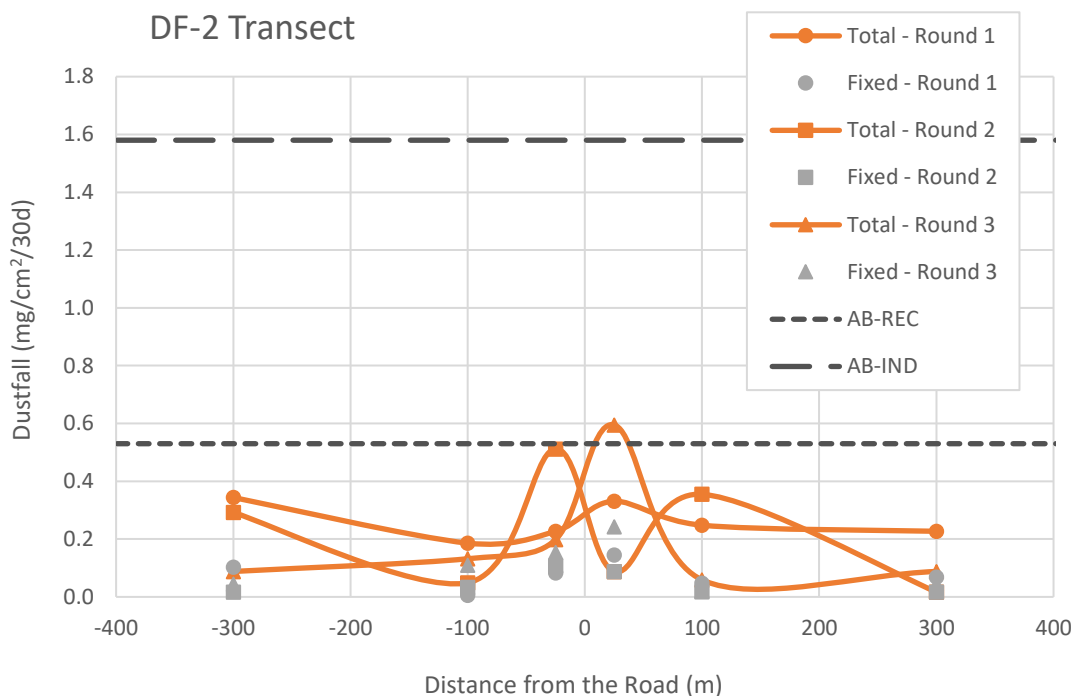


Figure 19. 30-day-normalized rates of total and fixed dustfall for transect DF-2 along the Meliadine AWAR in 2021. Negative values represent the west (upwind) side of the road. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas. Round 1 = July 10 – August 11; Round 2 = August 11 – September 11; Round 3 = September 11 – October 11.

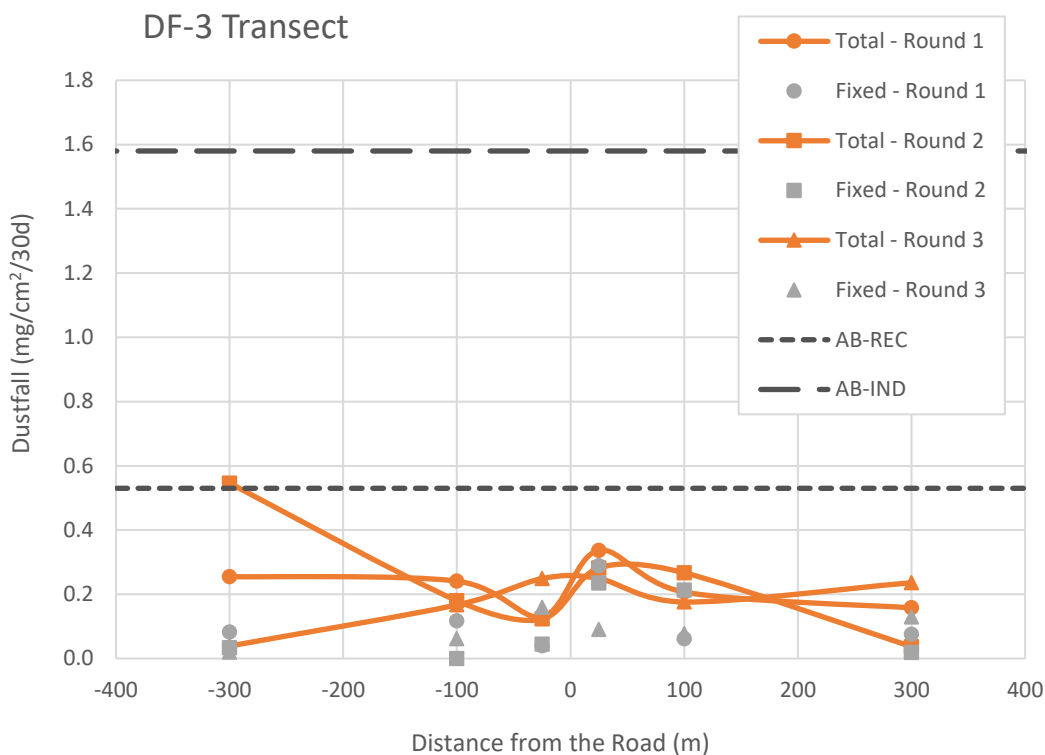


Figure 20. 30-day-normalized rates of total and fixed dustfall for transect DF-3 along the Meliadine AWAR in 2021. Negative values represent the west (upwind) side of the road. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas. Round 1 = July 10 – August 11; Round 2 = August 11 – September 11; Round 3 = September 11 – October 11.

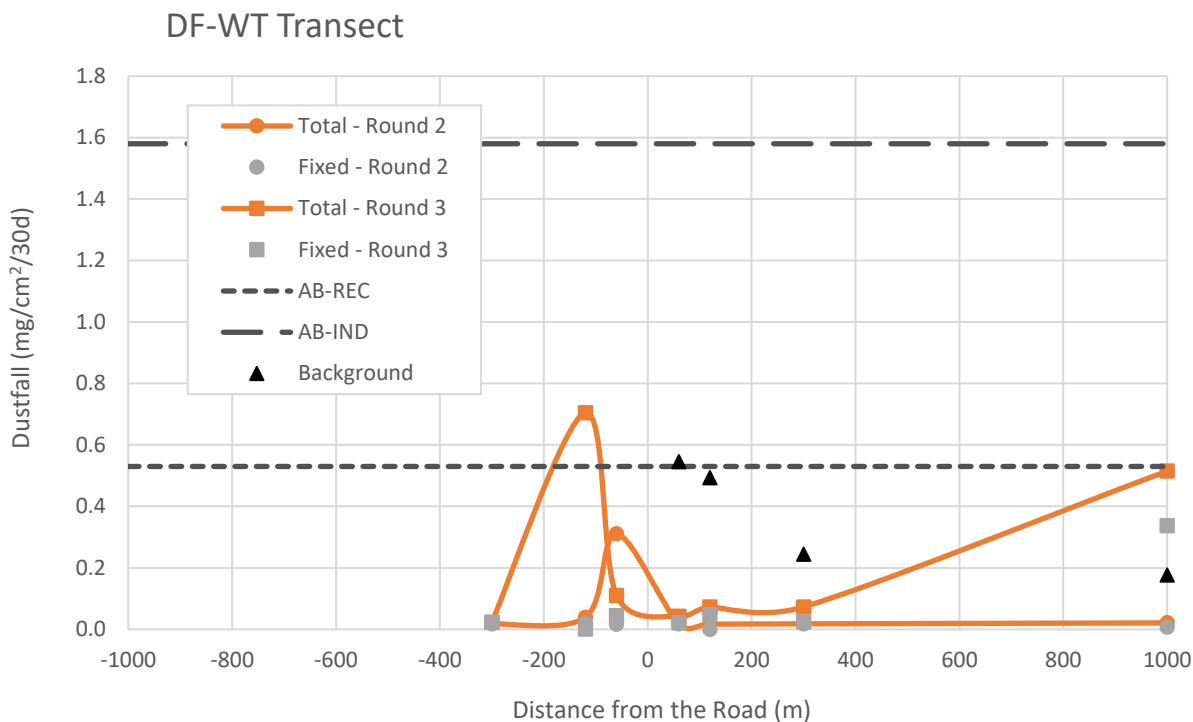


Figure 21. 30-day-normalized rates of total and fixed dustfall for transect DF-WT along the Meliadine By-pass Road in 2021. Negative values represent the west (upwind) side of the road. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas. Background values are maximum recorded total dustfall rates observed in July and August, 2017 and 2018, pre-construction. Round 2 = August 11 – September 11; Round 3 = September 11 – October 11.

Table 8. Average rates of measured total dustfall during each sampling period for Meliadine AWAR dustfall monitoring transects DF-1, DF-2 and DF-3.

Transect	Round 1 (Jul 10 – Aug 11)	Round 2 (Aug 11 – Sept 11)	Round 3 (Sept 11 – Oct 11)
	mg/cm ² /30d	mg/cm ² /30d	mg/cm ² /30d
DF-1	-	0.16	0.18
DF-2	0.26	0.22	0.19
DF-3	0.22	0.24	0.19

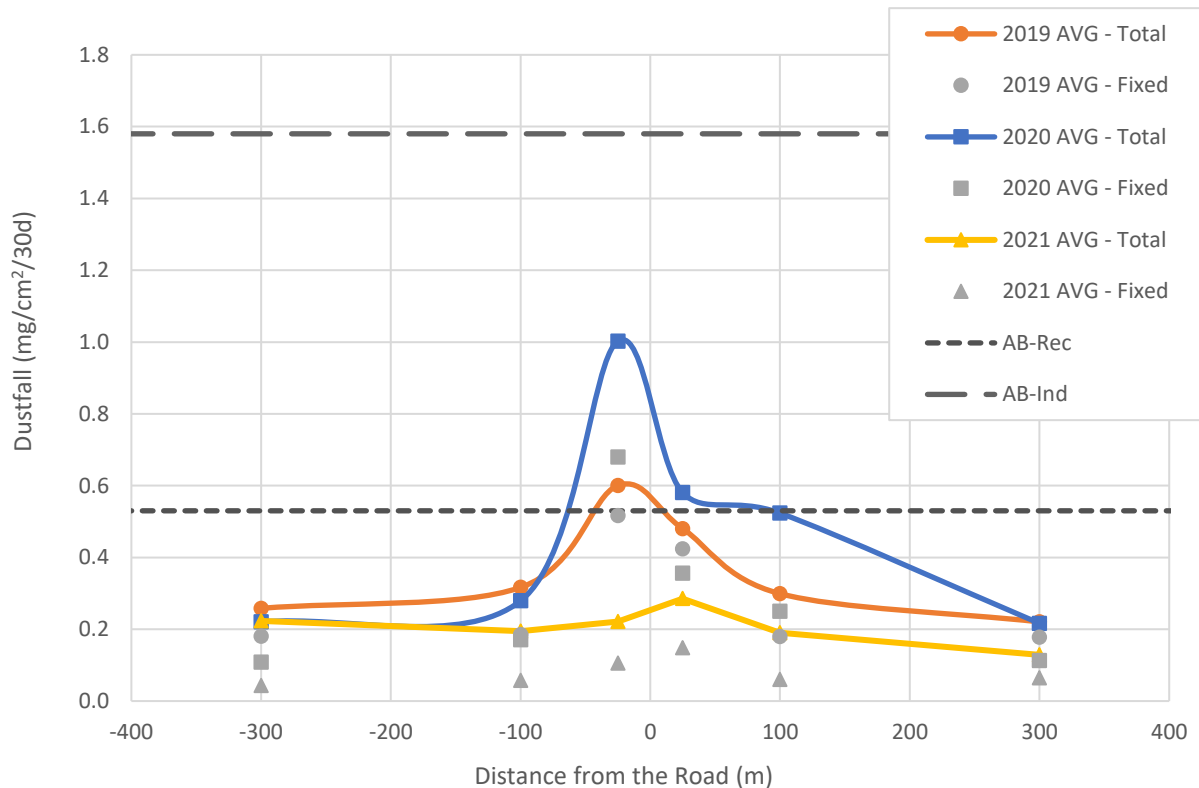


Figure 22. Average 30-day-normalized rates of total and fixed dustfall for summertime sampling transects DF-1, DF-2, and DF-3 along the Meliadine AWAR. Symbols represent average measured dustfall across transects and sampling dates (2-3 consecutive 30-d periods) within each year. Negative values represent the west (upwind) side of the road. Dashed lines indicate the Alberta Ambient Air Quality Guideline for recreational and industrial areas.

3.3 NO₂ AND SO₂

Monthly-average NO₂ trends in 2021 are provided in Figure 23. Samples are plotted by the collection start date. Concentrations of NO₂ vary between non-detect (<0.1) and 2.1 ppb.

Annual arithmetic mean concentrations were calculated for each station from the monthly average values. The annual mean concentrations of NO₂ were 0.60 and 0.87 ppb for DF-5 and DF-7, respectively (December 26, 2020 – December 11, 2021). These are both well below the Government of Nunavut Ambient Air Quality Standard of 32 ppb for the annual average. These values are also lower than maximum concentrations predicted in the FEIS, adjusted for assumed background concentrations (23.4 ppb and 12.2 ppb for DF-5 and DF-7, respectively).

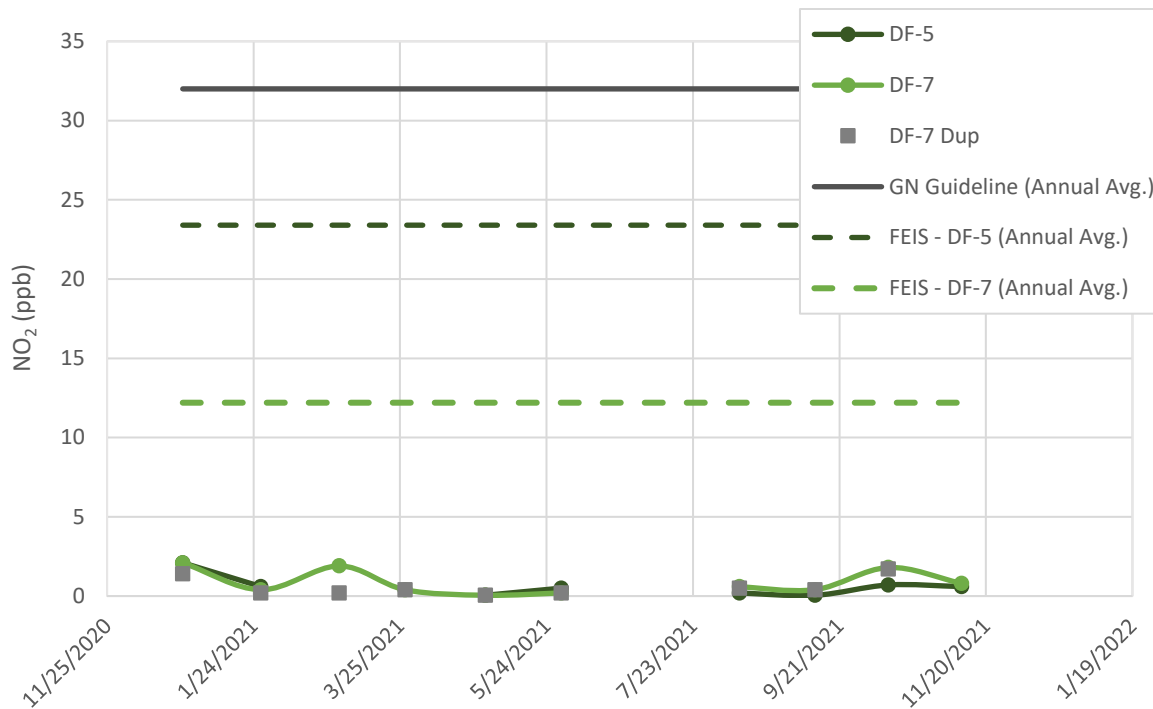


Figure 23. Monthly average concentration of NO₂ at DF-5 and DF-7. Symbols represent the collection start date. Lines indicate GN standard and FEIS predictions for the annual average which are shown for reference, but not apply to individual monthly samples.

