Woodfibre LNG Air Quality Monitoring Station Report for December 2024

February 4, 2025

Prepared for:
Woodfibre LNG General Partner Inc.

Prepared by:
Stantec Consulting Ltd.

Project/File:
123222160

Stantec

Limitations and Sign-off

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Prepared by: Digitally signed by Dr. Kashif I. Choudhry, P.Eng. Date: 2025.02.05 09:58:15 -06'00'

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Signature

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Printed Name

Approved by: Adriana MacLeod Digitally signed by Adriana MacLeod Date: 2025.02.05 08:35:28 -08'00'

Signature

Adriana MacLeod, B.Sc.

Printed Name

Executive Summary

This report provides a summary of the ambient air quality monitoring data for December 2024 that has been collected in fulfilment of the requirements established in the Floatel Air Quality Management and Monitoring Plan (Rev 6, July 5, 2024) (Woodfibre LNG, 2024). Table E.1 below presents the monthly averages, ranges, and maximum values for key air contaminants for December 2024, along with additional information on any air quality exceedances and complaints received during this period. This report provides an overview of air quality conditions and any regulatory compliance actions taken during December 2024.

Table E.1 December 2024 Air Quality Monitoring Station Summary

Air Contaminant		Units	Monthly Average	Monthly Range (Min - Max)
$PM_{2.5}$ (24-hour average)		µg/m³	5	3 - 11
PM_{10} (24-hour average)		µg/m³	10	6 - 29
TSP (24-hour average)		µg/m³	23	15 - 80
NO_2 (24-hour average)		ppb	3.5	3.3 -14.4
NO_2 (1-hour average)		ppb	8.6	0.6 - 40.2
SO_2	(Dec 2, 2024 – Jan 7, 2025)	ppb	<0.2*	
VOC as Hexane			4.3	
Number of Air Quality Exceedances Recorded			None	
Number of Complaints Received			None	

Note:

* Concentrations below the Reported Detection Limit (RDL) are indicated with a '<' symbol.

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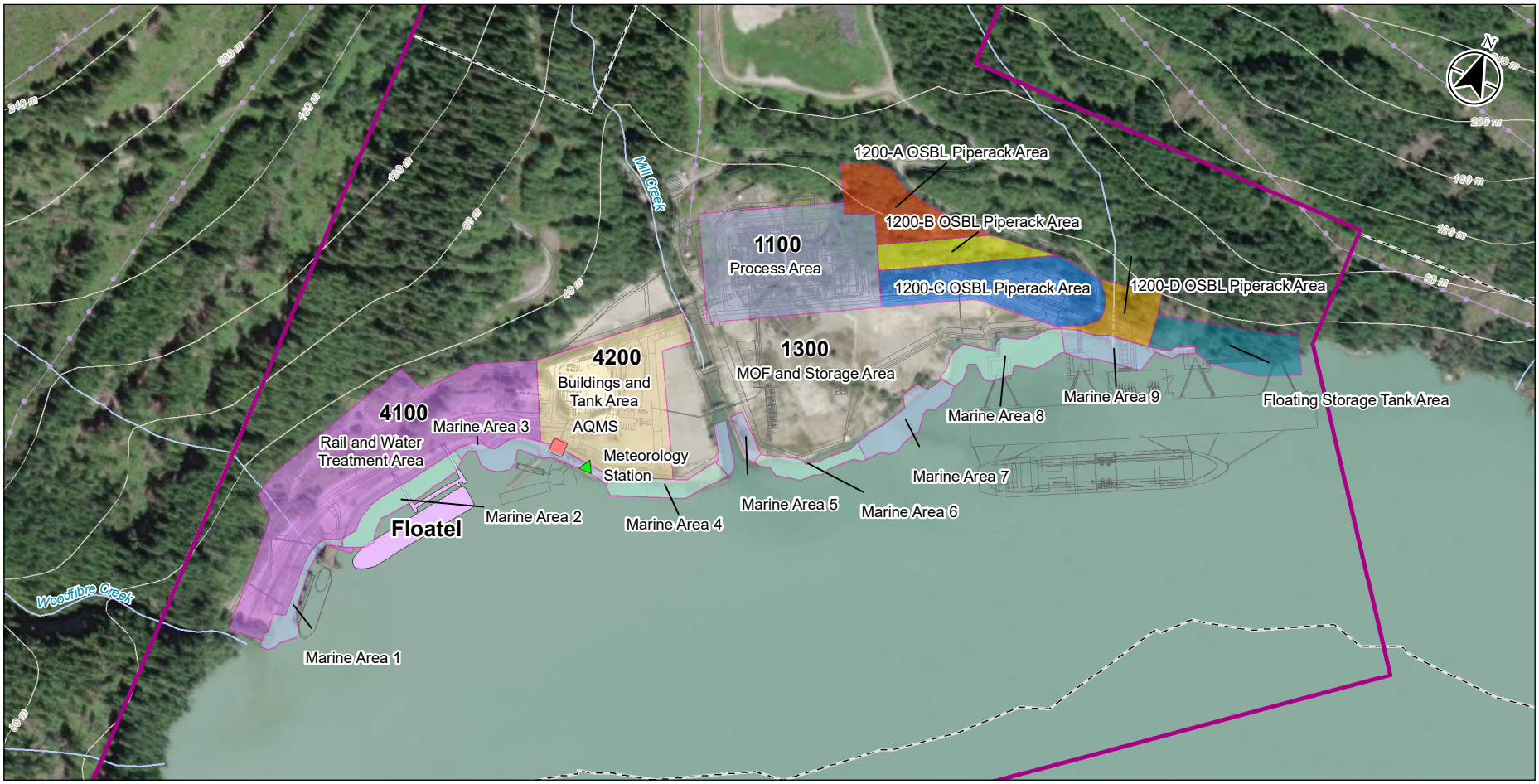
Acronyms / Abbreviations

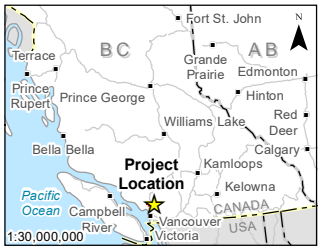
AGAT	AGAT Laboratories
AQMS	Air Quality Monitoring Station
AQO	British Columbia Air Quality Objective(s)
BC	British Columbia
BC ENV	British Columbia Ministry of Environment and Parks
CAAQS	Canadian Ambient Air Quality Standard(s)
CCME	Canadian Council of Ministers of the Environment
EAO	British Columbia Environmental Assessment Office
Floatel	The marine-based work camp, associated facilities and mooring infrastructure dedicated to house approximately 650 Workers during the Construction and Operations of the Project
FAQMMP	Floatel Air Quality Monitoring and Mitigation Plan
FEM	Federal Equivalent Method
NO_2	Nitrogen Dioxide
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter (less than 2.5 microns (µm) in aerodynamic diameter)
PM_{10}	Particulate Matter (less than 10 microns (µm) in aerodynamic diameter)
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
TSP	Total Suspended Particulate
US EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
Woodfibre LNG	Woodfibre LNG General Partner Inc.

1 Introduction

Woodfibre LNG General Partner Inc. (Woodfibre LNG) is developing the Woodfibre Liquefied Natural Gas Project (the Project) at the former Woodfibre Pulp Mill site, approximately seven kilometres southwest of Skwxwú7mesh (Squamish), British Columbia (BC). To support onsite air quality monitoring, Stantec Consulting Ltd. ("Stantec") prepared the Floatel Air Quality Monitoring and Mitigation Plan (FAQMMP; Rev 6, July 5, 2024) on behalf of Woodfibre LNG (Woodfibre LNG, 2024). The FAQMMP was developed to address regulatory compliance conditions issued by the Environmental Assessment Office (EAO) on November 1, 2023, as part of Amendment #3 (EAO, 2023), including Condition 30, which pertains specifically to Floatel air quality monitoring. The monitoring is intended to demonstrate compliance with air quality standards and assists Woodfibre LNG in determining whether mitigation during the Project's construction phase is required. Further details regarding the purpose, duration, and compliance framework are available in the FAQMMP Rev 6 July 5, 2024 (Woodfibre LNG, 2024). Woodfibre LNG contracts AGAT Laboratories (AGAT) to provide an air quality monitoring station (AQMS) rental, including installation, operation and quarterly maintenance and calibration services. The AQMS continuously measures $PM_{2.5}$, PM_{10}, TSP, and NO_2 concentrations, along with passive sampling and analysis for SO_2 and VOCs. Stantec performs data processing, quality assurance, and quality control (QA/QC) of the air quality monitoring equipment, and the data presented in this monthly report is based on a Level 0 data validation as described by the British Columbia Field Sampling Manual – Part B (BC ENV, 2020).

The location of the AQMS (UTM Easting 481,569 m and Northing 5,501,374 m, NAD83 datum, zone 10U) is adjacent to the existing meteorology station (UTM Easting 481,610 m and Northing 5,501,369 m, NAD83 datum, zone 10U) currently in operation at Woodfibre LNG site as recommended in the FAQMMP. Figure 1.1 provides a map of the Woodfibre LNG site. This December 2024 monthly air quality report provides data on air quality and meteorology conditions monitored at the Woodfibre LNG Project site close to the Floatel. The monitoring and reporting support regulatory compliance. These monthly reports track air quality trends, address potential issues, and help the Project meet project-specific and regulatory requirements.





Transmission Line
Topographic Contour
Watercourse
Municipal Boundary
Project Design Linework
Floatel
Certified Project Area
AQMS
Meteorology Station

0 50 100 150 200 250 m
1:7,500 (at original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Data Sources: DataBC, Government of British Columbia; Natural Resources Canada
3. Orthoimagery: ESRI World Imagery

Stantec

Project Location:
Woodfibre, British Columbia

Project Number: 123222160
Prepared by JPOUCHER on 20250103
Requested by KCHUEN on 20250103
Checked by YMA on 20240828

Client/Project/Report

Woodfibre LNG

Figure No.
1.1

Title
Map of Woodfibre LNG Site

2 Key Components Assessed

Two key sets of measurements are reported: a) meteorological data, including ambient temperature, wind speed and direction, and total rainfall, and b) ambient concentrations of air contaminants measured at the AQMS.