Historical results (collected since 2017) are presented in Figure 24. Results remain well below maximum predicted values and no clear trends between sampling stations or over time are evident.

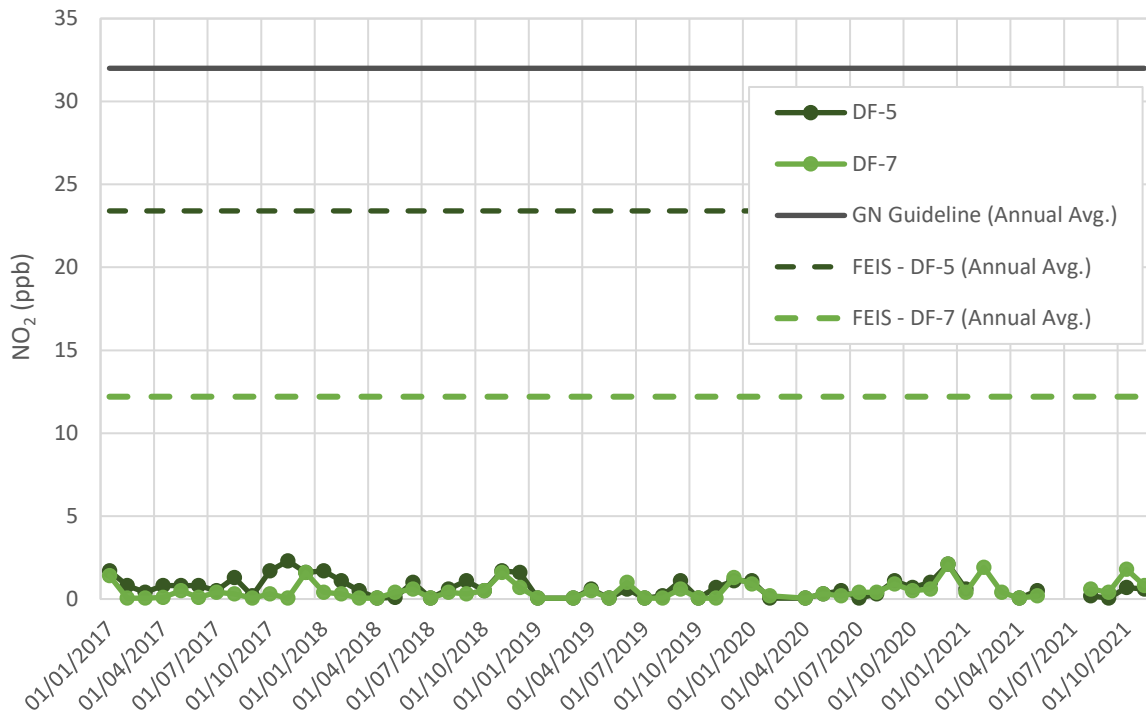


Figure 24. Historical measured monthly average concentration of NO₂ at DF-5 and DF-7. The GN guideline and FEIS predictions for the annual average are indicated for reference but do not apply to individual monthly samples.

Monthly-average SO₂ trends in 2021 are provided in Figure 25. Samples are referred to by the collection start date. Concentrations of SO₂ were non-detect (<0.1 ppb) in the majority of samples (13 of 22), with a maximum measured value of 0.7 ppb (May 30).

Annual arithmetic mean concentrations were calculated for each station from the monthly average values. A value of 0.05 ppb was used for samples below the detection limit (0.1 ppb). The annual mean concentrations of SO₂ were 0.16 and 0.13 ppb for DF-5 and DF-7, respectively (December 26, 2020 – December 11, 2021). These are both less than the Government of Nunavut Ambient Air Quality Standard of 11 ppb for the annual average, and FEIS maximum predicted values of 0.3 ppb and 0.2 ppb for DF-5 and DF-7, respectively.

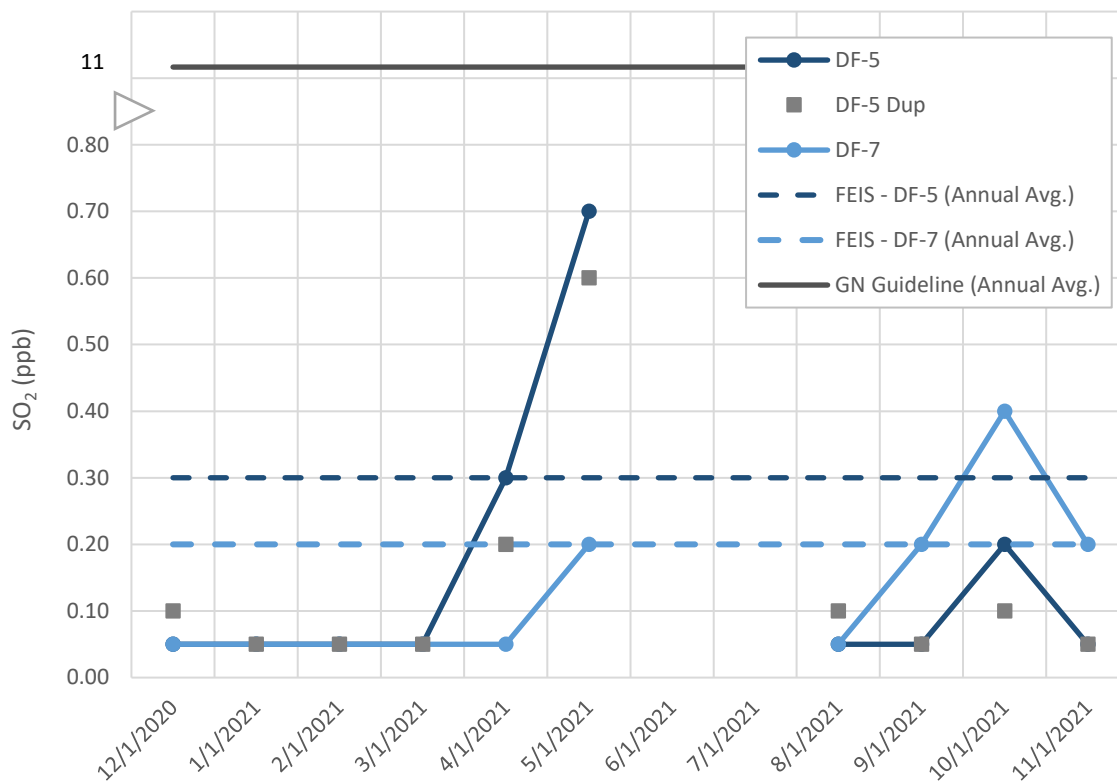


Figure 25. Monthly average concentration of SO₂ at DF-5 and DF-7. Symbols represent the collection start date. The GN guideline and FEIS predictions for the annual average are indicated, for reference, but do not apply to individual monthly samples.

Historical results collected since 2017 are presented in Figure 26. No clear trends between sampling stations or over time are evident.

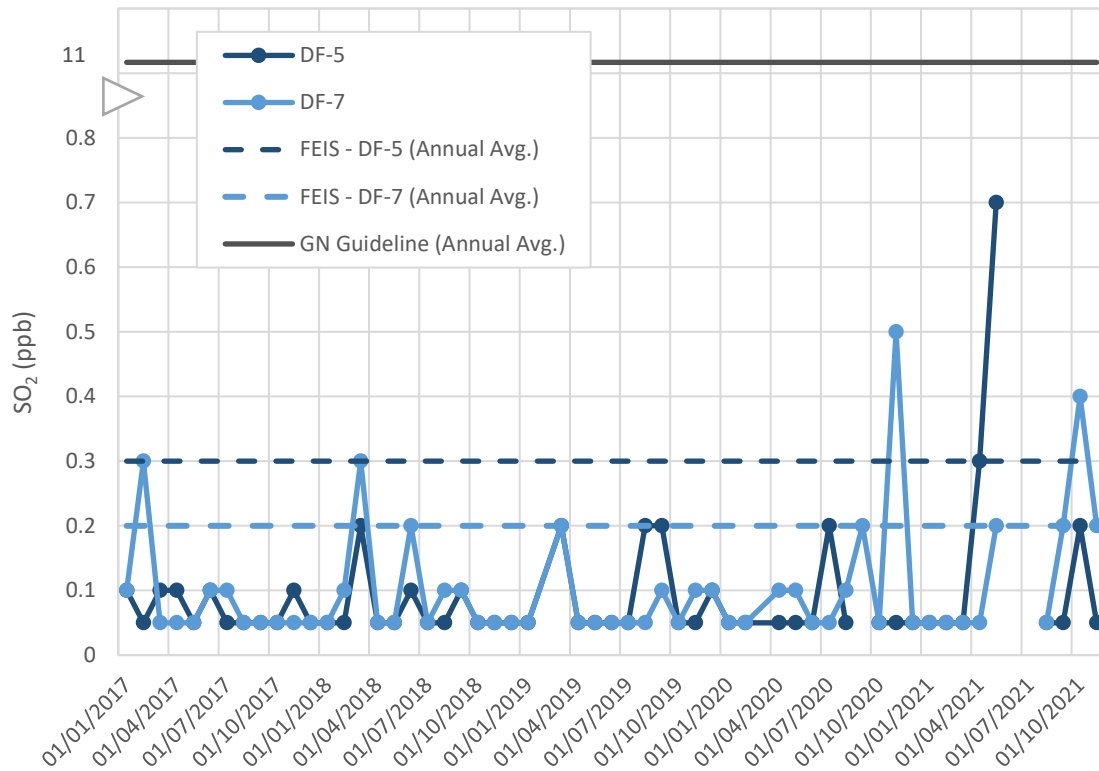


Figure 26. Historical measured monthly average concentration of SO₂ at DF-5 and DF-7. Dashed line indicates GN standard for the annual average, for reference but do not apply to individual monthly samples.

4 METEOROLOGICAL MONITORING

As described in the Air Quality Monitoring Plan, a permanent weather station was installed at the Meliadine site, and daily averages for the following parameters in 2021 are provided in Appendix B:

- wind speed;
- wind direction;
- temperature;
- solar radiation
- precipitation

- relative humidity

5 INCINERATOR STACK TESTING

Incinerator stack testing was performed in October 2021 and results compared to the GN's Environmental Guideline for the Burning and Incineration of Solid Waste (2012). This report is provided under separate cover, as an appendix of the 2021 Annual Report to the NIRB.

During the assessment, three tests are performed and average results are compared to the relevant GN guidelines for total dioxins and furans and mercury.

Results indicated that the average measured concentration of mercury ($0.18 \mu\text{g}/\text{Rm}^3$) was below the GN standard of $20 \mu\text{g}/\text{Rm}^3$ and the average measured concentration of total dioxins and furans ($70 \text{ pg TEQ} / \text{Rm}^3$) was also below the GN standard ($80 \text{ pg TEQ} / \text{Rm}^3$).

6 GREENHOUSE GAS EMISSIONS

Agnico Eagle 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.

In the Meliadine Project FEIS, total GHG emissions from the mine site were conservatively estimated to be not more than 304,000 tonnes/yr CO_2e . Estimated GHG emissions from the additional marine operations at Rankin Inlet were estimated at approximately 13,000 tonnes/yr CO_2e .

Calculated emissions for the Meliadine site (including Rankin Inlet operations) were last reported on June 1, 2021, for the 2020 reporting period. Total emissions for 2020 were calculated at 123,357 tonnes CO_2e .

7 MITIGATIVE AND ADAPTIVE STRATEGIES

7.1 MITIGATION

Fugitive dust abatement measures were identified in the FEIS for the operations phase as follows, and are being implemented. Since monitoring results in 2021 to date were within applicable air quality criteria and FEIS predictions (with the exception of a single outlier TSP sample), no additional mitigative measures are planned.

- Best management practices to control fugitive particulate emissions from haul roads and material handling, and the AWAR (see Road Management Plan for details).

- In 2021, dust suppressant application and road watering were conducted as described in Section 7.1.1
- Sources of particulate emissions at the processing facility are controlled through the use of baghouses.
- Enclosures are used to reduce fugitive emissions at the processing facility.
- Exhaust emissions from non-road vehicles are managed through purchasing equipment that meet Tier 3 emission standards.
 - New purchases are Tier 4
- Exhaust emissions from non-road vehicles are managed through regular and routine maintenance of vehicles.
- SO₂ emissions from non-road vehicles and stationary equipment will be reduced through the use of low sulphur diesel fuel (<15 ppm).
 - Actual fuel in use in ultra-low sulphur fuel (<8 ppm)

7.1.1 Dust Suppressant Application

In 2021, Agnico Eagle continued to work towards improving record-keeping for dust suppressant application and road watering activities. The complete details (dates, time, locations, quantities) are provided in Appendix A.

In general, road watering was conducted to control dust on site haul roads and at the crusher. Road watering occurred at a frequency of every 1 – 10 days between June 19 and August 8, and then again on two occasions in September, with a total of 522 m³ applied. Watering of stockpiles at the crusher occurred between May 15 and September 6, with a total of 1268.5 m³ applied. In addition, watering of the Waste Rock Storage Facility occurred on one occasion from September 17-18, with a total of 36 m³ applied.

Applications of calcium chloride occurred primarily along the AWAR but occasionally onsite as well. Multiple applications (2 – 3 per month) were completed along the length of the AWAR and Bypass Road (except in locations where waterbodies are within 30 m of the road) between June 3 and August 27. A follow up application also occurred in November. A total of 180 bags of CaCl₂ product were applied in 2021 (950 kg/bag).

7.2 MONITORING

Based on monitoring results, no management actions or modifications to the monitoring plan were identified in the 2020 Air Quality Monitoring Report to improve the program.

The following actions are planned to be implemented in 2022:

- To reduce instances of data loss due to lost or mislabeled samples, Agnico Eagle will work to improve internal tracking procedures for sample collection and shipping, and procedures for confirming sample receipt and analysis requests at the laboratory.
- Efforts will be made to increase the use of trip/travel blanks for all sample types to one per shipment.

- Dustfall canisters for summer season transect monitoring will be ordered further in advance, with the intention of collecting two sets of 30-d samples, generally throughout July and August (or when dust generation is expected to peak), in accordance with the Plan.

Monitoring will continue according to the Operations phase schedule, as described in the Air Quality Monitoring Plan (Version 2, April, 2020). The opportunistic year-round sampling that has occurred at individual stations DF-1, DF-2, and DF-3 is planned to cease, to be replaced by summer-only full transect sampling, as described in the Plan.

8 REFERENCES

Alberta Environment and Parks, 2017. Alberta Ambient Air Quality Objectives and Guidelines Summary. Air Policy Branch, Alberta Environment and Parks.

British Columbia (BC) Ministry of the Environment, 2020. British Columbia Ambient Air Quality Objectives. Provincial Air Quality Objective Information Sheet. February 28, 2020.

Golder (Golder Associates), 2014. Final Environmental Impact Statement – Meliadine Gold Project, Nunavut. Volume 5.0 Atmospheric Environment and Impact Assessment. April, 2014.

Government of Nunavut (GN), Department of Environment. 2011. Environmental Guideline for Ambient Air Quality.

APPENDIX A: RECORD OF DUST SUPPRESSION

Appendix A Table 1: Record of road and stockpile watering at the Meliadine site in 2021.