2.1 Meteorology

Meteorology data supporting the Woodfibre LNG AQMS are acquired from the nearby WLNG meteorology station. This meteorology data supports the long-term ambient air quality monitoring collected at the site. The meteorology variables measured at the station are listed in Table 2.1. While the table includes all measured parameters, this report explicitly presents data for wind, air temperature, and rainfall only, excluding pressure and relative humidity.

Table 2.1 Parameters Measured at the WLNG Meteorological Station

Parameter	Units
Wind Speed	m/s
Wind Direction	Degrees
Air Temperature	°C
Rainfall	mm
Barometric Pressure	hPa
Relative Humidity	%

2.2 Air Contaminants of Interest

The air contaminants being measured are described below according to the type of monitoring.

2.2.1 Continuous Sampling

- Particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$)
- Particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10})
- Total suspended particulate (TSP)
- Nitrogen dioxide (NO_2)

2.2.2 Passive Sampling

- Sulfur dioxide (SO_2)
- Volatile organic compounds (VOCs)

2.3 Air Quality Criteria

The air contaminants monitored at the AQMS, along with their corresponding Canadian Ambient Air Quality Standards (CAAQS) (CCME, 2024) and British Columbia Air Quality Objectives (BCAQO) (BC ENV, 2021) regulatory criteria, are presented in Table 2.2 and Table 2.3, respectively.

Table 2.2 Summary of Current and 2025 Canadian Ambient Air Quality Standards for the Contaminants of Potential Concern

Substance	Averaging Period	Concentration [a]			
		($\mu g/m^3$) [b,c]		(ppbv) [d]	
		2020	2025	2020	2025
Nitrogen Dioxide (NO_2)	1-hour [e]	113	79	60	42
	Annual [f]	32	23	17.0	12.0
Sulphur Dioxide (SO_2)	1-hour [g]	183	170	70	65
	Annual [h]	13	10.4	5.0	4.0
Fine Particulate Matter ($PM_{2.5}$)	24-hour [i]	27	— [j]	—	—
	Annual [k]	8.8	— [j]	—	—

Notes:

[a] Canadian Ambient Air Quality Standards (CCME, 2024) for 2020 and 2025.
[b] $\mu g/m^3$ is the mass of the substance in micrograms per cubic meter of air.
[c] Standard conditions of 25°C and 101.325 kPa are used to convert from $\mu g/m^3$ to ppbv.
[d] ppbv is the volume of the substance (parts) per billion volumes of air.
[e] The 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentration.
[f] The average over a single calendar year of all 1-hour average concentrations.
[g] The 3-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations.
[h] The average over a single calendar year of all 1-hour average concentrations.
[i] The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.
[j] Currently under review by the CCME
[k] The 3-year average of the annual average of the daily 24-hour average concentrations.

Table 2.3 British Columbia Ambient Air Quality Objectives (BC ENV, 2021)

Substance	Averaging Period	Air Quality Objective [a]	
		µg/m^3 [b,c]	ppbv [d]
Nitrogen Dioxide (NO_2)	1-hour [e]	113	60
	Annual [f]	32	17
Sulphur Dioxide (SO_2)	1-hour [g]	183	70
	Annual [h]	13	5
Fine Particulate Matter ($PM_{2.5}$)	24-hour [i]	25	—
	Annual [j]	8.0	—
Coarse Particulate Matter (PM_{10})	24-hour	50	—
Total Suspended Particulate (TSP)	24-hour	120	—
	Annual [k]	60	—

Notes:

[a] British Columbia Air Quality Objectives (BC ENV, 2021).
[b] µg/m^3 is the mass of the substance in micrograms per cubic meter of air.
[c] Standard conditions of 25°C and 101.325 kPa are used to convert from µg/m^3 to ppbv.
[d] ppbv is the volume of the substance (parts) per billion volumes of air.
[e] Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.
[f] Achievement based on annual average of 1-hour average concentrations over one year.
[g] Achievement based on annual 99th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.
[h] Achievement based on annual average of 1-hour concentrations over one year.
[i] Achievement based on annual 98th percentile of daily average, averaged over one year.
[j] Achievement based on annual average, averaged over one year.
[k] Based on geometric mean.

3 Instrument Summary

Woodfibre LNG contracts AGAT for the rental, operation and quarterly servicing of the AQMS. The station is currently being operated by AGAT to measure the ambient concentrations of the air contaminants mentioned above. The first quarterly maintenance and calibration were completed by AGAT on November 26 - 27, 2024 and the next quarterly maintenance and calibration is scheduled in February 2025. On December 11, between 12:00 and 13:00, the sampling time for the BAM $PM_{2.5}$ instrument was adjusted from 50 minutes to 42 minutes by AGAT to meet the United States Environmental Protection Agency (US EPA) Federal Equivalent Method (FEM) requirements for $PM_{2.5}$ monitoring (BC ENV, 2020 and Met One Instruments 2024). The instrument was intended to operate as a FEM-designated method; however, the AGAT technician set the sampling time to 50 minutes instead of 42 minutes, so it operated as a non-designated method for $PM_{2.5}$ monitoring between November 27, 2024 and December 11, 2024. The data collected while the instrument was operating with a 50-minute sampling time remains valid because the BAM was operating without any errors; however, it falls under a non-designated measurement method rather than the US EPA FEM-approved configuration. The adjustment to 42 minutes is compliant with FEM requirements moving forward.

The passive sampling of SO_2 and VOCs uses AGAT's Passive Sampler system. WLNG personnel exchange the monthly samples and submit them to AGAT for laboratory analysis.

Table 3.1 Summary of Instrumentation used at the WLNG Air Quality Monitoring Station

Parameter	Instrumentation
$PM_{2.5}$, PM_{10}, and TSP	Met One Instruments BAM 1020 Beta Attenuation Mass Monitors
NO_2	Thermo Fisher Scientific – Model 42i (NO-NO_2-NO_x) Analyzer
SO_2 and total VOCs	AGAT's Passive Sampler system

3.1 Continuous Monitoring of PM and NO_2

Particulate matter ($PM_{2.5}$, PM_{10}, and TSP) was continuously monitored following the Standard Operating Procedure for the Continuous Measurements of Ambient PM Using a Beta Attenuation Monitor (Reference No: SOP-05a). The NO_2 concentrations were continuously monitored following the Standard Operating Procedure for the Continuous Measurement of Ambient NOx (Reference No: SOP-03) in Part B1 of the British Columbia Field Sampling Manual (BC ENV, 2020).

3.2 Passive Monitoring of SO_2 and VOC

The SO_2 and VOC ambient concentrations were monitored following the Standard Operating Procedure for the Passive/Diffusive Method of Air Sample Collection (Reference No: SOP-07) in Part B1 of the British Columbia Field Sampling Manual (BC ENV, 2020).

4 Ambient Air Quality Monitoring Results

The measured data presented for passive and continuous monitoring includes a) ambient air quality data collected at the AQMS (Appendix A), and b) meteorology data acquired from the Woodfibre LNG meteorology station. The daily air quality and meteorological data are included in Appendix B, Table B.1 and Table B.2.

4.1 Continuous Monitoring of PM and NO_2

A summary of the hourly ambient air monitoring results for $PM_{2.5}$, PM_{10}, TSP, and NO_2 for December 2024 is presented in Appendix A, Figure A.1 to Figure A.5, along with the corresponding regulatory criteria and comparisons with Langdale (BC ENV, 2024a) and Squamish (BC ENV, 2024b) regional air quality monitoring stations. Langdale and Squamish were selected as reference points due to their relative proximity to the WLNG construction site and the availability of relevant air quality data. BC ENV air quality monitoring station at Langdale Elementary provides measurements for $PM_{2.5}$, PM_{10}, NO_2, and SO_2, while Squamish Elementary monitors $PM_{2.5}$, NO_2, and SO_2. There are no BC ENV air quality monitoring stations near the Woodfibre LNG project site that measure TSP and VOCs. The hourly air quality objective threshold for NO_2 is based on the 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentration (CCME 2024; BC ENV 2021).

During December 2024, the hourly $PM_{2.5}$ concentrations ranged from 0[1] to 29 µg/m³, the hourly PM_{10} concentrations ranged from 1 to 100 µg/m³, the hourly TSP concentrations ranged from 8 to 308 µg/m³, and the hourly NO_2 concentrations ranged from 0.6 to 40.2 ppb. The hourly results for the NO_2 monitoring during this period were less than the BCAQO threshold value of 60 ppb.

Similarly, a summary of the daily (24-hour average) ambient air quality monitoring results for $PM_{2.5}$, PM_{10}, TSP, and NO_2 for December 2024 is presented in Table E.1 and Figure A.6 to Figure A.10 (Appendix A), with corresponding regulatory criteria and comparisons with Langdale and Squamish regional air quality monitoring stations. It is important to note that on December 11, between 12:00 and 13:00, AGAT adjusted the sampling time for the BAM $PM_{2.5}$ instrument from 50 minutes to 42 minutes to meet the US EPA FEM requirements for $PM_{2.5}$ monitoring (BC ENV, 2020 and Met One Instruments 2024). The instrument was intended to operate as a FEM-designated method; however, the AGAT technician set the sampling time to 50 minutes instead of 42 minutes, so it operated as a non-designated method for $PM_{2.5}$ monitoring before this adjustment. The $PM_{2.5}$ data collected during the 50-minute interval remains valid and was used in the comparison with the BCAQO. The 24-hour regulatory standards for PM_{10} and TSP monitoring are 50 µg/m³ and 120 µg/m³, respectively. The 24-hour BCAQO threshold value for $PM_{2.5}$

[1] The BAM 1020 instrument recording the $PM_{2.5}$ concentrations may occasionally report slightly negative values when the are very low. Therefore, both the BCFSM (BC ENV 2020) and the National Air Pollution Surveillance (NAPS, CCME 2019) program provide data validation criteria for $PM_{2.5}$ measurements: values between -3 and 0 µg/m³ are adjusted to 0, while values below -3 µg/m³ are flagged as invalid. This approach has been followed for $PM_{2.5}$ data validation program.

is 25 µg/m³, based on the 3-year average of the annual 98th percentile of the daily 24-hour average concentrations (CCME 2024; BC ENV, 2021).