Date	Time Started	Time Ended	Location	Volume (m ³)
<i>Road Watering</i>				
7/31/21	22:00	?	AWAR KM9 to KM16	18
7/19/21	8:30	21:00	Haul Road	18
7/19/21	21:00	21:30	Tiri 1 to WRSF1 Road	18
7/22/21	?	?	Haul Road	108
7/22/21	?	?	Tiri 1 to WRSF1 Road	90
8/5/21	?	?	Tiri1 to OP Road	72
8/6/21	14:25	15:00	Haul Road	18
8/6/21	14:30	15:00	Tiri 1 to OP2	18
8/7/21	?	?	Haul Road	36
8/7/21	13:35	14:00	OP2 Haul Road	18
9/5/21	7:15	7:45	Tiri 1 to WRSF1 Road	18
9/6/21	?	?	Tiri1 Road	72
9/16/21	?	?	Tiri1 Road	18
<i>Stockpile Watering</i>				
2021-05-15 to 2021-07-20	?	?	KCG Crusher	1116
8/16/21	6:00	18:00	SP4 Crusher	17.5
8/20/21	?	?	SP4 Crusher	18
8/18/21	6:30	18:00	KCG Crusher	36
8/19/21	?	?	KCG Crusher	27
8/22/21	?	?	KCG Crusher	36
9/6/21	?	?	KCG Crusher	18
<i>Waste Rock Storage Facility</i>				
9/17/21	?	?	WRSF1	18
9/18/21	?	?	WRSF1	18

Appendix A Table 2: Record of dust suppressant application (CaCl₂ product) at the Meliadine site in 2021.

Date	Time Started	Time Ended	Location	Starting Km	Ending Km	CaCl ₂ Bags (950 kg)
5/20/21	8:00	14:00	Site	Site haul road	Site TSF road	10
6/3/21	7:00	9:30	AWAR	KM30	KM20	10
6/3/21	11:15	13:30	AWAR	KM29	KM10	10

Date	Time Started	Time Ended	Location	Starting Km	Ending Km	CaCl ₂ Bags (950 kg)
6/3/21	14:30	17:00	AWAR	KM9	KM1	10
6/6/21			Site	Site haul road		2
6/13/21	19:00	23:30	Site	Dyno road	mag road	2
6/13/21	19:00	23:30	AWAR	KM23	KM13	8
6/13/21	19:00	23:30	AWAR	By pass KM6	By-pass KM0	6
6/18/21	1:30	2:00	Site	TSF road	TSF road	4
6/19/21	1:00	1:30	Site	Crusher ramp	crusher ramp	1
6/20/21	21:00	21:30	Site	Crusher ramp	crusher ramp	1
7/10/21	10:00	15:00	AWAR	KM30	Itivia	12
7/11/21	9:00	14:00	Site	Mine site road	Mine site road	14
7/13/21	5:30	8:35	AWAR	KM8	KM13	5
7/13/21	8:30	9:15	AWAR	KM5	KM4	1
7/16/21	5:30	6:00	Site	Camp		0.33
7/16/21	6:00	6:30	Site	Service Road	Explo Camp	0.66
7/16/21	6:30	9:00	AWAR	KM24	KM30	6
7/16/21	9:00	9:30	AWAR	KM10	KM14	4
7/16/21	9:30	10:30	Site			1
7/17/21	5:30	8:00	Site	Crusher ramp	Paste plant ramp	2
7/20/21	11:30	13:00	AWAR	KM5	No stop zone	3
7/20/21	13:00	16:00	AWAR	KM5	KM30	6
7/31/21	19:00	23:00	AWAR	KM16	KM8	10
8/08/21	20:30	22:00	AWAR	KM25	KM19	5
8/08/21	22:00	22:20	AWAR	KM8	KM7	2
8/08/21	22:50	23:00	Site	TSF road	TSF road	1
8/15/21	18:00	0:30	AWAR	KM21	Itivia	15
8/27/21	18:00	20:00	AWAR	KM30	KM27.5	5
11/02/21	5:30	15:00	AWAR	Itivia	KM30	19
11/02/21	15:00	16:30	Site	All roads	All roads	4

APPENDIX B: DAILY AVERAGE WEATHER DATA

Appendix B Table 1: Daily average temperature, relative humidity (RH), wind speed, wind direction, solar radiation, and precipitation as measured by the Meliadine onsite weather station.

*Precipitation measurements may erroneously read as negative under high wind conditions or due to evaporation of the instrument's antifreeze.

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-01-01	-25.6	83	11.2	298	1.9	-0.14
2021-01-02	-30.0	71	8.9	277	2.3	-0.13
2021-01-03	-36.0	67	4.3	276	2.0	0.09
2021-01-04	-39.1	59	1.4	276	1.9	0.32
2021-01-05	-34.3	76	0.6	276	2.4	-0.18
2021-01-06	-27.5	77	3.5	276	2.0	-0.22
2021-01-07	-26.0	84	9.9	193	2.2	4.08
2021-01-08	-12.6	93	20.4	184	2.7	-0.08
2021-01-09	-17.2	92	22.6	307	4.0	-0.28
2021-01-10	-24.8	85	8.9	293	3.3	0.51
2021-01-11	-25.1	84	3.6	30	3.6	-0.13
2021-01-12	-17.9	87	0.0	131	2.0	0.22
2021-01-13	-16.3	88	0.0	144	2.6	0.18
2021-01-14	-13.0	92	0.1	174	2.9	0.26
2021-01-15	-24.0	86	0.0	340	2.4	-0.01
2021-01-16	-26.4	78	0.0	326	4.3	0.02
2021-01-17	-23.3	82	0.0	342	3.7	0.01
2021-01-18	-27.1	76	0.0	345	3.9	-0.01
2021-01-19	-26.4	78	0.1	349	3.2	-0.03
2021-01-20	-32.2	70	0.0	343	5.7	0.69
2021-01-21	-31.0	74	0.0	249	4.3	-0.40
2021-01-22	-25.1	81	0.0	154	3.6	0.07
2021-01-23	-29.5	72	0.1	338	5.7	0.38
2021-01-24	-27.5	82	0.0	138	3.1	-0.31
2021-01-25	-21.5	86	0.1	27	2.7	0.32
2021-01-26	-18.4	87	5.6	64	4.1	-0.08
2021-01-27	-17.5	88	4.0	138	8.3	0.06
2021-01-28	-21.6	86	0.0	0	7.4	0.24
2021-01-29	-21.8	86	1.8	206	7.4	1.47
2021-01-30	-22.1	86	8.4	162	8.5	2.70
2021-01-31	-16.1	89	10.9	233	9.2	-0.03
2021-02-01	-26.4	86	10.7	352	8.4	-0.10
2021-02-02	-30.0	72	8.9	12	11.7	0.25
2021-02-03	-31.4	71	7.4	4	7.9	0.35

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-02-04	-33.5	67	13.5	20	9.1	-0.03
2021-02-05	-35.9	65	15.4	13	8.4	-0.06
2021-02-06	-33.1	67	32.2	353	11.3	-0.17
2021-02-07	-33.2	75	33.7	350	14.6	0.01
2021-02-08	-12.2	96	22.8	51	13.4	0.21
2021-02-09	-19.1	96	18.1	151	21.9	0.15
2021-02-10	-27.6	78	11.9	128	21.5	0.38
2021-02-11	-21.1	91	24.8	26	19.9	0.04
2021-02-12	-16.4	90	9.5	15	22.9	0.13
2021-02-13	-27.1	83	12.6	318	21.4	-0.03
2021-02-14	-27.6	77	17.6	349	24.6	-0.01
2021-02-15	-23.5	82	23.5	341	26.1	-0.08
2021-02-16	-26.6	77	12.5	316	19.5	0.07
2021-02-17	-25.7	80	11.9	255	22.4	0.05
2021-02-18	-33.2	71	15.7	328	22.5	0.03
2021-02-19	-32.8	69	13.2	243	20.5	0.42
2021-02-20	-25.4	85	7.9	167	30.6	0.72
2021-02-21	-17.0	89	12.4	202	20.6	0.24
2021-02-22	-20.8	86	12.6	330	27.6	0.13
2021-02-23	-28.0	78	23.6	305	29.3	0.08
2021-02-24	-31.0	70	35.1	342	39.0	-0.22
2021-02-25	-33.7	66	11.7	323	33.3	1.03
2021-02-26	-32.8	78	30.1	261	45.5	0.03
2021-02-27	-38.3	61	32.5	331	46.1	0.07
2021-02-28	-37.0	63	30.7	314	43.1	-0.11
2021-02-29	-33.2	70	23.0	302	37.2	-0.41
2021-03-01	-27.9	75	12.6	331	51.4	0.36
2021-03-02	-33.4	74	5.2	353	33.8	1.67
2021-03-03	-21.1	86	15.8	171	50.5	1.21
2021-03-04	-19.4	88	14.6	131	53.9	-0.01
2021-03-05	-31.2	76	14.1	9	48.5	5.61
2021-03-06	-21.7	89	21.9	162	60.1	0.25
2021-03-07	-12.0	94	21.9	194	50.3	0.00
2021-03-08	-19.2	88	29.2	327	85.4	0.08
2021-03-09	-27.3	83	24.4	298	98.5	0.01
2021-03-10	-29.8	71	20.3	307	100.8	-0.09
2021-03-11	-31.5	70	21.1	335	106.0	0.07
2021-03-12	-31.9	69	12.8	338	108.1	-0.01
2021-03-13	-30.2	71	27.0	352	109.5	-0.04

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-03-14	-27.5	75	17.2	359	107.6	0.36
2021-03-15	-21.1	87	13.4	125	99.3	1.28
2021-03-16	-20.8	87	17.7	307	112.9	0.24
2021-03-17	-26.6	75	19.3	330	125.5	1.42
2021-03-18	-20.1	90	14.4	167	93.3	-0.13
2021-03-19	-15.4	90	9.8	114	121.7	2.43
2021-03-20	-15.7	90	28.1	129	91.6	0.00
2021-03-21	-14.4	90	22.9	77	118.6	0.11
2021-03-22	-22.8	85	36.2	62	114.3	0.06
2021-03-23	-29.8	70	27.6	345	144.7	-0.15
2021-03-24	-31.2	68	15.6	349	151.7	3.80
2021-03-25	-28.7	77	7.3	27	156.8	1.06
2021-03-26	-18.2	87	18.5	164	125.1	2.08
2021-03-27	-18.6	88	17.2	39	128.7	0.07
2021-03-28	-27.3	74	30.7	346	152.8	-0.08
2021-03-29	-30.1	70	20.3	348	168.3	-0.12
2021-03-30	-31.7	69	11.5	340	176.0	0.02
2021-03-31	-30.0	73	3.4	112	165.3	0.09
2021-04-01	-26.5	79	10.5	108	168.6	1.12
2021-04-02	-16.4	94	52.0	115	106.2	2.41
2021-04-03	-12.7	97	25.9	160	131.1	-0.10
2021-04-04	-17.6	88	25.2	352	167.6	1.65
2021-04-05	-16.7	92	12.5	134	142.8	0.08
2021-04-06	-9.6	92	25.9	83	129.9	0.11
2021-04-07	-11.6	92	27.4	3	191.7	0.73
2021-04-08	-15.3	93	19.0	113	165.2	2.48
2021-04-09	-6.6	97	15.4	168	126.0	0.53
2021-04-10	-10.3	97	25.5	5	141.3	0.04
2021-04-11	-20.4	85	29.2	345	208.9	-0.08
2021-04-12	-22.1	85	17.8	350	218.0	0.02
2021-04-13	-21.1	87	9.5	329	215.3	-0.11
2021-04-14	-11.9	90	17.3	192	191.8	-0.07
2021-04-15	-9.8	94	11.2	204	147.8	-0.11
2021-04-16	-9.2	94	11.0	15	188.6	0.34
2021-04-17	-15.7	93	19.1	4	235.9	-0.09
2021-04-18	-17.6	87	31.0	357	223.9	-0.13
2021-04-19	-19.7	89	15.0	0	243.0	0.28
2021-04-20	-13.9	95	7.5	231	171.9	0.06
2021-04-21	-10.1	95	6.1	298	160.3	-0.08

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-04-22	-13.8	95	25.4	356	243.5	0.08
2021-04-23	-18.4	88	15.0	322	201.6	-0.06
2021-04-24	-18.9	89	10.6	242	249.8	0.10
2021-04-25	-16.5	89	16.9	148	246.7	0.24
2021-04-26	-13.7	89	21.8	119	194.1	12.00
2021-04-27	-8.5	98	35.3	135	152.5	6.05
2021-04-28	-11.8	95	25.8	195	240.3	3.42
2021-04-29	-11.3	94	11.6	164	233.8	0.09
2021-04-30	-12.4	92	20.1	39	271.4	0.81
2021-05-01	-5.8	100	20.3	29	204.4	0.64
2021-05-02	-0.2	100	15.6	62	212.8	0.37
2021-05-03	-0.1	100	8.7	106	208.4	1.85
2021-05-04	0.3	100	13.0	94	165.4	-0.04
2021-05-05	-1.4	100	16.7	63	160.2	-0.12
2021-05-06	-3.6	100	18.3	32	138.9	0.06
2021-05-07	-4.2	99	19.5	22	281.4	-0.02
2021-05-08	-4.6	99	11.1	5	221.5	0.06
2021-05-09	-3.2	100	8.9	191	196.7	0.12
2021-05-10	-2.1	100	12.0	177	272.6	0.02
2021-05-11	-1.8	100	30.7	337	197.2	-0.30
2021-05-12	-8.9	95	20.1	356	301.8	0.36
2021-05-13	-9.4	99	22.2	295	181.8	-0.02
2021-05-14	-14.8	86	28.7	335	277.8	-0.18
2021-05-15	-11.0	89	23.0	301	286.6	-0.10
2021-05-16	-10.7	92	9.0	47	283.0	0.26
2021-05-17	-11.7	94	11.5	313	258.1	0.00
2021-05-18	-10.1	91	19.9	0	319.0	-0.02
2021-05-19	-11.3	93	15.3	30	314.8	-0.07
2021-05-20	-9.1	94	20.0	277	322.3	0.04
2021-05-21	-6.9	95	19.9	318	278.3	-0.09
2021-05-22	-8.0	93	14.8	311	327.0	0.13
2021-05-23	-4.0	100	16.9	165	193.3	-0.07
2021-05-24	-4.9	99	21.5	62	214.4	0.13
2021-05-25	-5.1	98	22.2	37	234.9	-0.07
2021-05-26	-5.6	97	24.8	353	249.8	0.03
2021-05-27	-2.1	97	13.7	320	336.2	1.84
2021-05-28	0.2	100	17.1	160	189.2	0.78
2021-05-29	0.9	100	15.8	30	169.2	2.24
2021-05-30	0.1	100	13.6	311	184.2	1.84

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-05-31	-0.9	100	31.2	11	249.6	3.08
2021-06-01	-0.1	100	17.0	264	194.0	0.07
2021-06-02	0.9	100	15.6	47	181.5	-0.03
2021-06-03	1.2	100	19.0	5	335.5	-0.03
2021-06-04	1.0	96	14.3	19	309.9	0.02
2021-06-05	1.7	98	7.9	288	321.1	0.08
2021-06-06	-0.5	99	20.1	118	173.1	0.03
2021-06-07	1.6	100	15.3	40	250.2	-0.04
2021-06-08	2.5	100	18.4	340	247.7	-0.12
2021-06-09	2.2	99	20.2	345	306.4	0.01
2021-06-10	4.1	91	19.0	322	324.3	0.06
2021-06-11	8.0	94	6.7	344	345.6	-0.08
2021-06-12	8.9	98	5.6	167	263.9	-0.02
2021-06-13	10.5	82	8.5	348	338.2	-0.07
2021-06-14	8.2	100	8.7	163	317.2	0.32
2021-06-15	5.4	100	11.1	170	163.6	0.06
2021-06-16	7.4	100	17.8	76	295.9	0.07
2021-06-17	8.2	98	20.2	30	332.4	0.42
2021-06-18	7.2	100	18.3	309	193.8	0.23
2021-06-19	3.2	100	23.8	352	227.3	-0.09
2021-06-20	4.3	99	26.1	14	177.6	-0.03
2021-06-21	5.7	94	20.5	357	228.4	0.53
2021-06-22	6.6	93	19.7	277	146.4	6.75
2021-06-23	5.3	100	15.4	268	196.5	7.37
2021-06-24	2.8	100	33.3	343	138.5	-0.12
2021-06-25	4.3	100	28.8	343	111.0	-0.05
2021-06-26	7.3	98	12.0	297	283.7	0.10
2021-06-27	7.9	97	10.2	237	184.2	0.00
2021-06-28	8.3	97	8.5	330	142.1	-0.04
2021-06-29	11.7	95	9.9	308	342.3	0.00
2021-06-30	8.8	93	17.4	210	268.2	1.79
2021-07-01	8.9	100	21.5	94	241.0	1.86
2021-07-02	10.3	100	13.9	142	285.9	6.05
2021-07-03	7.4	100	10.1	142	114.1	0.01
2021-07-04	7.9	95	17.6	78	257.3	0.07
2021-07-05	9.1	99	15.8	353	307.6	0.38
2021-07-06	11.7	94	17.2	268	236.7	1.05
2021-07-07	12.4	99	19.1	320	205.8	0.01
2021-07-08	12.7	100	15.8	328	332.1	-0.06

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-07-09	11.8	95	12.0	158	277.5	0.00
2021-07-10	13.5	98	13.0	208	296.3	0.00
2021-07-11	12.1	100	13.7	181	236.0	1.71
2021-07-12	11.2	100	21.2	53	128.3	0.04
2021-07-13	11.2	95	21.4	332	275.2	-0.08
2021-07-14	18.9	87	15.8	250	265.2	0.46
2021-07-15	15.9	95	12.2	200	156.4	17.62
2021-07-16	7.6	100	38.5	51	37.8	-0.10
2021-07-17	10.4	99	25.7	339	269.7	-0.05
2021-07-18	12.6	93	24.3	330	254.8	-0.03
2021-07-19	17.1	87	17.0	316	282.8	0.03
2021-07-20	16.1	87	17.8	330	248.7	0.01
2021-07-21	14.5	90	17.7	344	269.1	-0.01
2021-07-22	14.9	93	17.6	224	268.0	25.12
2021-07-23	10.3	100	15.8	163	78.7	3.75
2021-07-24	9.1	100	32.3	347	105.7	2.81
2021-07-25	8.0	100	49.2	341	110.8	-0.04
2021-07-26	7.4	91	30.4	329	146.6	-0.02
2021-07-27	8.4	95	11.8	329	175.8	0.00
2021-07-28	9.3	95	17.9	333	148.2	1.87
2021-07-29	9.1	97	10.8	173	163.4	0.50
2021-07-30	8.0	94	23.1	136	108.4	-0.01
2021-07-31	9.9	99	15.6	285	141.3	4.06
2021-08-01	10.2	100	16.4	315	71.4	0.64
2021-08-02	9.4	99	17.6	301	122.6	2.68
2021-08-03	10.5	100	26.1	328	143.1	0.22
2021-08-04	8.0	100	37.4	341	188.6	-0.04
2021-08-05	7.5	87	35.8	336	163.9	-0.06
2021-08-06	9.3	92	24.0	340	222.0	0.05
2021-08-07	11.8	97	13.6	213	159.8	4.57
2021-08-08	10.2	100	25.0	277	122.5	-0.02
2021-08-09	9.0	97	35.3	305	168.3	0.03
2021-08-10	9.8	100	13.7	187	127.2	24.32
2021-08-11	7.4	100	29.1	91	24.6	10.14
2021-08-12	7.7	100	44.1	14	44.8	3.50
2021-08-13	8.6	100	38.1	354	91.6	1.21
2021-08-14	10.6	100	19.3	335	206.0	11.51
2021-08-15	8.7	100	20.1	64	140.4	0.01
2021-08-16	9.7	99	12.6	358	218.4	0.24

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-08-17	6.8	97	16.1	127	77.2	1.09
2021-08-18	8.6	97	11.5	31	107.5	-0.03
2021-08-19	9.8	100	9.9	271	179.1	0.01
2021-08-20	6.4	100	11.8	190	77.8	0.72
2021-08-21	7.4	100	18.7	109	91.4	18.24
2021-08-22	7.1	100	45.2	14	34.8	-0.01
2021-08-23	7.6	38	36.3	339	99.9	0.12
2021-08-24	10.7	89	21.1	313	202.4	0.02
2021-08-25	12.1	98	12.7	263	196.2	-0.13
2021-08-26	16.0	87	16.7	242	199.4	-0.01
2021-08-27	17.3	91	14.4	242	192.3	0.00
2021-08-28	15.0	97	10.5	200	187.6	0.03
2021-08-29	11.4	100	13.4	151	190.5	0.07
2021-08-30	8.0	100	15.5	156	164.7	3.22
2021-08-31	8.6	100	13.9	168	83.6	0.05
2021-09-01	9.6	99	14.0	192	118.9	1.37
2021-09-02	7.8	100	12.6	174	54.8	2.11
2021-09-03	6.8	100	27.0	98	44.8	0.78
2021-09-04	8.5	100	29.6	72	149.9	0.03
2021-09-05	7.2	100	6.5	160	155.5	0.19
2021-09-06	6.2	100	10.9	175	50.3	0.39
2021-09-07	7.1	100	15.4	149	66.6	0.67
2021-09-08	6.0	100	10.5	156	59.3	0.82
2021-09-09	6.6	100	6.9	178	63.2	-0.04
2021-09-10	6.2	100	22.1	123	49.4	4.96
2021-09-11	4.7	100	28.4	78	33.7	0.03
2021-09-12	4.2	100	7.9	231	150.2	11.41
2021-09-13	5.1	100	13.8	177	29.4	8.10
2021-09-14	7.4	100	9.7	251	46.5	0.28
2021-09-15	6.6	100	9.7	315	108.0	0.15
2021-09-16	5.1	100	24.0	72	58.3	1.39
2021-09-17	4.8	100	20.2	36	76.2	2.11
2021-09-18	4.0	100	9.0	349	78.9	0.10
2021-09-19	2.6	100	28.6	116	51.1	0.18
2021-09-20	1.3	100	40.4	56	31.0	0.07
2021-09-21	1.6	100	17.4	2	125.3	0.04
2021-09-22	1.6	100	8.1	157	125.5	-0.06
2021-09-23	2.9	94	29.9	131	52.5	8.49
2021-09-24	3.9	100	37.2	121	20.6	0.28

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-09-25	3.6	100	20.0	110	45.5	0.02
2021-09-26	2.2	100	8.9	12	43.8	0.02
2021-09-27	3.1	100	12.6	11	94.1	-0.01
2021-09-28	0.9	100	14.8	52	69.6	0.56
2021-09-29	2.9	100	17.6	158	63.3	4.00
2021-09-30	5.3	100	10.1	169	26.5	0.61
2021-10-01	5.1	100	10.4	170	36.3	0.80
2021-10-02	5.0	100	11.4	183	25.1	1.55
2021-10-03	5.0	100	13.1	171	17.1	18.77
2021-10-04	4.9	100	16.2	188	10.8	0.86
2021-10-05	3.8	100	33.8	334	25.7	0.16
2021-10-06	2.0	100	13.9	339	48.8	7.44
2021-10-07	1.3	100	22.3	138	11.9	0.51
2021-10-08	4.4	100	16.4	246	76.9	0.03
2021-10-09	4.5	100	8.8	199	64.9	-0.01
2021-10-10	5.8	100	13.4	198	60.7	3.96
2021-10-11	2.8	100	16.2	69	20.6	6.28
2021-10-12	0.6	100	26.0	355	35.3	0.04
2021-10-13	0.5	100	12.8	264	46.1	0.04
2021-10-14	1.0	100	14.7	157	31.6	1.98
2021-10-15	2.4	100	33.6	117	13.8	4.03
2021-10-16	3.7	100	17.0	142	13.7	0.39
2021-10-17	1.4	100	14.3	277	28.2	0.04
2021-10-18	1.3	100	11.6	250	25.9	0.11
2021-10-19	-0.9	100	25.6	5	25.0	0.01
2021-10-20	-2.5	100	32.7	45	26.8	0.06
2021-10-21	-3.3	99	14.5	70	14.3	0.07
2021-10-22	-3.4	100	12.2	261	34.2	0.02
2021-10-23	-3.0	100	10.4	246	53.3	0.34
2021-10-24	-1.2	100	9.3	221	54.3	0.07
2021-10-25	-2.2	108	11.9	224	28.8	0.06
2021-10-26	1.9	100	16.0	199	23.1	5.90
2021-10-27	2.2	100	12.7	208	4.6	-0.03
2021-10-28	0.4	100	5.5	39	18.5	1.65
2021-10-29	0.1	100	14.2	2	13.3	0.09
2021-10-30	-1.4	100	24.1	360	20.8	-0.01
2021-10-31	-5.5	98	27.7	17	23.5	0.08
2021-11-02	-8.0	100	22.2	10	29.8	-0.02
2021-11-03	-8.1	100	13.7	328	29.3	0.22

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-11-04	-6.3	100	7.2	318	7.3	0.57
2021-11-05	-3.5	100	5.2	169	5.5	2.88
2021-11-06	-0.5	100	8.9	158	9.9	-0.23
2021-11-07	-3.3	100	9.2	144	16.9	1.75
2021-11-08	-1.1	100	16.9	140	14.2	0.88
2021-11-09	-1.5	100	26.5	126	16.6	-0.08
2021-11-10	-5.3	100	20.7	60	22.3	0.27
2021-11-11	-14.4	98	15.9	6	17.0	0.18
2021-11-12	-16.2	96	1.4	11	11.8	0.26
2021-11-13	-20.1	93	0.7	333	20.3	0.13
2021-11-14	-17.3	96	3.6	176	24.6	-
2021-11-15	-8.1	100	6.4	181	9.7	1.79
2021-11-16	-5.2	100	12.5	221	12.3	0.53
2021-11-17	-9.5	100	8.6	320	12.4	0.17
2021-11-18	-15.3	97	7.5	352	11.3	0.08
2021-11-19	-21.7	97	11.5	356	13.9	0.51
2021-11-20	-17.3	100	2.2	18	7.7	0.02
2021-11-21	-8.2	99	33.0	89	9.6	-0.09
2021-11-22	-12.2	97	32.6	36	8.3	0.26
2021-11-23	-24.2	92	31.0	354	10.1	0.14
2021-11-24	-29.2	79	23.8	300	9.9	-0.10
2021-11-25	-23.2	96	22.4	347	9.1	-0.02
2021-11-26	-16.0	96	31.0	332	7.8	0.00
2021-11-27	-23.6	91	7.6	343	6.2	0.37
2021-11-28	-11.0	97	17.8	121	5.1	0.41
2021-11-29	-12.8	99	16.5	113	7.1	0.10
2021-11-30	-25.5	88	9.4	356	6.2	0.77
2021-12-01	-16.4	98	20.9	41	5.5	0.49
2021-12-02	-21.1	92	47.3	355	4.5	0.07
2021-12-03	-25.5	82	34.9	347	5.6	0.07
2021-12-04	-29.2	75	36.9	343	5.9	0.01
2021-12-05	-30.8	71	30.8	329	5.2	0.04
2021-12-06	-31.0	71	31.0	319	3.9	0.07
2021-12-07	-28.2	81	20.5	326	4.0	0.09
2021-12-08	-25.3	86	21.2	342	4.3	-0.08
2021-12-09	-25.1	88	11.1	353	3.9	123.90
2021-12-10	-12.4	99	18.7	142	3.9	0.09
2021-12-11	-7.6	100	42.6	109	4.4	-0.24
2021-12-12	-10.1	100	21.1	106	5.4	0.08

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation* (mm)
2021-12-13	-13.6	98	35.0	79	3.6	0.24
2021-12-14	-19.8	95	17.7	0	3.6	-0.26
2021-12-15	-21.2	91	9.3	272	3.6	0.31
2021-12-16	-19.7	92	23.3	73	2.8	0.69
2021-12-17	-20.2	93	44.5	31	5.5	0.14
2021-12-18	-28.4	82	36.3	350	3.9	0.02
2021-12-19	-30.6	72	27.4	341	3.6	-0.03
2021-12-20	-32.0	71	17.1	317	3.0	0.12
2021-12-21	-32.5	71	10.4	265	3.1	0.16
2021-12-22	-30.1	77	4.0	166	2.9	-0.01
2021-12-23	-30.9	74	9.6	1	3.3	0.70
2021-12-24	-24.6	91	2.9	318	2.2	-0.17
2021-12-25	-18.9	95	16.1	93	1.7	0.06
2021-12-26	-18.1	94	37.6	95	2.3	1.32
2021-12-27	-13.6	96	17.2	100	2.9	-0.22
2021-12-28	-28.4	96	10.2	300	3.8	0.19
2021-12-29	-29.8	79	6.5	349	4.6	0.31
2021-12-30	-22.6	95	11.6	52	3.4	-0.20
2021-12-31	-20.7	92	14.4	49	4.8	0.49