During December 2024, 24-hour average concentrations of $PM_{2.5}$ ranged from 3 to 11 µg/m³, 24-hour average concentrations of PM_{10} ranged from 6 to 29 µg/m³, 24-hour average concentrations of TSP ranged from 15 to 80 µg/m³, and 24-hour average concentrations of NO_2 ranged from 3.3 to 14.4 ppb.

The 24-hour average $PM_{2.5}$ and NO_2 concentrations recorded at the WLNG AQMS site were generally higher than those observed at the regional air quality monitoring stations in Langdale and Squamish, which is expected given the proximity of the AQMS site to active construction activities. In contrast, PM_{10} concentrations were comparable or lower than those at the Langdale Elementary regional air quality monitoring station, except on December 11 when a much higher 24-hour average PM_{10} concentration (29 µg/m^3) was recorded at the AQMS site. However, the recorded PM_{10} concentrations remained below the BC AQO (50 µg/m^3).

The available data (September to December) is insufficient to perform a valid comparison with the annual thresholds set for NO_2, $PM_{2.5}$, and TSP by BCAQO and CAAQS. However, the monthly averages for NO_2 from September to December 2024, are 6.2 ppb in September, 3.6 ppb in October, 3.5 ppb in November, and 8.7 ppb in December, with a four-month average of 5.5 ppb. These values are consistently below the BCAQO and CAAQS annual threshold of 17 ppb.

For $PM_{2.5}$, the four-month average from September to December is 9.6 µg/m³. This is higher than the BCAQO and CAAQS annual threshold values of 8.0 and 8.8 µg/m³, respectively. However, this four-month average does not represent a yearly valid average for comparison with these thresholds due to the limited duration of monitoring data. The $PM_{2.5}$ monthly average concentrations show a decreasing trend, with the highest concentration of 11.8 µg/m³ in September and the lowest monthly average of 5.4 µg/m³ in December.

Similarly, for TSP, the four-month average from September to December is 37.2 µg/m³. The monthly averages for TSP are 45.4 µg/m³ in September, 36.7 µg/m³ in October, 43.4 µg/m³ in November, and 23.3 µg/m³ in December. These values remain below the BCAQO annual threshold of 60 µg/m³.

A summary of the 24-hour average $PM_{2.5}$, PM_{10}, TSP and NO_2 concentrations in December 2024 is presented in Appendix B, Table B.1. The results for $PM_{2.5}$, PM_{10}, and TSP were less than the BCAQO threshold values of 25 µg/m³, 50 µg/m³, and 120 µg/m³, respectively, and no air quality exceedances were recorded for any contaminant. Additionally, no complaints were received from the Floatel residents during December that required further investigation or mitigation actions. The weekly AQMS reports are presented in Appendix D.

4.2 Passive Monitoring of SO_2 and VOC

Passive samples for SO_2 and total VOCs were swapped on December 2, 2024. This report includes the results for samples collected for the exposure period from December 2, 2024, to January 7, 2025. The laboratory analysis reports are presented in Appendix C.

The results for SO_2 and VOC samples collected between December 2, 2024, and January 7, 2025, show an ambient average SO_2 concentration of <0.2 ppb and an ambient average VOC concentration of 4.3 ppb. The instrument-reported detection limits (RDL) are 0.2 ppb and 0.7 ppb, respectively. In comparison, the regional monitoring stations reported higher ambient SO_2 concentrations in December 2024, with Squamish Elementary recording 0.1 ppb and Langdale Elementary recording 0.6 ppb. The measured SO_2 concentration at the AQMS remained below 0.2 ppb, meaning it was similar to or lower than the levels recorded at Squamish Elementary and lower than those at Langdale Elementary regional air quality station.

4.3 Meteorology

A summary of the meteorology conditions in December 2024 is presented in Appendix B, Table B.2. Daily average and maximum wind speeds are shown in Figure A.11. The highest hourly wind speed was recorded on December 7, 2024, at 11:00 (12.0 m/s), and the highest 24-hour average wind speed occurred on December 14 (2.5 m/s). Figure A.12 presents a wind rose illustrating wind direction and speed for December 2024 at the WLNG meteorological station. The prevailing wind direction is from the northwest quadrant, with secondary predominant winds from the southwest. Additionally, Figure A.13 includes four wind roses capturing specific time intervals: between 3:00 and 8:00 hours, 9:00 and 12:00 hours, 13:00 and 19:00 hours, and 20:00 and 02:00 hours throughout December 2024.

The daily ambient temperature data is presented in Figure A.14. The maximum hourly temperature of 13.1°C was recorded on December 4, 2024, at 13:00, while the minimum hourly temperature of 0.9°C occurred on December 10, 2024, at 02:00. The monthly average temperature for December 2024 was 5.1°C

The daily and total monthly rainfall data, presented in Figure A.15 and Appendix B, Table B.2, show that the highest single-day rainfall of 48.6 mm occurred on December 19, 2024. The total rainfall for December 2024 was 428.6 mm.

5 Summary of Ambient Air Quality Monitoring Results

The ambient air quality monitoring results for December 2024 indicate that $PM_{2.5}$, PM_{10}, and TSP concentrations remained less than the BC Air Quality Objective threshold values, with no exceedances recorded. The measured nitrogen dioxide (NO_2) concentrations were less than the regulatory limits. The meteorology data, including wind speed, temperature, and rainfall, supported accurate interpretation of air quality trends. No complaints from the Floatel residents were received that required further investigation or a mitigation plan during December 2024.

6 References

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Appendices

Appendix A Figures

Figure A.1 Hourly PM Concentrations Recorded at the AQMS for December 2024

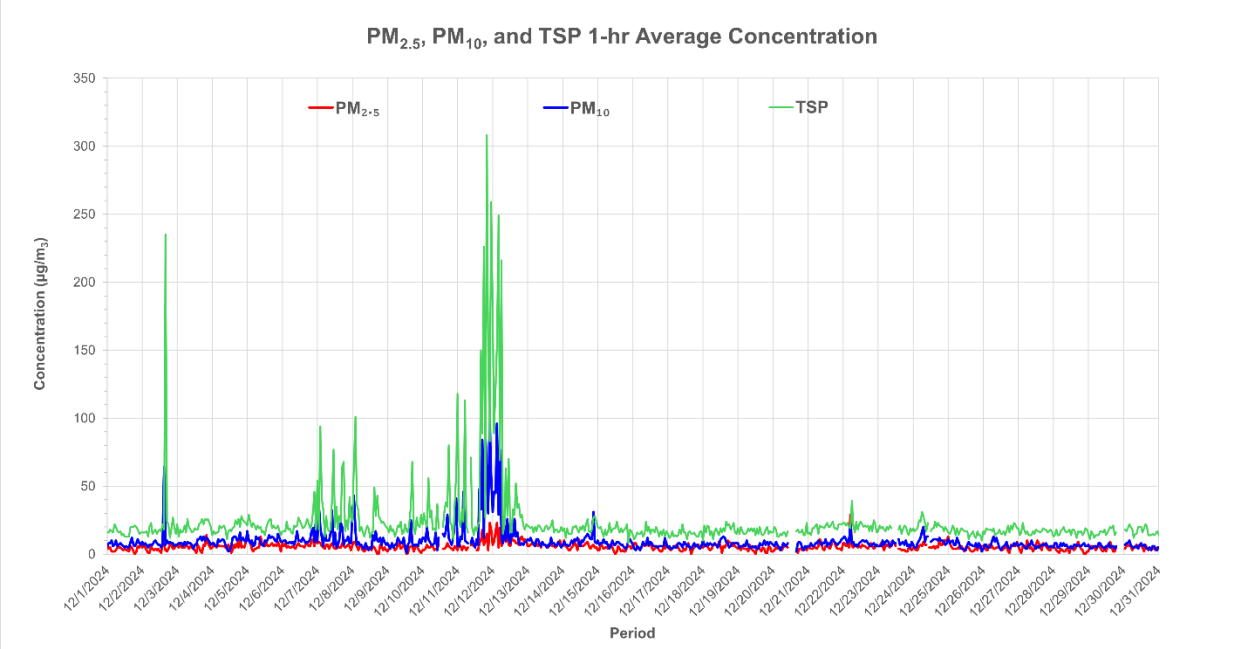


Figure A.2 Hourly $PM_{2.5}$ Concentrations Recorded at the AQMS, and the Langdale and Squamish Regional Air Quality Stations for December 2024

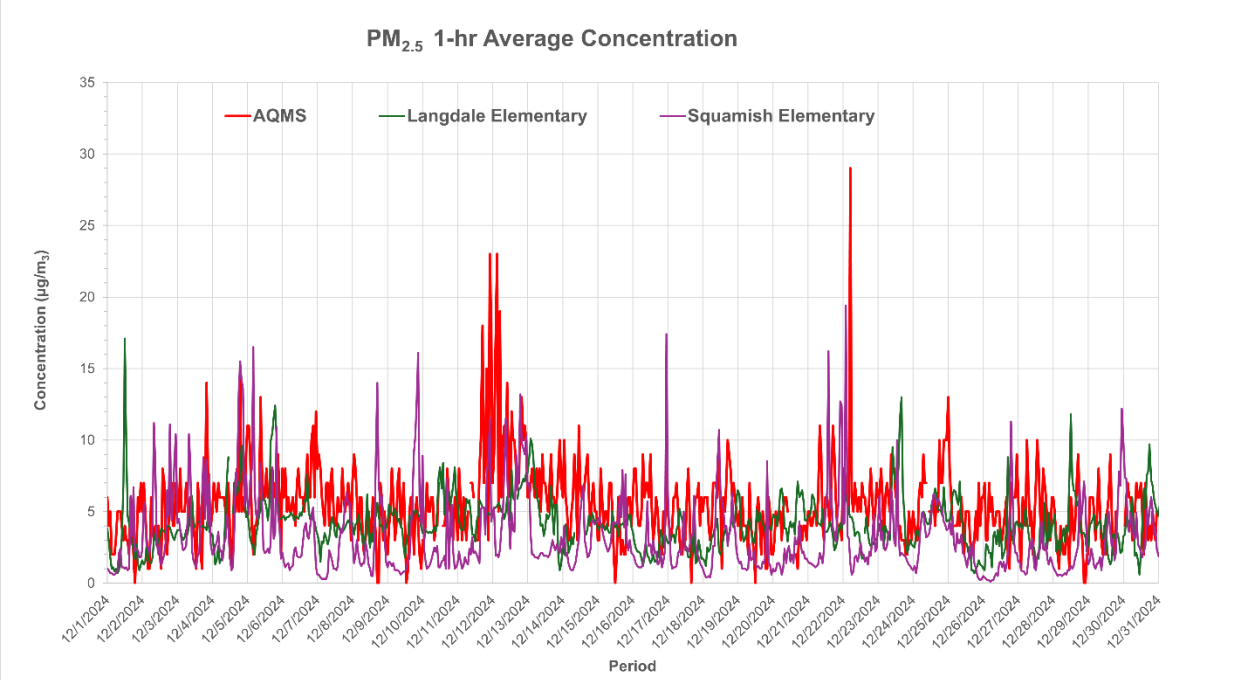


Figure A.3 Hourly PM_{10} Concentrations Recorded at the AQMS, and the Langdale Regional Air Quality Station for December 2024