APPENDIX C

MEL-26 MONITORING RESULTS

		Sample date	8/12/2021	8/12/2021	8/12/2021	8/16/2021	8/16/2021	8/16/2021	8/22/2021	8/29/2021	8/29/2021	8/29/2021	9/5/2021	9/5/2021	9/5/2021	9/12/2021	9/12/2021	9/12/2021	9/19/2021	9/19/2021	9/26/2021	9/26/2021	10/3/2021	10/3/2021	10/3/2021	10/4/2021
Parameter		Unit	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	MEL-26 DUP	MEL-26	MEL-26 DUP	MEL-26	MEL-26 DUP	MEL-26 FB	MEL-26	
WQ02- Conventional Parameters																										
pH		pH units	7.39	-	-	7.31	7.44	5.90	7.38	7.19	-	7.23	-	-	7.35	-	-	7.29	-	-	6.94	-	7.14	-	-	7.17
Dissolved Oxygen		mg/L	10.2	-	-	10.2	10.4	10.1	11.1	11.7	-	11.0	-	-	9.88	-	-	9.88	-	-	9.79	-	11.3	-	-	10.5
Turbidity		NTU	0.5	-	-	0.7	0.8	< 0.1	0.6	0.6	-	0.6	-	-	0.2	-	-	0.6	-	-	0.7	-	0.7	-	-	0.9
Specific conductivity		umhos/cm	21000	-	-	20000	20000	47	19000	19000	-	22000	-	-	21000	-	-	22000	-	-	27000	-	21000	-	-	21000
Hardness, as CaCO3		mg/L	2930	-	-	2930	2980	< 0.50	2530	2510	-	3050	-	-	3190	-	-	3610	-	-	4410	-	3210	-	-	2980
Total alkalinity, as CaCO3		mg/L	43	-	-	34	37	< 1.0	32	33	-	34	-	-	34	-	-	33	-	-	31	-	35	-	-	35
Carbonate, as CaCO3		mg/L	< 1.0	-	-	< 1.0	< 1.0	< 1.0	-	< 1.0	-	-	-	-	< 1.0	-	-	-	-	-	< 1.0	-	< 1.0	-	-	< 1.0
Bicarbonate, as CaCO3		mg/L	43	-	-	34	37	< 1.0	32	33	-	34	-	-	33	-	-	33	-	-	31	-	35	-	-	35
TDS		mg/L	13000	-	-	12500	12400	< 10	11900	10400	-	14000	-	-	13700	-	-	14600	-	-	18200	-	14600	-	-	13400
TSS		mg/L	2.6	2.9	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.1	3.1	< 2.0	-
Total organic carbon		mg/L	7.9	-	-	7.8	7.9	< 0.40	7.5	7.3	-	8.8	-	-	9.1	-	-	9.6	-	-	9.7	-	8.3	-	-	8.2
Dissolved organic carbon		mg/L	7.3	-	-	7.3	7.3	< 0.40	7.0	6.8	-	8.3	-	-	8.5	-	-	8.7	-	-	8.8	-	7.8	-	-	8.0
WQ03- Major Ions																										
Calcium		mg/L	590	-	-	530	540	< 0.30	490	560	-	760	-	-	690	-	-	560	-	-	760	-	620	-	-	620
Chloride		mg/L	6600	-	-	6400	6400	12	6000	6200	-	6400	-	-	6300	-	-	7000	-	-	8800	-	6900	-	-	6300
Cyanide		mg/L	0.070	-	-	0.068	0.056	< 0.0050	0.092	0.073	-	0.090	-	-	0.071	-	-	0.060	-	-	0.060	-	0.065	-	-	0.066
Cyanide (free)		mg/L	0.016	-	-	0.015	0.017	0.0034	0.023	0.035	-	0.013	-	-	0.016	-	-	0.0083	-	-	0.013	-	0.027	-	-	0.023
Cyanide (WAD)		mg/L	0.023	-	-	0.022	0.023	< 0.0010	0.024	0.040	-	0.022	-	-	0.017	-	-	0.013	-	-	0.0074	-	0.021	-	-	0.022
Magnesium		mg/L	350	-	-	350	340	< 0.20	320	370	-	410	-	-	410	-	-	400	-	-	580	-	430	-	-	430
Potassium		mg/L	140	-	-	130	130	< 0.30	130	150	-	160	-	-	160	-	-	130	-	-	170	-	150	-	-	160
Silica		mg/L	4.4	-	-	8.0	5.4	< 0.050	5.9	5.0	-	4.8	-	-	4.9	-	-	2.7	-	-	3.9	-	2.5	-	-	2.3
Sodium		mg/L	3400	-	-	3200	3300	< 0.50	3000	3200	-	4100	-	-	3900	-	-	3300	-	-	4500	-	3700	-	-	3600
Sulfate		mg/L	800	-	-	720	780	1.6	720	790	-	930	-	-	870	-	-	960	-	-	1000	-	850	-	-	820
WQ04- Nutrients																										
Ammonia Nitrogen		mg/L	37	-	-	35	35	0.094	32	36	-	35	-	-	29	-	-	24	-	-	25	-	31	-	-	29
Nitrate		mg/L	47.1	-	-	45.5	44.2	< 0.10	44.8	45.4	-	47.8	-	-	43.5	-	-	40.1	-	-	38.4	-	43.9	-	-	42.7
Nitrite		mg/L	1.30	-	-	1.22	1.24	< 0.010	1.20	1.11	-	1.01	-	-	0.830	-	-	0.755	-	-	0.826	-	0.938	-	-	0.936
Total Kjeldahl nitrogen		mg/L	43	-	-	43	40	0.22	35	41	-	35	-	-	31	-	-	27	-	-	29	-	32	-	-	33
Total phosphorus		mg/L	< 0.020	-	-	< 0.020	< 0.020	< 0.020	0.022	0.033	-	< 0.020	-	-	0.057	-	-	0.055	-	-	0.030	-	0.054	-	-	0.051
Orthophosphate (P)		mg/L	< 0.010	-	-	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	-	-	< 0.010	-	-	< 0.010	-	-	0.010	-	< 0.010	-	-	< 0.010
WQ06- Total Metals																										
Aluminum		mg/L	0.365	-	-	0.497	0.498	< 0.0030	0.338	0.220	-	0.350	-	-	0.297	-	-	0.435	-	-	0.621	-	0.424	-	-	0.394
Antimony		mg/L	< 0.0050	-	-	< 0.0050	< 0.0050	< 0.00050	< 0.0050	0.00372	-	< 0.0050	-	-	< 0.0050	-	-	< 0.0050	-	-	< 0.010	-	< 0.0050	-	-	< 0.0050
Arsenic		mg/L	0.0081	-	-	0.0081	0.0085	< 0.00010	0.0062	0.00506	-	0.0068	-	-	0.0062	-	-	0.0053	-	-	0.0056	-	0.0055	-	-	0.0055
Barium		mg/L	0.105	-	-	0.103	0.108	< 0.0010	0.101	0.101	-	0.109	-	-	0.118	-	-	0.114	-	-	0.126	-	0.109	-	-	0.102
Beryllium		mg/L	< 0.0010	-	-	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.00010	-	< 0.0010	-	-	< 0.0010	-	-	< 0.0010	-	-	< 0.0020	-	< 0.0010	-	-	< 0.0010
Boron		mg/L	0.86	-	-	0.92	0.97	< 0.050	0.69	0.656	-	0.96	-	-	0.72	-	-	0.71	-	-	1.1	-	0.91	-	-	0.82
Cadmium		mg/L	< 0.00010	-	-	< 0.00010	< 0.00010	< 0.000010	< 0.00010	0.000081	-	< 0.00010	-	-	< 0.00010	-	-	< 0.00010	-	-	< 0.00020	-	< 0.00010	-	-	< 0.00010
Chromium		mg/L	< 0.010	-	-	< 0.010	< 0.010	< 0.0010	< 0.010	< 0.0010	-	< 0.010	-	-	< 0.010	-	-	< 0.010	-	-	< 0.020	-	< 0.010	-	-	< 0.010
Cobalt		mg/L	0.0036	-	-	0.0036	0.0037	< 0.00020	0.0035	0.00364	-	0.0037	-	-	0.0033	-	-	0.0037	-	-	0.0043	-	0.0041	-	-	0.0041
Copper		mg/L	< 0.0050	-	-	< 0.0050	< 0.0050	< 0.00050	< 0.0050	0.00293	-	< 0.0050	-	-	< 0.0050	-	-	< 0.0050	-	-	< 0.010	-	< 0.0050	-	-	< 0.0050
Iron		mg/L	< 0.10	-	-	< 0.10	< 0.10	< 0.10	0.026	0.026	-	< 0.10	-	-	< 0.10	-	-	< 0.20	-	-	< 0.20	-	< 0.10	-	-	< 0.10
Lead		mg/L	< 0.0020	-	-	< 0.0020	< 0.0020	< 0.00020	< 0.0020	0.00040	-	< 0.0020	-	-	< 0.0020	-	-	< 0.0020	-	-	< 0.0040	-	< 0.0020	-	-	< 0.0020
Lithium		mg/L	0.118	-	-	0.134	0.141	< 0.0020	0.102	0.0993	-	0.133	-	-	0.129	-	-	0.220	-	-	0.181	-	0.172	-	-	0.172
Manganese		mg/L	0.134	-	-	0.144	0.148	< 0.0010	0.139	0.141	-	0.122	-	-	0.103	-	-	0.167	-	-	0.211	-	0.177	-	-	0.169
Mercury		mg/L	< 0.00001	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	-	< 0.00001	-	-	< 0.00001	-	-	< 0.00001	-	-	< 0.00001	-	< 0.00001	-	-	< 0.00001
Molybdenum		mg/L	0.027	-	-	0.025	0.027	< 0.0010	0.024	0.0228	-	0.025	-	-	0.024	-	-	0.018	-	-	< 0.020	-	0.023	-	-	0.023
Nickel		mg/L	0.024	-	-	0.023	0.023	< 0.0010	0.026	0.0285	-	0.027	-	-	0.023	-	-	0.022	-	-	0.032	-	0.032	-	-	0.034
Selenium		mg/L	0.0020	-	-	0.0018	0.0020	< 0.00010	0.0018	0.00221	-	0.0019	-	-	0.0018	-	-	0.0016	-	-	< 0.0020	-	0.0016	-	-	0.0018
Silver		mg/L	< 0.00020	-	-	< 0.00020	< 0.00020	< 0.000020	< 0.00020	< 0.00020	-	< 0.00020	-	-	< 0.00020	-	-	< 0.00020	-	-	< 0.00040	-	< 0.00020	-	-	< 0.00020
Strontium		mg/L	11.8	-	-	11.0	11.7	< 0.0010	10.5	11.3	-	12.2	-	-	13.3	-	-	16.2	-	-	19.2	-	13.0	-	-	12.2
Thallium		mg/L	< 0.00010	-	-	< 0.00010	< 0.00010	< 0.000010	< 0.00010	0.000076	-	< 0.00010	-	-	< 0.00010	-	-	< 0.00010	-	-	< 0.00020	-	< 0.00010	-	-	< 0.00010
Tin		mg/L	< 0.050	-	-	< 0.050	< 0.050	< 0.0050	< 0.050	< 0.0050	-	< 0.050	-	-	< 0.050	-	-	< 0.050	-	-	< 0.10	-	< 0.050	-	-	< 0.050
Titanium		mg/L	< 0.050	-	-	< 0.050	< 0.050	< 0.0050	< 0.050	< 0.0050	-	< 0.050	-	-	< 0.050	-	-	< 0.050	-	-	< 0.10	-	< 0.050	-	-	< 0.050
Uranium		mg/L	0.0047	-	-	0.0043	0.0043	< 0.00010	0.0035	0.00300	-	0.0046	-	-	0.0047	-	-	0.0041	-	-	0.0038	-	0.0053	-	-	0.0053
Vanadium		mg/L	< 0.050	-	-	< 0.050	< 0.050	< 0.0050	< 0.050	< 0.0050	-	< 0.050	-	-	< 0.050	-	-	< 0.050	-	-	< 0.10	-	< 0.050	-	-	< 0.050
Zinc		mg/L	< 0.050	-	-	< 0.050	< 0.050	< 0.0050	< 0.050	0.0083	-	< 0.050	-	-	< 0.050	-	-	< 0.050	-	-	< 0.10	-	< 0.050	-	-	< 0.025
WQ07- Dissolved Metals																										
Aluminum		mg/L	0.141	-	-	0.167	0.149	< 0.0030	0.091	0.083	-	0.067	-	-	0.067	-	-	0.105	-	-	0.080	-	0.081	-	-	0.090
Antimony		mg/L	< 0.0050	-	-	< 0.0050	< 0.0050	< 0.00050	< 0.0050																	

APPENDIX D

MELVIN BAY MONITORING RESULTS

Sample date		8/18/2021	9/18/2021
Sample name		MBE-1 DEEP	MBE-1-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.84	7.85
Dissolved Oxygen	mg/L	10.6	10.5
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	43000
Hardness, as CaCO3	mg/L	5480	4950
Total alkalinity, as CaCO3	mg/L	100	110
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	30500	30400
TSS	mg/L	16	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.2	1.1
WQ03- Major Ions			
Calcium	mg/L	360	300
Chloride	mg/L	16000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0034	-
Cyanide (WAD)	mg/L	0.0011	-
Fluoride	mg/L	0.64	0.64
Magnesium	mg/L	1200	920
Potassium	mg/L	350	280
Silica	mg/L	0.37	0.24
Sodium	mg/L	9100	7900
Sulfate	mg/L	2100	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.12	0.19
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	0.012
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.14	0.36
Total phosphorus	mg/L	< 0.040	0.042
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.014	0.017
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.043
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00201
Barium	mg/L	< 0.050	0.00907
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.3	3.88
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00012
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.19	0.146
Manganese	mg/L	< 0.050	0.0016
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0098
Nickel	mg/L	< 0.050	0.00066
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.52	7.19
Sulphur	mg/L	835	798
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00274
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0062
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.015	0.018
Antimony	mg/L	< 0.0025	< 0.00040
Arsenic	mg/L	0.00172	0.00184
Barium	mg/L	0.0095	0.00948
Beryllium	mg/L	< 0.00050	< 0.00020
Bismuth	mg/L	< 0.0050	< 0.00010
Boron	mg/L	2.78	3.91
Cadmium	mg/L	< 0.000050	< 0.00010
Chromium	mg/L	< 0.0050	< 0.0020
Cobalt	mg/L	< 0.0010	< 0.00010
Copper	mg/L	< 0.0010	< 0.0010
Iron	mg/L	< 0.025	< 0.02
Lead	mg/L	< 0.0010	< 0.00010
Lithium	mg/L	0.137	0.149
Manganese	mg/L	< 0.0050	0.0012
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0108	0.0099
Nickel	mg/L	< 0.0050	0.00062
Selenium	mg/L	< 0.00050	< 0.00080
Silicon	mg/L	< 0.50	< 1
Silver	mg/L	< 0.00010	< 0.00010
Strontium	mg/L	8.06	7.33
Sulphur	mg/L	796	801
Thallium	mg/L	< 0.000050	< 0.000040
Tin	mg/L	< 0.025	< 0.0040
Titanium	mg/L	< 0.025	< 0.01
Uranium	mg/L	0.00294	0.00281
Vanadium	mg/L	< 0.025	< 0.0040
Zinc	mg/L	< 0.025	0.0061
Zirconium	mg/L	< 0.00050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-1 SURFACE	MBE-1-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.90	7.88
Dissolved Oxygen	mg/L	10.7	10.7
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5350	5180
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	110	100
TDS	mg/L	28300	28300
TSS	mg/L	4	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.3	1.2
WQ03- Major Ions			
Calcium	mg/L	360	290
Chloride	mg/L	15000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0036	-
Cyanide (WAD)	mg/L	0.0012	-
Fluoride	mg/L	0.66	0.62
Magnesium	mg/L	1100	900
Potassium	mg/L	350	280
Silica	mg/L	0.20	0.20
Sodium	mg/L	9100	7800
Sulfate	mg/L	2100	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.072	0.090
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.010
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	< 0.10	0.60
Total phosphorus	mg/L	< 0.040	0.051
Dissolved phosphorus	mg/L	-	0.041
Orthophosphate (P)	mg/L	0.017	0.015
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.017
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00212
Barium	mg/L	< 0.050	0.00942
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.2	4.12
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.19	0.153
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00095
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.40	7.42
Sulphur	mg/L	863	832
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00284
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0042
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.012
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00179
Barium	mg/L	< 0.050	0.00904
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.6	3.98
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00011
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0097
Nickel	mg/L	< 0.050	0.00060
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.02	7.23
Sulphur	mg/L	790	832
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00283
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0049
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-2 DEEP	MBE-2-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.89	7.85
Dissolved Oxygen	mg/L	10.8	10.5
Turbidity	NTU	0.2	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5350	5100
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	110	100
TDS (Maxxam)	mg/L	30900	30700
TSS	mg/L	4	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.3	1.1
WQ03- Major Ions			
Calcium	mg/L	360	290
Chloride	mg/L	15000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0020	-
Cyanide (WAD)	mg/L	0.0011	-
Fluoride	mg/L	0.65	0.63
Magnesium	mg/L	1100	900
Potassium	mg/L	340	280
Silica	mg/L	0.19	0.23
Sodium	mg/L	8900	7700
Sulfate	mg/L	1900	2300
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.072	0.13
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.15	0.66
Total phosphorus	mg/L	< 0.040	< 0.04
Dissolved phosphorus	mg/L	-	0.047
Orthophosphate (P)	mg/L	0.015	0.016
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.016
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00222
Barium	mg/L	< 0.050	0.00896
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.2	3.99
Cadmium	mg/L	< 0.00050	< 0.00010
Calcium (total)	mg/L	361	366
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.154
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0096
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.54	7.45
Sulphur	mg/L	871	826
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00277
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0039
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.016
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00199
Barium	mg/L	< 0.050	0.00984
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.96
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.149
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0095
Nickel	mg/L	< 0.050	0.00058
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.98	7.19
Sulphur	mg/L	780	831
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00274
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0038
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	0.011

Sample date		8/18/2021	9/18/2021
Sample name		MBE-2 SURFACE	MBE-2-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.95	7.87
Dissolved Oxygen	mg/L	10.8	10.4
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5260	5080
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	110	100
TDS	mg/L	30800	29000
TSS	mg/L	4	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.2	1.1
WQ03- Major Ions			
Calcium	mg/L	360	330
Chloride	mg/L	16000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0025	-
Cyanide (WAD)	mg/L	0.0013	-
Fluoride	mg/L	0.66	0.62
Magnesium	mg/L	1200	1200
Potassium	mg/L	350	330
Silica	mg/L	0.25	0.22
Sodium	mg/L	9000	9400
Sulfate	mg/L	2200	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.10	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.010
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.15	0.28
Total phosphorus	mg/L	0.044	< 0.040
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.012	0.014
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.019
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00203
Barium	mg/L	< 0.050	0.00946
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.2	3.99
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00049
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.38	7.38
Sulphur	mg/L	833	808
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00266
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0043
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.013
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00169
Barium	mg/L	< 0.050	0.00921
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.6	3.97
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.146
Manganese	mg/L	< 0.050	0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0095
Nickel	mg/L	< 0.050	0.00052
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.02	7.21
Sulphur	mg/L	818	807
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00274
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0047
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-4 DEEP	MBE-4-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.90	7.82
Dissolved Oxygen	mg/L	11.0	10.7
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	44000	42000
Hardness, as CaCO3	mg/L	5500	5110
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS (Maxxam)	mg/L	28000	30500
TSS	mg/L	8	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.3	1.1
WQ03- Major Ions			
Calcium	mg/L	360	380
Chloride	mg/L	15000	16000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0020	-
Cyanide (WAD)	mg/L	0.0015	-
Fluoride	mg/L	0.65	0.61
Magnesium	mg/L	1200	1200
Potassium	mg/L	350	360
Silica	mg/L	0.21	0.22
Sodium	mg/L	9000	10000
Sulfate	mg/L	2100	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.080	0.12
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.010
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	< 0.10	0.47
Total phosphorus	mg/L	< 0.040	0.046
Dissolved phosphorus	mg/L	-	0.046
Orthophosphate (P)	mg/L	0.013	0.016
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.02
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00196
Barium	mg/L	< 0.050	0.00992
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.3	3.96
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.19	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0097
Nickel	mg/L	< 0.050	0.00056
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.63	7.41
Sulphur	mg/L	883	821
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00278
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0039
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.02
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00207
Barium	mg/L	< 0.050	0.00967
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.04
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.151
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0101
Nickel	mg/L	< 0.050	0.00044
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.93	7.31
Sulphur	mg/L	806	837
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00280
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0054
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-4 SURFACE	MBE-4-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.91	7.88
Dissolved Oxygen	mg/L	10.7	10.8
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5550	5010
Total alkalinity, as CaCO3	mg/L	100	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	27100	30100
TSS	mg/L	1	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.3	1.1
WQ03- Major Ions			
Calcium	mg/L	350	270
Chloride	mg/L	15000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0027	-
Cyanide (WAD)	mg/L	0.0017	-
Fluoride	mg/L	0.65	0.62
Magnesium	mg/L	1200	840
Potassium	mg/L	340	260
Silica	mg/L	0.30	0.20
Sodium	mg/L	9200	7300
Sulfate	mg/L	2000	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.11	0.13
Nitrate	mg/L	< 0.10	< 0.10
Nitrite	mg/L	< 0.010	< 0.050
Nitrate + nitrite	mg/L	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.13	0.23
Total phosphorus	mg/L	0.048	0.058
Dissolved phosphorus	mg/L	-	0.04
Orthophosphate (P)	mg/L	0.013	0.013
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.018
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00222
Barium	mg/L	< 0.050	0.00932
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.3	3.93
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.147
Manganese	mg/L	< 0.050	0.0011
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00057
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.80	7.33
Sulphur	mg/L	902	815
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00272
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0037
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.014
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00210
Barium	mg/L	< 0.050	0.00962
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.04
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.16	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0098
Nickel	mg/L	< 0.050	0.00067
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.98	7.38
Sulphur	mg/L	801	810
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00270
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0037
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-5 DEEP	MBE-5-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.89	7.87
Dissolved Oxygen	mg/L	10.7	10.5
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5110	5160
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	110	100
TDS	mg/L	27800	30400
TSS	mg/L	-	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.2	1.1
WQ03- Major Ions			
Calcium	mg/L	360	370
Chloride	mg/L	15000	13000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0031	-
Cyanide (WAD)	mg/L	0.0019	-
Fluoride	mg/L	0.66	0.63
Magnesium	mg/L	1200	1200
Potassium	mg/L	350	350
Silica	mg/L	0.20	0.23
Sodium	mg/L	9000	9700
Sulfate	mg/L	2200	2300
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.10	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.15	0.42
Total phosphorus	mg/L	< 0.040	0.047
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.011	0.016
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.02
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00202
Barium	mg/L	< 0.050	0.00965
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.9	4.08
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.17	0.154
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0099
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.99	7.59
Sulphur	mg/L	817	839
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00291
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0046
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.013
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00214
Barium	mg/L	< 0.050	0.00884
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.8	3.92
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.16	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0101
Nickel	mg/L	< 0.050	0.00046
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.01	7.32
Sulphur	mg/L	792	808
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00275
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0038
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MBE-5 SURFACE	MBE-5-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.90	7.87
Dissolved Oxygen	mg/L	10.8	10.6
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	42000
Hardness, as CaCO3	mg/L	5380	5020
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	30500	30100
TSS	mg/L	5	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.3	1.2
WQ03- Major Ions			
Calcium	mg/L	350	380
Chloride	mg/L	15000	16000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0020	-
Cyanide (WAD)	mg/L	0.0015	-
Fluoride	mg/L	0.65	0.62
Magnesium	mg/L	1200	1300
Potassium	mg/L	340	360
Silica	mg/L	0.20	0.20
Sodium	mg/L	8900	9600
Sulfate	mg/L	2100	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.095	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.20	0.50
Total phosphorus	mg/L	< 0.040	0.046
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.012	0.015
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.124
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00207
Barium	mg/L	< 0.050	0.0100
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.4	4.03
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00045
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.38	7.39
Sulphur	mg/L	865	816
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00279
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0067
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.015
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00187
Barium	mg/L	< 0.050	0.00940
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.12
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.147
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0098
Nickel	mg/L	< 0.050	0.00055
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.88	7.16
Sulphur	mg/L	778	818
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00281
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0034
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MWE-1 DEEP	MWE-1-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.90	7.87
Dissolved Oxygen	mg/L	10.7	10.4
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5360	5130
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS (Maxxam)	mg/L	30800	30400
TSS	mg/L	9	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.3	1.1
WQ03- Major Ions			
Calcium	mg/L	360	290
Chloride	mg/L	16000	13000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0022	-
Cyanide (WAD)	mg/L	0.0034	-
Fluoride	mg/L	0.65	0.63
Magnesium	mg/L	1200	900
Potassium	mg/L	340	280
Silica	mg/L	0.21	0.92
Sodium	mg/L	8900	7800
Sulfate	mg/L	2100	2300
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.21	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.010
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	< 0.10	0.21
Total phosphorus	mg/L	0.049	0.057
Dissolved phosphorus	mg/L	-	0.053
Orthophosphate (P)	mg/L	0.011	0.017
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.024
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	0.0051	0.00221
Barium	mg/L	< 0.050	0.00998
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.8	4
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.14	0.151
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0096
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.97	7.44
Sulphur	mg/L	797	833
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00272
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0040
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.013
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00188
Barium	mg/L	< 0.050	0.00923
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.93
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.148
Manganese	mg/L	< 0.050	0.0012
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0096
Nickel	mg/L	< 0.050	0.00072
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.21	7.13
Sulphur	mg/L	783	824
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00282
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0045
Zirconium	mg/L	< 0.0050	0.0026
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021	9/18/2021	9/18/2021
Sample name		MWE-1 SURFACE	MWE-1-SURFACE	MWE-1-SURFACE DUP	MWE-1-SURFACE FB
Parameter	Unit				
WQ02- Conventional Parameters					
pH	pH units	7.91	7.89	7.87	6.68
Dissolved Oxygen	mg/L	10.6	10.7	10.5	10.3
Turbidity	NTU	< 0.1	< 0.1	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000	42000	3.3
Hardness, as CaCO3	mg/L	5120	4820	5100	< 0.50
Total alkalinity, as CaCO3	mg/L	110	100	100	1.1
Bicarbonate, as CaCO3	mg/L	110	100	100	1.1
TDS	mg/L	31000	29600	28200	< 10
TSS	mg/L	5	< 2.0	< 2.0	< 2.0
Total organic carbon	mg/L	1.4	1.2	1.2	< 0.40
Dissolved organic carbon	mg/L	1.3	1.1	1.1	< 0.40
WQ03- Major Ions					
Calcium	mg/L	350	350	355	< 0.30
Chloride	mg/L	15000	13000	15000	< 1.0
Cyanide	mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0045	-	-	-
Cyanide (WAD)	mg/L	0.0030	-	-	-
Fluoride	mg/L	0.66	0.62	0.61	< 0.10
Magnesium	mg/L	1200	1100	1100	0.22
Potassium	mg/L	340	340	340	< 0.30
Silica	mg/L	0.19	0.25	0.21	< 0.050
Sodium	mg/L	8900	8390	8450	1.8
Sulfate	mg/L	2200	2200	2200	< 1.0
WQ04- Nutrients and Chlorophyll a					
Ammonia Nitrogen	mg/L	0.17	0.095	0.11	< 0.050
Nitrate	mg/L	< 0.20	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	< 0.020	< 0.050	< 0.050	< 0.010
Nitrate + nitrite	mg/L	< 0.20	< 0.10	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.17	0.37	0.68	< 0.10
Total phosphorus	mg/L	0.063	0.061	0.060	< 0.040
Dissolved phosphorus	mg/L	-	< 0.04	0.049	< 0.0020
Orthophosphate (P)	mg/L	< 0.010	0.014	0.014	< 0.010
WQ06- Total Metals					
Aluminum	mg/L	< 0.15	0.023	0.022	0.00107
Antimony	mg/L	< 0.025	< 0.00040	< 0.00040	< 0.000020
Arsenic	mg/L	0.0102	0.00185	0.00213	< 0.000020
Barium	mg/L	< 0.050	0.00876	0.00979	< 0.000020
Beryllium	mg/L	< 0.0050	< 0.00020	< 0.00020	< 0.000010
Bismuth	mg/L	< 0.050	< 0.00010	< 0.00010	< 0.0000050
Boron	mg/L	3.7	3.65	4.07	< 0.01
Cadmium	mg/L	< 0.00050	< 0.00010	< 0.00010	< 0.0000050
Chromium	mg/L	< 0.050	< 0.0020	< 0.0020	< 0.00010
Cobalt	mg/L	< 0.010	< 0.00010	0.00011	< 0.0000050
Copper	mg/L	< 0.025	< 0.0010	< 0.0010	0.000466
Iron	mg/L	< 0.50	< 0.02	< 0.02	< 0.0010
Lead	mg/L	< 0.010	< 0.00010	< 0.00010	0.0000489
Lithium	mg/L	0.13	0.141	0.149	< 0.00050
Manganese	mg/L	< 0.050	< 0.0010	0.0011	< 0.000050
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0092	0.0105	< 0.000050
Nickel	mg/L	< 0.050	0.00071	0.00042	0.000451
Selenium	mg/L	< 0.0050	< 0.00080	< 0.00080	< 0.000040
Silicon	mg/L	< 5.0	< 1	< 1	< 0.05
Silver	mg/L	< 0.0010	< 0.00010	< 0.00010	< 0.0000050
Strontium	mg/L	6.69	6.82	7.36	< 0.000050
Sulphur	mg/L	796	775	823	< 3.0
Thallium	mg/L	< 0.00050	< 0.000040	< 0.000040	< 0.0000020
Tin	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Titanium	mg/L	< 0.25	< 0.01	< 0.01	< 0.00050
Uranium	mg/L	< 0.0050	0.00263	0.00263	< 0.0000020
Vanadium	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Zinc	mg/L	< 0.25	0.0052	0.0075	0.00144
Zirconium	mg/L	< 0.0050	< 0.0020	< 0.0020	< 0.00010
WQ07- Dissolved Metals					
Aluminum	mg/L	< 0.15	0.012	0.036	0.00120
Antimony	mg/L	< 0.025	< 0.00040	< 0.00040	< 0.000020
Arsenic	mg/L	< 0.0050	0.00208	0.00204	< 0.000020
Barium	mg/L	< 0.050	0.00908	0.0100	< 0.000020
Beryllium	mg/L	< 0.0050	< 0.00020	< 0.00020	< 0.000010
Bismuth	mg/L	< 0.050	< 0.00010	< 0.00010	< 0.0000050
Boron	mg/L	3.6	3.73	3.88	< 0.01
Cadmium	mg/L	< 0.00050	< 0.00010	< 0.00010	< 0.0000050
Chromium	mg/L	< 0.050	< 0.0020	< 0.0020	< 0.00010
Cobalt	mg/L	< 0.010	< 0.00010	< 0.00010	< 0.0000050
Copper	mg/L	< 0.010	< 0.0010	< 0.0010	0.000065
Iron	mg/L	< 0.25	< 0.02	< 0.02	< 0.0010
Lead	mg/L	< 0.010	< 0.00010	< 0.00010	< 0.0000050
Lithium	mg/L	0.15	0.143	0.149	< 0.00050
Manganese	mg/L	< 0.050	0.0016	0.0013	< 0.000050
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0096	0.0099	< 0.000050
Nickel	mg/L	< 0.050	0.00050	< 0.00040	0.000059
Selenium	mg/L	< 0.0050	< 0.00080	< 0.00080	< 0.000040
Silicon	mg/L	< 5.0	< 1	< 1	< 0.05
Silver	mg/L	< 0.0010	< 0.00010	< 0.00010	< 0.0000050
Strontium	mg/L	6.90	7.04	7.34	< 0.000050
Sulphur	mg/L	791	786	834	< 3.0
Thallium	mg/L	< 0.00050	< 0.000040	< 0.000040	< 0.0000020
Tin	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Titanium	mg/L	< 0.25	< 0.01	< 0.01	< 0.00050
Uranium	mg/L	< 0.0050	0.00275	0.00269	< 0.0000020
Vanadium	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Zinc	mg/L	< 0.25	0.0035	0.0091	0.00033
Zirconium	mg/L	< 0.0050	< 0.0020	0.0044	< 0.00010
WQ08- Radionuclides					
Radium-226	Bq/l	< 0.0050	< 0.0050	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		MWE-2 DEEP	MWE-2-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.92	7.88
Dissolved Oxygen	mg/L	10.7	10.5
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	44000	42000
Hardness, as CaCO3	mg/L	5420	5130
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	31000	30000
TSS	mg/L	7	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.3	1.2
WQ03- Major Ions			
Calcium	mg/L	360	290
Chloride	mg/L	15000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0027	-
Cyanide (WAD)	mg/L	0.0028	-
Fluoride	mg/L	0.66	0.62
Magnesium	mg/L	1200	900
Potassium	mg/L	350	270
Silica	mg/L	0.20	0.38
Sodium	mg/L	9300	7700
Sulfate	mg/L	2100	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.14	0.10
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	0.25	0.33
Total phosphorus	mg/L	0.050	0.057
Dissolved phosphorus	mg/L	-	0.045
Orthophosphate (P)	mg/L	0.011	0.012
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.018
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00196
Barium	mg/L	< 0.050	0.00936
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.3	3.96
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0102
Nickel	mg/L	< 0.050	0.00053
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.46	7.35
Sulphur	mg/L	887	832
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00285
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0037
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.012
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00208
Barium	mg/L	< 0.050	0.00983
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.08
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00012
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0097
Nickel	mg/L	< 0.050	0.00061
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.02	7.18
Sulphur	mg/L	808	836
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00278
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0032
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	0.016