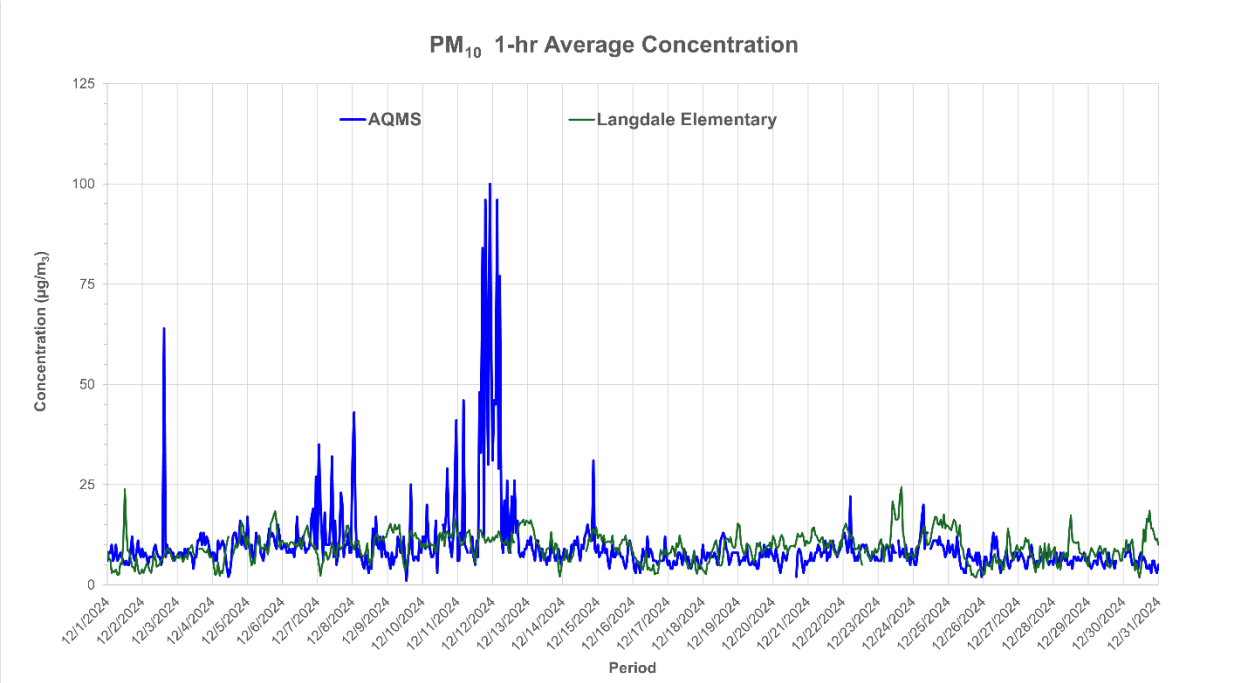


Figure A.4 Hourly TSP Concentrations Recorded at the AQMS for December 2024

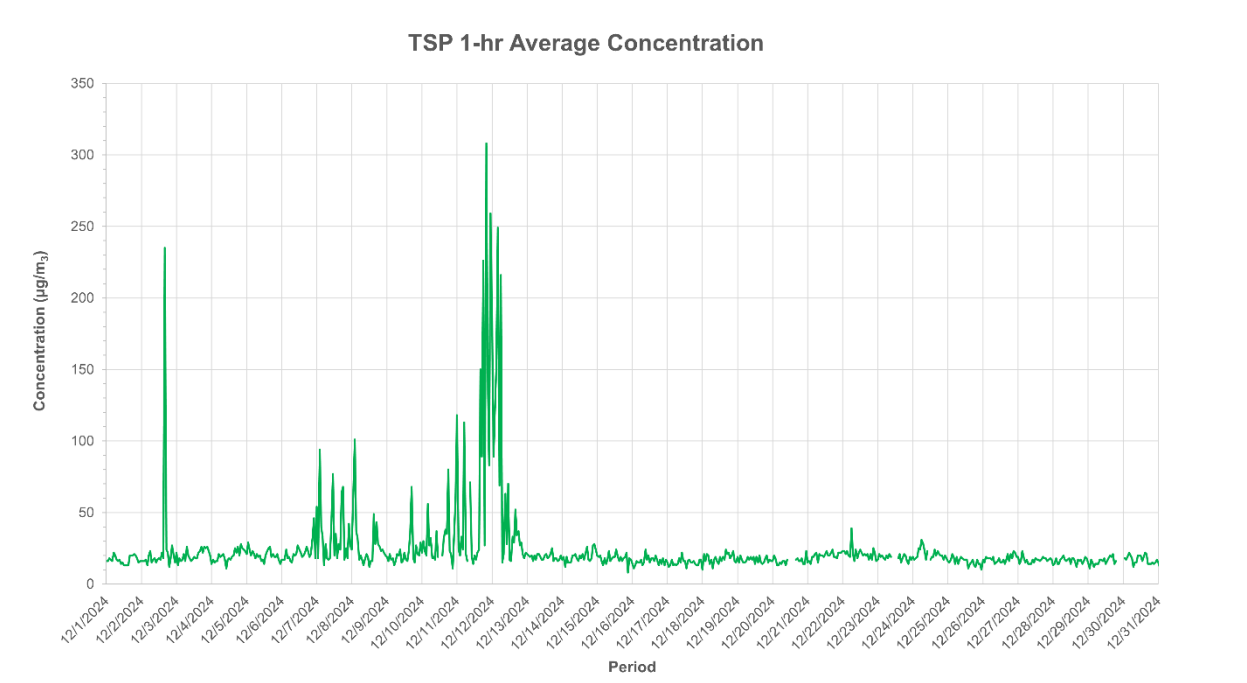


Figure A.5 Hourly NO_2 Concentrations Recorded at the AQMS, and the Langdale and Squamish Regional Air Quality Stations for December 2024

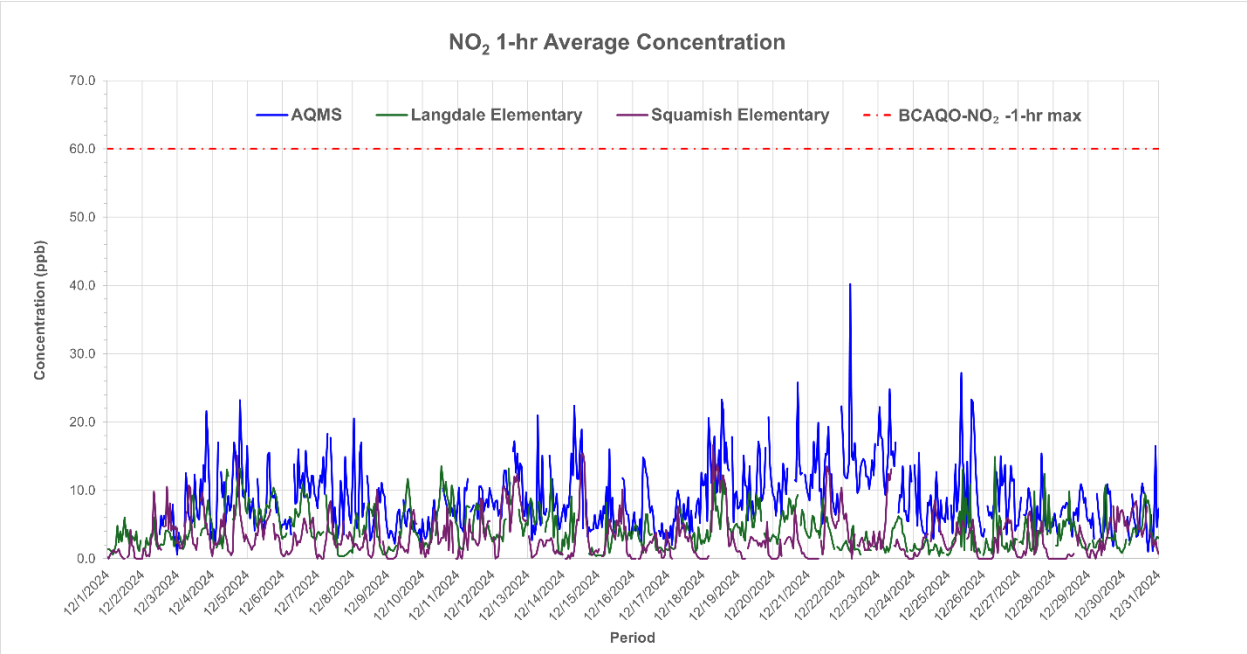


Figure A.6 24-Hour Average PM Concentrations Recorded at the AQMS for December 2024

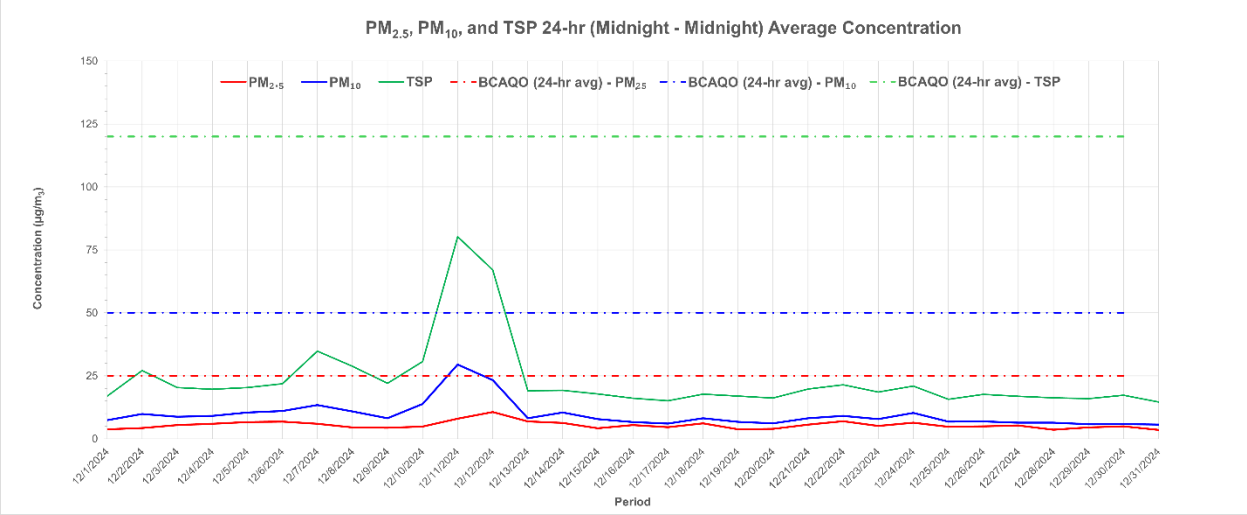


Figure A.7 24-Hour Average $PM_{2.5}$ Concentrations Recorded at the AQMS, and the Langdale and Squamish Regional Air Quality Stations for December 2024

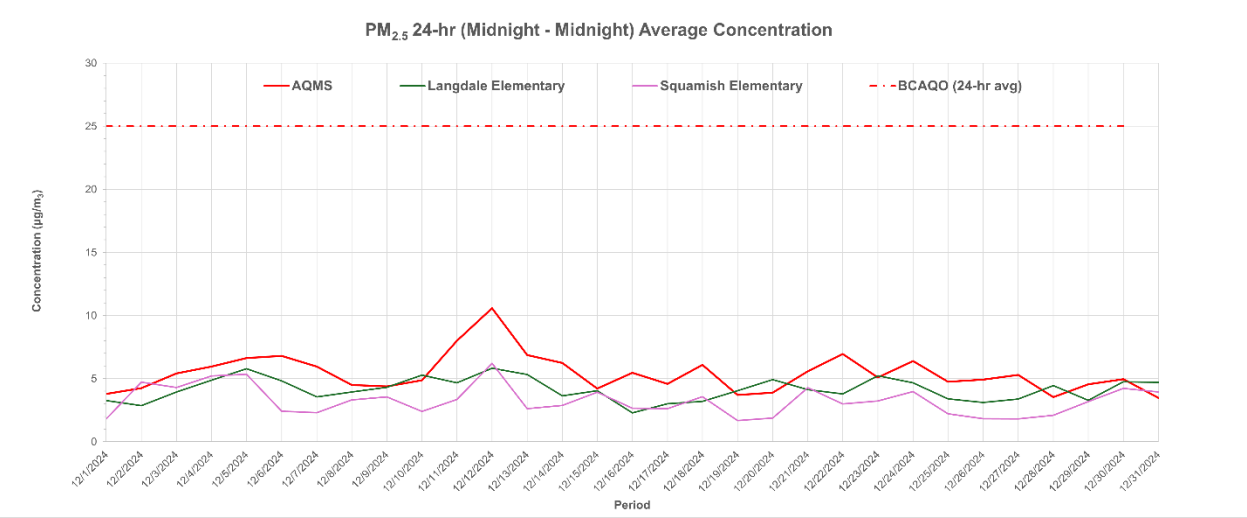


Figure A.8 24-Hour Average PM_{10} Concentrations Recorded at the AQMS, and the Langdale Regional Air Quality Station for December 2024

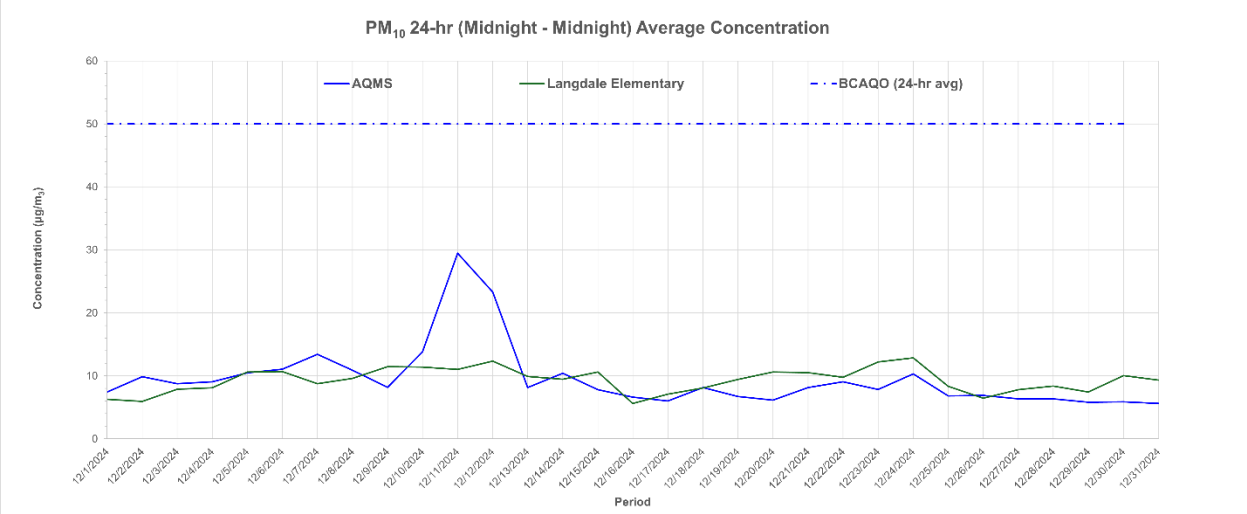


Figure A.9 24-Hour Average TSP Concentrations Recorded at the AQMS for December 2024

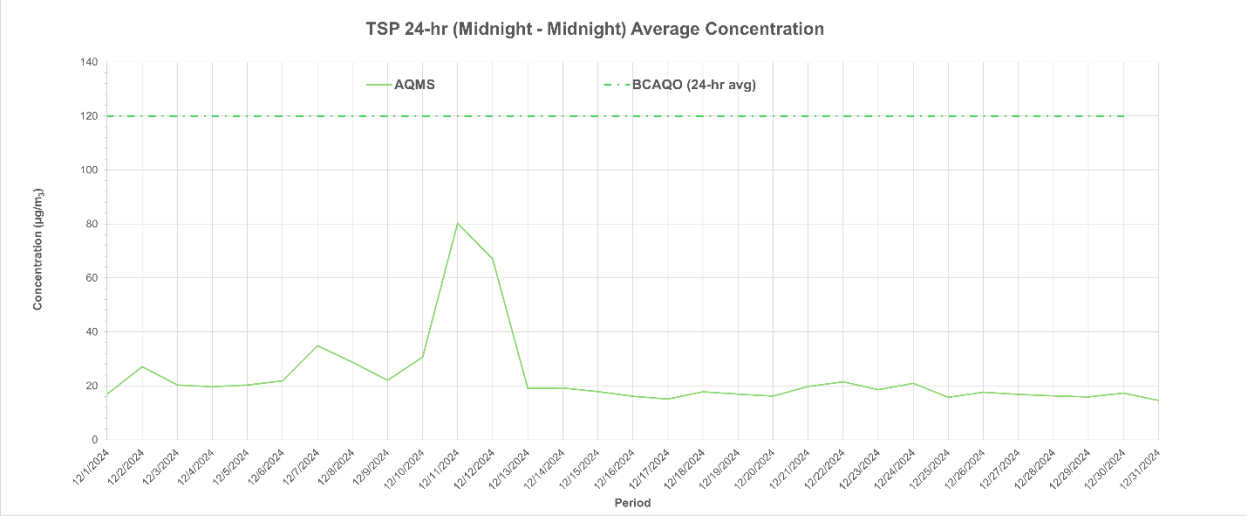


Figure A.10 24-Hour Average NO_2 Concentrations Recorded at the AQMS, and the Langdale and Squamish Regional Air Quality Stations for December 2024

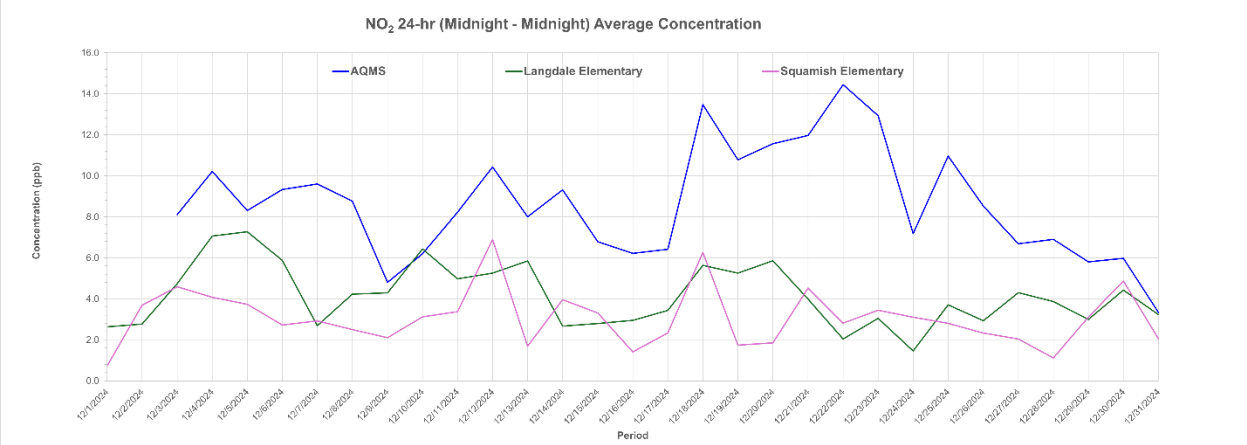


Figure A.11 Daily Average and Maximum Wind Speed Recorded at the Woodfibre LNG Meteorology Station for December 2024