Sample date		8/18/2021	9/18/2021
Sample name		MWE-2 SURFACE	MWE-2-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.81	7.82
Dissolved Oxygen	mg/L	10.9	10.8
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	42000
Hardness, as CaCO3	mg/L	4970	5080
Total alkalinity, as CaCO3	mg/L	100	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	26100	29700
TSS	mg/L	7	2.9
Total organic carbon	mg/L	1.4	1.2
Dissolved organic carbon	mg/L	1.3	1.2
WQ03- Major Ions			
Calcium	mg/L	350	280
Chloride	mg/L	14000	13000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0052	-
Cyanide (WAD)	mg/L	0.0030	-
Fluoride	mg/L	0.65	0.62
Magnesium	mg/L	1100	880
Potassium	mg/L	340	270
Silica	mg/L	0.20	0.22
Sodium	mg/L	8700	7300
Sulfate	mg/L	1900	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.14	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	< 0.10	0.34
Total phosphorus	mg/L	0.049	0.061
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.014	0.014
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.02
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00204
Barium	mg/L	< 0.050	0.00932
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.06
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00012
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.14	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0099
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.50	7.45
Sulphur	mg/L	738	816
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00284
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0074
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.012
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00177
Barium	mg/L	< 0.050	0.00897
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.6	3.92
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.14	0.146
Manganese	mg/L	< 0.050	0.0012
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0099
Nickel	mg/L	< 0.050	0.00057
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.78	7.25
Sulphur	mg/L	724	797
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00270
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0046
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/18/2021	9/18/2021
Sample name		WS DEEP	WS DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.91	7.85
Dissolved Oxygen	mg/L	10.5	10.9
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	43000	42000
Hardness, as CaCO3	mg/L	5290	4820
Total alkalinity, as CaCO3	mg/L	100	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	29100	30600
TSS	mg/L	4	< 2.0
Total organic carbon	mg/L	1.3	1.1
Dissolved organic carbon	mg/L	1.2	1.1
WQ03- Major Ions			
Calcium	mg/L	360	370
Chloride	mg/L	15000	14000
Cyanide	mg/L	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0047	-
Cyanide (WAD)	mg/L	0.0023	-
Fluoride	mg/L	0.66	0.62
Magnesium	mg/L	1200	1200
Potassium	mg/L	340	350
Silica	mg/L	0.27	0.22
Sodium	mg/L	9000	9700
Sulfate	mg/L	2200	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.091	0.11
Nitrate	mg/L	< 0.20	< 0.10
Nitrite	mg/L	< 0.020	< 0.050
Nitrate + nitrite	mg/L	< 0.20	< 0.10
Total Kjeldahl nitrogen	mg/L	< 0.10	0.29
Total phosphorus	mg/L	< 0.040	0.045
Dissolved phosphorus	mg/L	-	0.049
Orthophosphate (P)	mg/L	0.014	0.018
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.018
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00162
Barium	mg/L	< 0.050	0.00850
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.2	3.76
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.18	0.141
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0091
Nickel	mg/L	< 0.050	0.00050
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.27	6.98
Sulphur	mg/L	809	785
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00263
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0027
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.018
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00195
Barium	mg/L	< 0.050	0.0111
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.83
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.148
Manganese	mg/L	< 0.050	0.0012
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0094
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.00	7.09
Sulphur	mg/L	826	812
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00274
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0034
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

		Sample date	8/18/2021	8/18/2021	8/18/2021	9/18/2021
		Sample name	WS SURFACE	WS SURFACE DUP	WS SURFACE FB	WS SURFACE
Parameter	Unit					
WQ02- Conventional Parameters						
pH	pH units		7.89	7.87	6.70	7.86
Dissolved Oxygen	mg/L		10.7	10.8	11.0	10.3
Turbidity	NTU		< 0.1	< 0.1	< 0.1	< 0.1
Specific conductivity	umhos/cm		43000	43000	1.6	42000
Hardness, as CaCO3	mg/L		5500	5410	< 0.50	5160
Total alkalinity, as CaCO3	mg/L		110	100	1.5	100
Bicarbonate, as CaCO3	mg/L		100	100	1.5	100
TDS	mg/L		26400	31000	< 10	30700
TSS	mg/L		7	-	< 1	< 2.0
Total organic carbon	mg/L		1.3	1.3	< 0.40	1.2
Dissolved organic carbon	mg/L		1.2	1.2	< 0.40	1.1
WQ03- Major Ions						
Calcium	mg/L		360	360	< 0.30	380
Chloride	mg/L		16000	14000	< 1.0	13000
Cyanide	mg/L		< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cyanide (free)	mg/L		0.0022	0.0029	< 0.0010	-
Cyanide (WAD)	mg/L		0.0028	0.0016	0.0010	-
Fluoride	mg/L		0.65	0.67	< 0.10	0.61
Magnesium	mg/L		1200	1200	< 0.20	1300
Potassium	mg/L		340	350	< 0.30	360
Silica	mg/L		0.22	0.19	< 0.050	0.20
Sodium	mg/L		9200	9000	< 0.50	9500
Sulfate	mg/L		2100	2100	< 1.0	2200
WQ04- Nutrients and Chlorophyll a						
Ammonia Nitrogen	mg/L		0.11	0.071	0.079	0.090
Nitrate	mg/L		< 0.20	< 0.20	< 0.10	< 0.10
Nitrite	mg/L		< 0.020	< 0.020	< 0.010	< 0.010
Nitrate + nitrite	mg/L		< 0.20	< 0.20	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L		0.14	< 0.10	< 0.10	0.41
Total phosphorus	mg/L		< 0.040	< 0.040	< 0.020	0.048
Dissolved phosphorus	mg/L		-	-	-	< 0.04
Orthophosphate (P)	mg/L		0.012	0.016	< 0.010	0.016
WQ06- Total Metals						
Aluminum	mg/L		< 0.15	< 0.15	< 0.0030	0.016
Antimony	mg/L		< 0.025	< 0.025	< 0.00050	< 0.00040
Arsenic	mg/L		< 0.0050	< 0.0050	< 0.00010	0.00203
Barium	mg/L		< 0.050	< 0.050	< 0.0010	0.0100
Beryllium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.00020
Bismuth	mg/L		< 0.050	< 0.050	< 0.0010	< 0.00010
Boron	mg/L		4.5	4.3	< 0.050	4.05
Cadmium	mg/L		< 0.00050	< 0.00050	< 0.000010	< 0.00010
Chromium	mg/L		< 0.050	< 0.050	< 0.0010	< 0.0020
Cobalt	mg/L		< 0.010	< 0.010	< 0.00020	< 0.00010
Copper	mg/L		< 0.025	< 0.025	< 0.00050	< 0.0010
Iron	mg/L		< 0.50	< 0.50	< 0.010	< 0.02
Lead	mg/L		< 0.010	< 0.010	< 0.00020	< 0.00010
Lithium	mg/L		0.19	0.19	< 0.0020	0.151
Manganese	mg/L		< 0.050	< 0.050	< 0.0010	< 0.0010
Mercury	mg/L		< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L		< 0.050	< 0.050	< 0.0010	0.0103
Nickel	mg/L		< 0.050	< 0.050	< 0.0010	0.00051
Selenium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.00080
Silicon	mg/L		< 5.0	< 5.0	< 0.10	< 1
Silver	mg/L		< 0.0010	< 0.0010	< 0.000020	< 0.00010
Strontium	mg/L		7.46	7.61	< 0.0010	7.39
Sulphur	mg/L		846	885	< 3.0	843
Thallium	mg/L		< 0.00050	< 0.00050	< 0.000010	< 0.000040
Tin	mg/L		< 0.25	< 0.25	< 0.0050	0.0052
Titanium	mg/L		< 0.25	< 0.25	< 0.0050	< 0.01
Uranium	mg/L		< 0.0050	< 0.0050	< 0.00010	0.00280
Vanadium	mg/L		< 0.25	< 0.25	< 0.0050	< 0.0040
Zinc	mg/L		< 0.25	< 0.25	< 0.0050	0.0029
Zirconium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.0020
WQ07- Dissolved Metals						
Aluminum	mg/L		< 0.15	< 0.15	< 0.0030	0.013
Antimony	mg/L		< 0.025	< 0.025	< 0.00050	< 0.00040
Arsenic	mg/L		< 0.0050	< 0.0050	< 0.00010	0.00195
Barium	mg/L		< 0.050	< 0.050	< 0.0010	0.00957
Beryllium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.00020
Bismuth	mg/L		< 0.050	< 0.050	< 0.0010	< 0.00010
Boron	mg/L		3.7	3.7	< 0.050	3.92
Cadmium	mg/L		< 0.00050	< 0.00050	< 0.000010	< 0.00010
Chromium	mg/L		< 0.050	< 0.050	< 0.0010	< 0.0020
Cobalt	mg/L		< 0.010	< 0.010	< 0.00020	0.00012
Copper	mg/L		< 0.010	< 0.010	< 0.00020	< 0.0010
Iron	mg/L		< 0.25	< 0.25	< 0.0050	< 0.02
Lead	mg/L		< 0.010	< 0.010	< 0.00020	< 0.00010
Lithium	mg/L		0.15	0.15	< 0.0020	0.147
Manganese	mg/L		< 0.050	< 0.050	< 0.0010	< 0.0010
Mercury	mg/L		< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L		< 0.050	< 0.050	< 0.0010	0.0101
Nickel	mg/L		< 0.050	< 0.050	< 0.0010	0.00073
Selenium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.00080
Silicon	mg/L		< 5.0	< 5.0	< 0.10	< 1
Silver	mg/L		< 0.0010	< 0.0010	< 0.000020	< 0.00010
Strontium	mg/L		6.93	6.87	< 0.0010	6.92
Sulphur	mg/L		812	757	< 3.0	791
Thallium	mg/L		< 0.00050	< 0.00050	< 0.000010	< 0.000040
Tin	mg/L		< 0.25	< 0.25	< 0.0050	< 0.0040
Titanium	mg/L		< 0.25	< 0.25	< 0.0050	< 0.01
Uranium	mg/L		< 0.0050	< 0.0050	< 0.00010	0.00269
Vanadium	mg/L		< 0.25	< 0.25	< 0.0050	< 0.0040
Zinc	mg/L		< 0.25	< 0.25	< 0.0050	0.0033
Zirconium	mg/L		< 0.0050	< 0.0050	< 0.00010	< 0.0020
WQ08- Radionuclides						
Radium-226	Bq/l		< 0.0050	0.023	< 0.0050	< 0.0050

Sample date Sample name		8/19/2021	9/18/2021
		MWREF-A1 DEEP	MWREFA-1-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.85	7.79
Dissolved Oxygen	mg/L	11.8	10.3
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	43000
Hardness, as CaCO3	mg/L	5280	5000
Total alkalinity, as CaCO3 (Maxxam)	mg/L	100	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	30900	30400
TSS	mg/L	24	2.8
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.3	1.1
WQ03- Major Ions			
Calcium	mg/L	350	340
Chloride	mg/L	15000	14000
Cyanide	mg/L	0.0076	< 0.0050
Cyanide (free)	mg/L	0.0018	-
Fluoride	mg/L	0.66	0.60
Magnesium	mg/L	1100	1200
Potassium	mg/L	340	340
Silica	mg/L	0.24	0.21
Sodium	mg/L	8900	9300
Sulfate	mg/L	2300	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.090	0.11
Nitrate	mg/L	< 0.10	< 0.10
Nitrite	mg/L	< 0.010	< 0.050
Nitrate + nitrite	mg/L	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.14	0.87
Total phosphorus	mg/L	< 0.040	< 0.040
Dissolved phosphorus	mg/L	-	0.041
Orthophosphate (P)	mg/L	0.015	0.017
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.017
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00205
Barium	mg/L	< 0.050	0.00905
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.0	3.97
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00011
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.16	0.15
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0102
Nickel	mg/L	< 0.050	0.00042
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.14	7.23
Sulphur	mg/L	800	821
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00285
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0035
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.014
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00196
Barium	mg/L	< 0.050	0.00915
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.92
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00012
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0094
Nickel	mg/L	< 0.050	< 0.00040
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.99	7.1
Sulphur	mg/L	773	802
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00278
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0031
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date		8/19/2021	9/18/2021
Sample name		MWREF-A1 SURFACE	MWREFA-1-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.88	7.87
Dissolved Oxygen	mg/L	11.4	10.6
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	42000
Hardness, as CaCO3	mg/L	5420	5020
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	30700	28600
TSS	mg/L	16	< 2.0
Total organic carbon	mg/L	1.3	1.3
Dissolved organic carbon	mg/L	1.2	1.1
WQ03- Major Ions			
Calcium	mg/L	340	390
Chloride	mg/L	16000	15000
Cyanide	mg/L	0.0072	< 0.0050
Cyanide (free)	mg/L	0.0016	-
Fluoride	mg/L	0.67	0.62
Magnesium	mg/L	1100	1300
Potassium	mg/L	330	370
Silica	mg/L	0.18	0.19
Sodium	mg/L	8500	9700
Sulfate	mg/L	2000	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.099	0.12
Nitrate	mg/L	< 0.10	< 0.10
Nitrite	mg/L	0.010	< 0.010
Nitrate + nitrite	mg/L	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.13	0.67
Total phosphorus	mg/L	0.050	0.057
Dissolved phosphorus	mg/L	-	0.043
Orthophosphate (P)	mg/L	0.016	0.014
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.015
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00202
Barium	mg/L	< 0.050	0.00930
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.9	3.98
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.147
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0094
Nickel	mg/L	< 0.050	0.00042
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.25	7.29
Sulphur	mg/L	847	809
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00272
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0027
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.014
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00186
Barium	mg/L	< 0.050	0.00917
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.98
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.147
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0094
Nickel	mg/L	< 0.050	0.00056
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.01	7.01
Sulphur	mg/L	805	799
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00280
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0044
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date Sample name		8/19/2021	9/18/2021
		MWREF-A2 DEEP	MWREFA-2-DEEP
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.88	7.84
Dissolved Oxygen	mg/L	10.8	10.8
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	43000
Hardness, as CaCO3	mg/L	5290	5070
Total alkalinity, as CaCO3	mg/L	100	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	31000	30600
TSS	mg/L	16	< 2.0
Total organic carbon	mg/L	1.3	1.2
Dissolved organic carbon	mg/L	1.2	1.2
WQ03- Major Ions			
Calcium	mg/L	350	280
Chloride	mg/L	15000	13000
Cyanide	mg/L	0.0065	< 0.0050
Cyanide (free)	mg/L	0.0016	-
Fluoride	mg/L	0.66	0.61
Magnesium	mg/L	1100	860
Potassium	mg/L	340	270
Silica	mg/L	0.29	0.22
Sodium	mg/L	8800	7500
Sulfate	mg/L	2200	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.11	0.11
Nitrate	mg/L	< 0.10	< 0.10
Nitrite	mg/L	< 0.010	< 0.050
Nitrate + nitrite	mg/L	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.14	0.67
Total phosphorus	mg/L	0.044	< 0.040
Dissolved phosphorus	mg/L	-	0.044
Orthophosphate (P)	mg/L	0.021	0.015
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.022
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00212
Barium	mg/L	< 0.050	0.00925
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	4.1	3.9
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00011
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.16	0.151
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00055
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.25	7.36
Sulphur	mg/L	858	818
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00272
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0039
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.015
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00191
Barium	mg/L	< 0.050	0.00949
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	4.08
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	< 0.00010
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.148
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0096
Nickel	mg/L	< 0.050	0.00069
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	7.05	7.11
Sulphur	mg/L	811	811
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00267
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0034
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