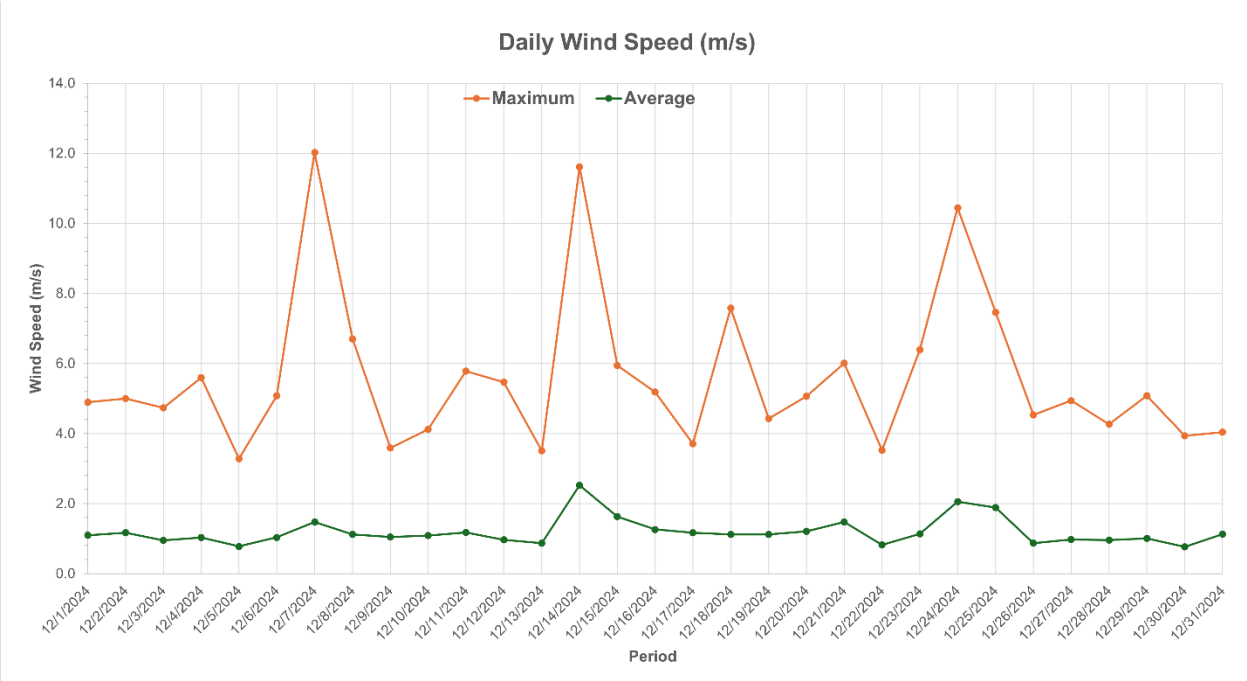


Figure A.12 Windrose for Woodfibre LNG Meteorology Station for December 2024

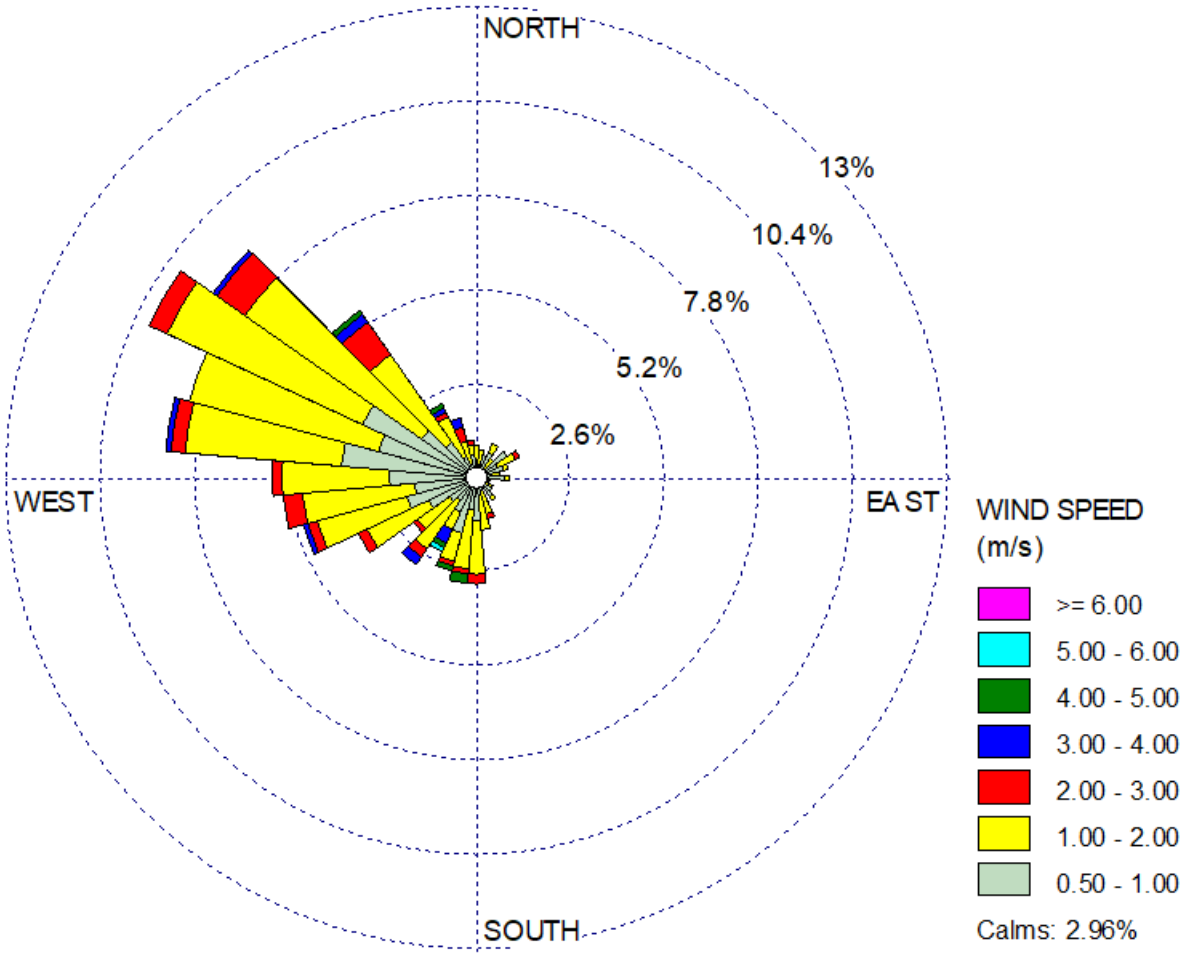


Figure A.13 Windrose for Woodfibre LNG Meteorology Station for Time Periods Hours 3 - 8, 9 - 12, 13 - 19, and 20 - 2 for December 2024

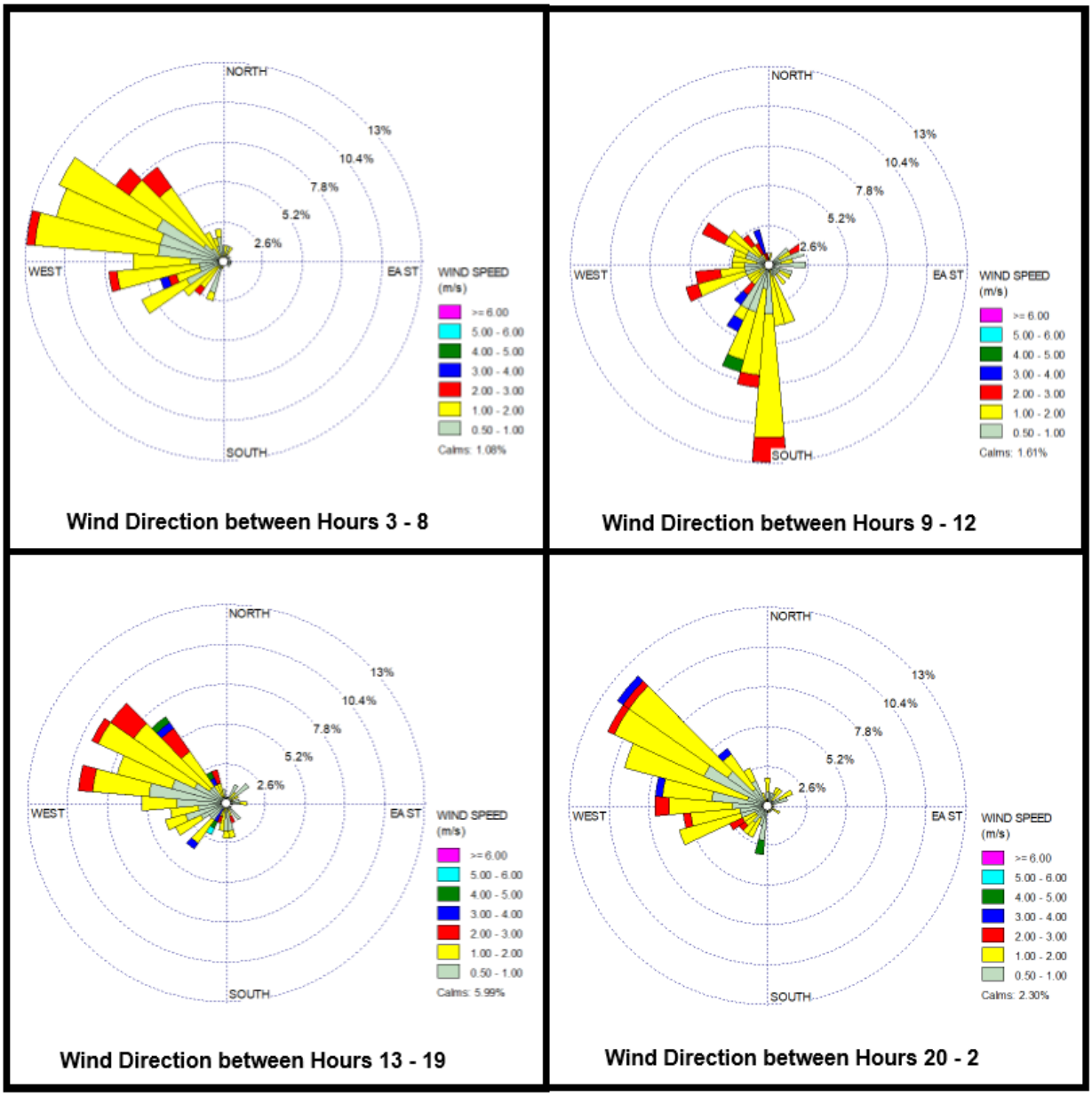


Figure A.14 Daily Average, Minimum, and Maximum Air Temperature Recorded at the Woodfibre LNG Meteorology Station for December 2024

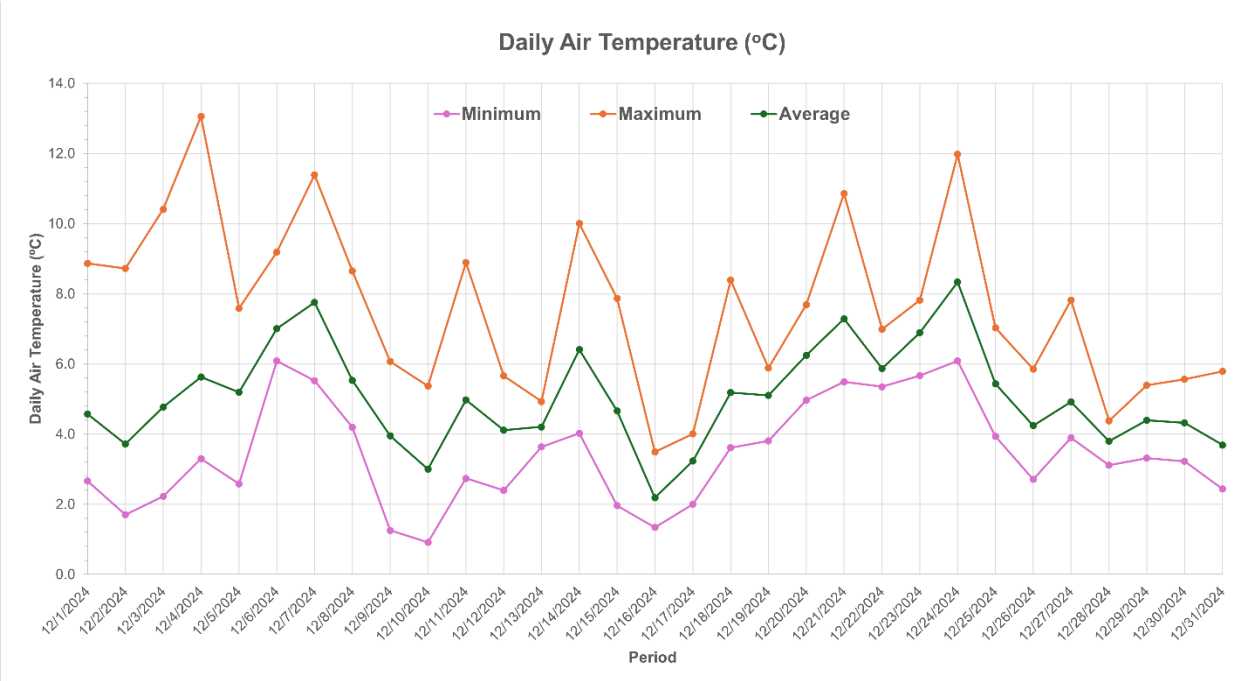
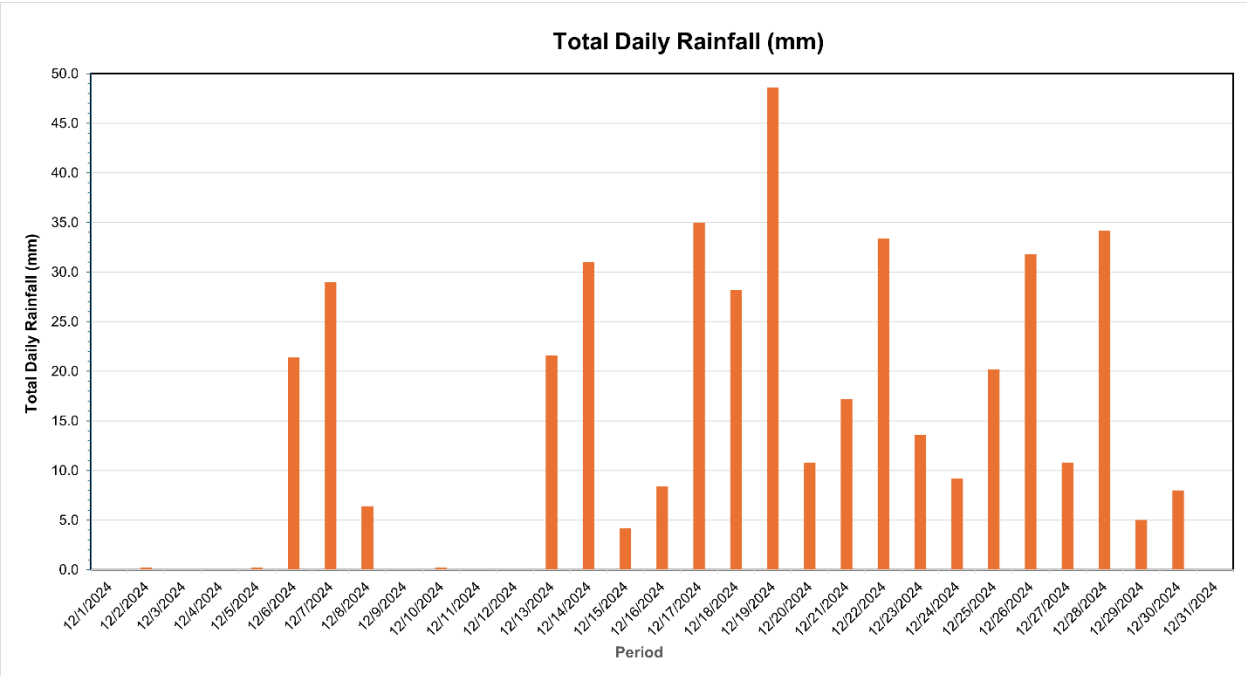


Figure A.15 Daily Rainfall Recorded at the Woodfibre LNG Meteorology Station for December 2024



Appendix B Data Tables

Table B.1 Daily $PM_{2.5}$, PM_{10}, TSP, and NO_2 Concentrations Recorded at the AQMS for December 2024

Date	AQMS (24-hr Average)				AQMS (1-hr Max)
	$PM_{2.5}$	PM_{10}	TSP	NO_2	NO_2
	µg/m³	µg/m³	µg/m³	ppb	ppb
12/1/2024	4	7	17	–	–
12/2/2024	4	10	27	–	–
12/3/2024	5	9	20	8.1	21.6
12/4/2024	6	9	20	10.2	23.2
12/5/2024	7	10	20	8.3	16.5
12/6/2024	7	11	22	9.3	16
12/7/2024	6	13	35	9.6	18.3
12/8/2024	5	11	29	8.8	20.5
12/9/2024	4	8	22	4.8	8.6
12/10/2024	5	14	31	6.2	10.3
12/11/2024	8	29	80	8.2	11.7
12/12/2024	11	23	67	10.4	17.2
12/13/2024	7	8	19	8.0	21
12/14/2024	6	10	19	9.3	22.4
12/15/2024	4	8	18	6.8	16
12/16/2024	5	7	16	6.2	14.8
12/17/2024	5	6	15	6.4	12.6
12/18/2024	6	8	18	13.5	23.3
12/19/2024	4	7	17	10.8	20.7
12/20/2024	4	6	16	11.6	25.8
12/21/2024	6	8	20	12.0	23.3
12/22/2024	7	9	21	14.4	40.2
12/23/2024	5	8	19	12.9	24.8
12/24/2024	6	10	21	7.2	15.5
12/25/2024	5	7	16	11.0	27.2
12/26/2024	5	7	18	8.5	15
12/27/2024	5	6	17	6.7	15.4

Date	AQMS (24-hr Average)				AQMS (1-hr Max)
	$PM_{2.5}$	PM_{10}	TSP	NO_2	NO_2
	µg/m³	µg/m³	µg/m³	ppb	ppb
12/28/2024	4	6	16	6.9	10.9
12/29/2024	5	6	16	5.8	10.9
12/30/2024	5	6	17	6.0	16.5
12/31/2024	3	6	15	3.3	7.5

Table B.2 Daily Wind Speed, Air Temperature, and Rainfall Recorded at the Woodfibre LNG Meteorology Station for December 2024

Date	Daily Wind Speed (m/s)		Daily Air Temperature (°C)			Daily Total Rainfall (mm)
	Max	Avg	Min	Max	Avg	
12/1/2024	4.9	1.1	2.7	8.9	4.6	0.0
12/2/2024	5.0	1.2	1.7	8.7	3.7	0.2
12/3/2024	4.7	0.9	2.2	10.4	4.8	0.0
12/4/2024	5.6	1.0	3.3	13.1	5.6	0.0
12/5/2024	3.3	0.8	2.6	7.6	5.2	0.2
12/6/2024	5.1	1.0	6.1	9.2	7.0	21.4
12/7/2024	12.0	1.5	5.5	11.4	7.8	29.0
12/8/2024	6.7	1.1	4.2	8.7	5.5	6.4
12/9/2024	3.6	1.0	1.3	6.1	4.0	0.0
12/10/2024	4.1	1.1	0.9	5.4	3.0	0.2
12/11/2024	5.8	1.2	2.7	8.9	5.0	0.0
12/12/2024	5.5	1.0	2.4	5.7	4.1	0.0
12/13/2024	3.5	0.9	3.6	4.9	4.2	21.6
12/14/2024	11.6	2.5	4.0	10.0	6.4	31.0
12/15/2024	5.9	1.6	2.0	7.9	4.7	4.2
12/16/2024	5.2	1.3	1.3	3.5	2.2	8.4
12/17/2024	3.7	1.2	2.0	4.0	3.2	35.0
12/18/2024	7.6	1.1	3.6	8.4	5.2	28.2
12/19/2024	4.4	1.1	3.8	5.9	5.1	48.6