Sample date Sample name		8/19/2021	9/18/2021
		MWREF-A2 SURFACE	MWREFA-2-SURFACE
Parameter	Unit		
WQ02- Conventional Parameters			
pH	pH units	7.89	7.87
Dissolved Oxygen	mg/L	11.0	10.7
Turbidity	NTU	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	42000
Hardness, as CaCO3	mg/L	5160	5020
Total alkalinity, as CaCO3	mg/L	110	100
Bicarbonate, as CaCO3	mg/L	100	100
TDS	mg/L	32000	28500
TSS	mg/L	18	< 2.0
Total organic carbon	mg/L	1.2	1.3
Dissolved organic carbon	mg/L	1.1	1.1
WQ03- Major Ions			
Calcium	mg/L	350	290
Chloride	mg/L	16000	14000
Cyanide	mg/L	0.0069	< 0.0050
Cyanide (free)	mg/L	0.0031	-
Fluoride	mg/L	0.67	0.62
Magnesium	mg/L	1100	890
Potassium	mg/L	340	280
Silica	mg/L	0.17	0.19
Sodium	mg/L	8800	7600
Sulfate	mg/L	2300	2200
WQ04- Nutrients and Chlorophyll a			
Ammonia Nitrogen	mg/L	0.10	0.10
Nitrate	mg/L	< 0.10	< 0.10
Nitrite	mg/L	< 0.010	< 0.050
Nitrate + nitrite	mg/L	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.16	0.81
Total phosphorus	mg/L	< 0.040	< 0.040
Dissolved phosphorus	mg/L	-	< 0.04
Orthophosphate (P)	mg/L	0.016	0.014
WQ06- Total Metals			
Aluminum	mg/L	< 0.15	0.028
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00177
Barium	mg/L	< 0.050	0.00927
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.9	4
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00010
Copper	mg/L	< 0.025	< 0.0010
Iron	mg/L	< 0.50	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.149
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0098
Nickel	mg/L	< 0.050	0.00054
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.88	7.34
Sulphur	mg/L	797	810
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00268
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0039
Zirconium	mg/L	< 0.0050	< 0.0020
WQ07- Dissolved Metals			
Aluminum	mg/L	< 0.15	0.014
Antimony	mg/L	< 0.025	< 0.00040
Arsenic	mg/L	< 0.0050	0.00183
Barium	mg/L	< 0.050	0.00922
Beryllium	mg/L	< 0.0050	< 0.00020
Bismuth	mg/L	< 0.050	< 0.00010
Boron	mg/L	3.7	3.97
Cadmium	mg/L	< 0.00050	< 0.00010
Chromium	mg/L	< 0.050	< 0.0020
Cobalt	mg/L	< 0.010	0.00011
Copper	mg/L	< 0.010	< 0.0010
Iron	mg/L	< 0.25	< 0.02
Lead	mg/L	< 0.010	< 0.00010
Lithium	mg/L	0.15	0.147
Manganese	mg/L	< 0.050	< 0.0010
Mercury	mg/L	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100
Nickel	mg/L	< 0.050	0.00073
Selenium	mg/L	< 0.0050	< 0.00080
Silicon	mg/L	< 5.0	< 1
Silver	mg/L	< 0.0010	< 0.00010
Strontium	mg/L	6.86	6.94
Sulphur	mg/L	807	812
Thallium	mg/L	< 0.00050	< 0.000040
Tin	mg/L	< 0.25	< 0.0040
Titanium	mg/L	< 0.25	< 0.01
Uranium	mg/L	< 0.0050	0.00266
Vanadium	mg/L	< 0.25	< 0.0040
Zinc	mg/L	< 0.25	0.0042
Zirconium	mg/L	< 0.0050	< 0.0020
WQ08- Radionuclides			
Radium-226	Bq/l	< 0.0050	< 0.0050

		Sample date	8/19/2021	9/18/2021
		Sample name	MWREF-A3 DEEP	MWREFA-3-DEEP
Parameter	Unit			
WQ02- Conventional Parameters				
pH	pH units		7.91	7.86
Dissolved Oxygen	mg/L		11.3	11.0
Turbidity	NTU		< 0.1	< 0.1
Specific conductivity	umhos/cm		42000	43000
Hardness, as CaCO3	mg/L		5310	4840
Total alkalinity, as CaCO3	mg/L		110	100
Bicarbonate, as CaCO3	mg/L		100	100
TDS	mg/L		31100	30600
TSS	mg/L		16	< 2.0
Total organic carbon	mg/L		1.3	1.3
Dissolved organic carbon	mg/L		1.2	1.3
WQ03- Major Ions				
Calcium	mg/L		360	380
Chloride	mg/L		16000	14000
Cyanide	mg/L		< 0.0050	< 0.0050
Cyanide (free)	mg/L		0.0020	-
Fluoride	mg/L		0.66	0.62
Magnesium	mg/L		1100	1300
Potassium	mg/L		340	370
Silica	mg/L		0.26	0.19
Sodium	mg/L		8900	9500
Sulfate	mg/L		2200	2200
WQ04- Nutrients and Chlorophyll a				
Ammonia Nitrogen	mg/L		0.091	0.14
Nitrate	mg/L		< 0.10	< 0.10
Nitrite	mg/L		< 0.010	< 0.010
Nitrate + nitrite	mg/L		< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L		0.11	0.61
Total phosphorus	mg/L		0.041	0.048
Dissolved phosphorus	mg/L		-	< 0.04
Orthophosphate (P)	mg/L		0.016	0.017
WQ06- Total Metals				
Aluminum	mg/L		< 0.15	0.029
Antimony	mg/L		< 0.025	< 0.00040
Arsenic	mg/L		< 0.0050	0.00197
Barium	mg/L		< 0.050	0.00887
Beryllium	mg/L		< 0.0050	< 0.00020
Bismuth	mg/L		< 0.050	< 0.00010
Boron	mg/L		4.2	3.6
Cadmium	mg/L		< 0.00050	< 0.00010
Chromium	mg/L		< 0.050	< 0.0020
Cobalt	mg/L		< 0.010	< 0.00010
Copper	mg/L		< 0.025	< 0.0010
Iron	mg/L		< 0.50	< 0.02
Lead	mg/L		< 0.010	< 0.00010
Lithium	mg/L		0.18	0.14
Manganese	mg/L		< 0.050	0.0017
Mercury	mg/L		< 0.00001	< 0.00001
Molybdenum	mg/L		< 0.050	0.0103
Nickel	mg/L		< 0.050	0.00067
Selenium	mg/L		< 0.0050	< 0.00080
Silicon	mg/L		< 5.0	< 1
Silver	mg/L		< 0.0010	< 0.00010
Strontium	mg/L		7.35	6.66
Sulphur	mg/L		830	781
Thallium	mg/L		< 0.00050	< 0.000040
Tin	mg/L		< 0.25	< 0.0040
Titanium	mg/L		< 0.25	< 0.01
Uranium	mg/L		< 0.0050	0.00260
Vanadium	mg/L		< 0.25	< 0.0040
Zinc	mg/L		< 0.25	0.0053
Zirconium	mg/L		< 0.0050	< 0.0020
WQ07- Dissolved Metals				
Aluminum	mg/L		< 0.15	< 0.01
Antimony	mg/L		< 0.025	< 0.00040
Arsenic	mg/L		< 0.0050	0.00199
Barium	mg/L		< 0.050	0.00944
Beryllium	mg/L		< 0.0050	< 0.00020
Bismuth	mg/L		< 0.050	< 0.00010
Boron	mg/L		3.6	3.54
Cadmium	mg/L		< 0.00050	< 0.00010
Chromium	mg/L		< 0.050	< 0.0020
Cobalt	mg/L		< 0.010	0.00013
Copper	mg/L		< 0.010	0.0011
Iron	mg/L		< 0.25	< 0.02
Lead	mg/L		< 0.010	< 0.00010
Lithium	mg/L		0.15	0.14
Manganese	mg/L		< 0.050	< 0.0010
Mercury	mg/L		< 0.00001	< 0.00001
Molybdenum	mg/L		< 0.050	0.0090
Nickel	mg/L		< 0.050	0.00101
Selenium	mg/L		< 0.0050	< 0.00080
Silicon	mg/L		< 5.0	< 1
Silver	mg/L		< 0.0010	< 0.00010
Strontium	mg/L		7.12	6.75
Sulphur	mg/L		818	778
Thallium	mg/L		< 0.00050	< 0.000040
Tin	mg/L		< 0.25	< 0.0040
Titanium	mg/L		< 0.25	< 0.01
Uranium	mg/L		< 0.0050	0.00264
Vanadium	mg/L		< 0.25	< 0.0040
Zinc	mg/L		< 0.25	0.0066
Zirconium	mg/L		< 0.0050	< 0.0020
WQ08- Radionuclides				
Radium-226	Bq/l		< 0.0050	< 0.0050

Sample date		8/19/2021	9/18/2021	9/18/2021	9/18/2021
Sample name		MWREF-A3 SURFACE	MWREFA-3-SURFACE	MWREFA-3-SURFACE DUP	MWREFA-3-SURFACE FB
Parameter	Unit				
WQ02- Conventional Parameters					
pH	pH units	7.86	7.86	7.87	6.24
Dissolved Oxygen	mg/L	11.6	10.8	10.7	10.9
Turbidity	NTU	< 0.1	< 0.1	< 0.1	< 0.1
Specific conductivity	umhos/cm	42000	42000	42000	1.3
Hardness, as CaCO3	mg/L	4960	5110	5020	< 0.50
Total alkalinity, as CaCO3	mg/L	110	100	100	< 1.0
Bicarbonate, as CaCO3	mg/L	100	100	100	< 1.0
TDS	mg/L	31000	29100	30400	< 10
TSS	mg/L	17	< 2.0	< 2.0	< 2.0
Total organic carbon	mg/L	1.3	1.2	1.3	< 0.40
Dissolved organic carbon	mg/L	1.2	1.1	1.1	< 0.40
WQ03- Major Ions					
Calcium	mg/L	350	330	290	< 0.30
Chloride	mg/L	16000	14000	14000	< 1.0
Cyanide	mg/L	0.0057	< 0.0050	< 0.0050	< 0.0050
Cyanide (free)	mg/L	0.0029	-	-	-
Fluoride	mg/L	0.65	0.62	0.62	< 0.10
Magnesium	mg/L	1100	1200	930	< 0.20
Potassium	mg/L	340	330	280	< 0.30
Silica	mg/L	0.19	0.18	0.18	< 0.050
Sodium	mg/L	8800	9400	7800	< 0.50
Sulfate	mg/L	2200	2200	2200	< 1.0
WQ04- Nutrients and Chlorophyll a					
Ammonia Nitrogen	mg/L	0.17	0.11	0.12	< 0.050
Nitrate	mg/L	< 0.10	< 0.10	< 0.10	< 0.10
Nitrite	mg/L	< 0.010	< 0.050	< 0.050	< 0.010
Nitrate + nitrite	mg/L	< 0.10	< 0.10	< 0.10	< 0.10
Total Kjeldahl nitrogen	mg/L	0.22	< 0.50	0.70	< 0.10
Total phosphorus	mg/L	< 0.040	0.051	0.043	< 0.040
Dissolved phosphorus	mg/L	-	0.041	< 0.04	< 0.0020
Orthophosphate (P)	mg/L	0.016	0.015	0.016	< 0.010
WQ06- Total Metals					
Aluminum	mg/L	< 0.15	0.02	0.014	0.00141
Antimony	mg/L	< 0.025	< 0.00040	< 0.00040	< 0.000020
Arsenic	mg/L	< 0.0050	0.00183	0.00181	< 0.000020
Barium	mg/L	< 0.050	0.00971	0.00853	< 0.000020
Beryllium	mg/L	< 0.0050	< 0.00020	< 0.00020	< 0.000010
Bismuth	mg/L	< 0.050	< 0.00010	< 0.00010	< 0.0000050
Boron	mg/L	3.9	3.78	3.8	< 0.01
Cadmium	mg/L	< 0.00050	< 0.00010	< 0.00010	< 0.0000050
Chromium	mg/L	< 0.050	< 0.0020	< 0.0020	< 0.00010
Cobalt	mg/L	< 0.010	< 0.00010	< 0.00010	< 0.0000050
Copper	mg/L	< 0.025	< 0.0010	< 0.0010	0.000223
Iron	mg/L	< 0.50	< 0.02	< 0.02	< 0.0010
Lead	mg/L	< 0.010	< 0.00010	< 0.00010	0.0000164
Lithium	mg/L	0.16	0.149	0.147	< 0.00050
Manganese	mg/L	< 0.050	0.0025	0.0014	< 0.000050
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0100	0.0095	< 0.000050
Nickel	mg/L	< 0.050	0.00067	0.00051	0.000199
Selenium	mg/L	< 0.0050	< 0.00080	< 0.00080	< 0.000040
Silicon	mg/L	< 5.0	< 1	< 1	< 0.05
Silver	mg/L	< 0.0010	< 0.00010	< 0.00010	< 0.0000050
Strontium	mg/L	7.03	7.01	6.98	< 0.000050
Sulphur	mg/L	793	828	803	< 3.0
Thallium	mg/L	< 0.00050	< 0.000040	< 0.000040	< 0.0000020
Tin	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Titanium	mg/L	< 0.25	< 0.01	< 0.01	< 0.00050
Uranium	mg/L	< 0.0050	0.00272	0.00272	< 0.0000020
Vanadium	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Zinc	mg/L	< 0.25	0.0034	0.0035	0.00115
Zirconium	mg/L	< 0.0050	< 0.0020	< 0.0020	< 0.00010
WQ07- Dissolved Metals					
Aluminum	mg/L	< 0.15	0.013	0.013	0.00136
Antimony	mg/L	< 0.025	< 0.00040	< 0.00040	< 0.000020
Arsenic	mg/L	< 0.0050	0.00207	0.00173	< 0.000020
Barium	mg/L	< 0.050	0.00946	0.00884	< 0.000020
Beryllium	mg/L	< 0.0050	< 0.00020	< 0.00020	< 0.000010
Bismuth	mg/L	< 0.050	< 0.00010	< 0.00010	< 0.0000050
Boron	mg/L	3.6	4.03	3.99	< 0.01
Cadmium	mg/L	< 0.00050	< 0.00010	< 0.00010	< 0.0000050
Chromium	mg/L	< 0.050	< 0.0020	< 0.0020	< 0.00010
Cobalt	mg/L	< 0.010	0.00012	< 0.00010	< 0.0000050
Copper	mg/L	< 0.010	< 0.0010	< 0.0010	0.000181
Iron	mg/L	< 0.25	< 0.02	0.026	0.0011
Lead	mg/L	< 0.010	< 0.00010	< 0.00010	< 0.0000050
Lithium	mg/L	0.15	0.15	0.147	< 0.00050
Manganese	mg/L	< 0.050	0.0011	< 0.0010	< 0.000050
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	< 0.050	0.0099	0.0097	< 0.000050
Nickel	mg/L	< 0.050	0.00067	0.00059	0.000040
Selenium	mg/L	< 0.0050	< 0.00080	< 0.00080	< 0.000040
Silicon	mg/L	< 5.0	< 1	< 1	< 0.05
Silver	mg/L	< 0.0010	< 0.00010	< 0.00010	< 0.0000050
Strontium	mg/L	7.12	7.27	7.06	< 0.000050
Sulphur	mg/L	795	835	811	< 3.0
Thallium	mg/L	< 0.00050	< 0.000040	< 0.000040	< 0.0000020
Tin	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Titanium	mg/L	< 0.25	< 0.01	< 0.01	< 0.00050
Uranium	mg/L	< 0.0050	0.00279	0.00278	< 0.0000020
Vanadium	mg/L	< 0.25	< 0.0040	< 0.0040	< 0.00020
Zinc	mg/L	< 0.25	0.0033	0.0053	0.00019
Zirconium	mg/L	< 0.0050	< 0.0020	< 0.0020	< 0.00010
WQ08- Radionuclides					
Radium-226	Bq/l	< 0.0050	< 0.0050	< 0.0050	< 0.0050