Date	Daily Wind Speed (m/s)		Daily Air Temperature (°C)			Daily Total Rainfall (mm)
	Max	Avg	Min	Max	Avg	
12/20/2024	5.1	1.2	5.0	7.7	6.3	10.8
12/21/2024	6.0	1.5	5.5	10.9	7.3	17.2
12/22/2024	3.5	0.8	5.3	7.0	5.9	33.4
12/23/2024	6.4	1.1	5.7	7.8	6.9	13.6
12/24/2024	10.4	2.1	6.1	12.0	8.3	9.2
12/25/2024	7.5	1.9	3.9	7.0	5.4	20.2
12/26/2024	4.5	0.9	2.7	5.9	4.2	31.8
12/27/2024	4.9	1.0	3.9	7.8	4.9	10.8
12/28/2024	4.3	1.0	3.1	4.4	3.8	34.2
12/29/2024	5.1	1.0	3.3	5.4	4.4	5.0
12/30/2024	3.9	0.8	3.2	5.6	4.3	8.0
12/31/2024	4.0	1.1	2.4	5.8	3.7	0.0

Appendix C Passive SO2 and VOC Samples – Lab Analysis Report

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

http://www.agatlabs.com

CLIENT NAME: STANTEC CONSULTING LTD
100-75 24TH STREET
EAST SASKATOON, SK S7K 0K3

ATTENTION TO: Dan Jarratt/Kashif Choudhry

PROJECT: Woodfibre LNG

AGAT WORK ORDER: 25C239794

AIR QUALITY MONITORING REVIEWED BY: Carmen Andrei, AQM Lab Supervisor

DATE REPORTED: Jan 28, 2025

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 299-2000

*Notes

VERSION 1: Total VOC field blank came in with high reading. As per AGAT's QAQC procedure, all samples are lab blank subtracted. Also, the Total VOC field duplicates are not within acceptance limits. Analysis was repeated with similar results.

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

http://www.agatlabs.com

Air Quality Summary

AGAT WORK ORDER: 25C239794

PROJECT: Woodfibre LNG

CLIENT NAME: STANTEC CONSULTING LTD

ATTENTION TO: Dan Jarratt/Kashif Choudhry

SAMPLING SITE:

SAMPLED BY:

Parameter	Unit	Number of Samples	Peak Reading	Network Average
Ambient Sulfur Dioxide	ppbv	2	<0.2	<0.2
Ambient VOC as Hexane	ppbv	2	6.5	4.3

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 25C239794

PROJECT: Woodfibre LNG

CLIENT NAME: STANTEC CONSULTING LTD

ATTENTION TO: Dan Jarratt/Kashif Choudhry

SAMPLING SITE:

SAMPLED BY:

Passive Air Quality Sampling

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-28

				Site#01/ 02Dec/24,10:48 07Jan/25,10:35
		SAMPLE DESCRIPTION:		/SO2,TVOC
		SAMPLE TYPE:		FILTER
		DATE SAMPLED:		
Parameter	Unit	G / S	RDL	6464355
Ambient Sulfur Dioxide	ppbv		0.2	<0.2
Ambient VOC as Hexane	ppbv		0.7	6.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

6464355 All SO2 samples are field blank subtracted.
Total VOC field blank came in with high reading. As per AGAT's QAQC procedure, all samples are lab blank subtracted.
Also, the Total VOC field duplicates are not within acceptance limits. Analysis was repeated with similar results.

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 25C239794

PROJECT: Woodfibre LNG

CLIENT NAME: STANTEC CONSULTING LTD

ATTENTION TO: Dan Jarratt/Kashif Choudhry

SAMPLING SITE:

SAMPLED BY:

Passive Quality Assurance

DATE RECEIVED: 2025-01-15

DATE REPORTED: 2025-01-28

Parameter	Unit	G / S	RDL	Site#01/DUP 02Dec/24,10:48 07Jan/25,10:35 /SO2,TVOC FILTER 6464356	BLANK/ 02Dec/24,10:48 07Jan/25,10:35 /SO2,TVOC FILTER 6464357
Ambient Sulfur Dioxide	ppbv		0.2	<0.2	<0.2
Ambient VOC as Hexane	ppbv		0.7	2.1	14.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

http://www.agatlabs.com

Quality Assurance

CLIENT NAME: STANTEC CONSULTING LTD

AGAT WORK ORDER: 25C239794

PROJECT: Woodfibre LNG

ATTENTION TO: Dan Jarratt/Kashif Choudhry

SAMPLING SITE:

SAMPLED BY:

Air Quality Monitoring

RPT Date: Jan 28, 2025			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Passive Air Quality Sampling															
Ambient Sulfur Dioxide	248	6464356	<0.2	<0.2	NA	< 0.2	102%	90%	110%	108%	80%	120%	107%	80%	120%
Ambient VOC as Hexane	181	6464356	6.5	2.1	102.7%	< 0.7	90%	60%	140%	112%	60%	140%			

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
Sample spikes and duplicates are not from the same sample.

Certified By:

AGAT Laboratories

3650 – 21 Street NE
CALGARY, ALBERTA
CANADA T2E 6V6
TEL (403)299-2000

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Method Summary

CLIENT NAME: STANTEC CONSULTING LTD

AGAT WORK ORDER: 25C239794

PROJECT: Woodfibre LNG

ATTENTION TO: Dan Jarratt/Kashif Choudhry

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Air Quality Monitoring			
Ambient Sulfur Dioxide	AQM-43-16007	Inhouse Method	ION CHROMATOGRAPH
Ambient VOC as Hexane	IHF-60-25003	Modified NIOSH-1500,1501,1003	GC/MS

AGAT Laboratories

Have feedback? Scan here for a quick survey!

3650, 21 Street NE
Calgary, AB
T2E 6V6
P: 403.299.2000
webair.agatlabs.com

Laboratory Use Only

AGAT Job Number: 25C239794

Notes:

Chain of Custody Record

Report Information

Company: Stantec
Contact: Kashif Choudhry
Address: 100-75 24th Street East
Saskatoon, SK, S7K 0K3
Phone: 474-774-0927 Fax:
LSD:
Client Project #: 123222160-12-2024.300

Invoice To Same Yes ☐ / No ☐

Company: Stantec
Contact: accounts.payable.invoices@stantec.com and
Address: 100-75 24th Street East
Saskatoon, SK, S7K 0K3
Phone: 474-774-0927 Fax:
PO/AFE#: 123222160-12-2024.300

Turnaround Time Required (TAT)

Regular TAT ☑ 5 to 7 working days

Rush TAT
☐ Less than 24 hours
☐ 24 to 48 hours
☐ 48 to 72 hours

Date Required:

UPON FILLING OUT THIS SECTION, THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

LABORATORY USE (LAB ID #)	SITE NAME/SAMPLE DESCRIPTION	DATE/TIME INSTALLED	DATE/TIME EXTRACTED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	H2S Passive	SO2 Passive	NO2 Passive	O3 Passive	PM2.5	PM10	TSP	Duplicate - SO2 Passive	Blank - SO2 Passive	VOC Passive	Duplicate - VOC Passive	Blank - VOC Passive
	Please Email reports to:															
	kashif.choudhry@stantec.com															
	daniel.casanova@stantec.com															
	katie.chuen@stantec.com															
	dan.jarratt@stantec.com															
	WLNG-SO2-AQMS	Dec 2, 2024	Jan 7, 2025			☑						☑				
	WLNG-SO2-DUPLICATE												☑			
	WLNG-SO2-BLANK													☑		
	WLNG-VOC-AQMS														☑	
	WLNG-VOC-DUPLICATE															☑
	WLNG-VOC-Blank															

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

N°: 011525

Appendix D Weekly AQMS Reports

WLNG AQMS - Weekly Reporting

Reporting Period

This AQMS Weekly report covers the period from November 25 to December 01, 2024.

Objective

This report summarizes the air quality monitoring data for the week of November 25 to December 01, 2024. This report includes an analysis of pollutants such as $PM_{2.5}$, PM_{10}, TSP, and NO_2, highlighting any significant dust events, alerts from the Air Quality Monitoring Station (AQMS), and changes to the monitoring network and mitigation measures. Additionally, the report documents the results of any investigations into alerts or equipment failures, detailing the actions taken or plans for resolution because these are reasonable efforts to maintain compliance with environmental standards and support ongoing air quality management efforts.

Summary of Onsite Air Quality and Meteorological Data Collected

This section presents four summary tables summarizing the air quality and meteorological monitoring data. The data is based on a Level 0 verification, indicating that it has undergone preliminary checks for completeness and accuracy.

Table 1: Summary of Daily Results for the Past 7 Days

Date	$PM_{2.5}$ (µg/m³)			PM_{10} (µg/m³)			TSP (µg/m³)			NO_2 (ppb)		
	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg
25-Nov*	-	-	-	8	130	27.2	19	261	61.3	0.0	20.6	1.6
26-Nov*	-	-	-	5	38	12.1	15	91	30.5	0.0	6.5	1.0
27-Nov*	-	-	-	5	22	12.5	15	49	28.3	-	-	-
28-Nov*	-	-	-	6	58	11.6	15	184	31.0	4.8	11.0	7.7
29-Nov	2	10	5.3	5	12	8.6	12	25	18.0	3.9	14.5	9.0
30-Nov	1	9	4.6	4	11	7.6	11	24	16.5	3.0	16.8	8.0
01-Dec*	0	7	3.8	5	12	7.4	13	22	16.9	-	-	-

Note: The British Columbia Air Quality Objectives (AQO) are:

- $PM_{2.5}$: 25 µg/m³ - Achievement based on annual 98th percentile of daily average, averaged over one year.
- PM_{10}: 50 µg/m³ - Achievement based on the daily (24-hr) average.
- TSP: 120 µg/m³ - Achievement based on the daily (24-hr) average.
- NO_2: 60 ppb - Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.

Bold Italic numbers indicates that the 24-hour average for PM or one or more 1-hour maximum values for NO_2 exceed the respective threshold values.

* Due to a flow controller malfunction, the BAM $PM_{2.5}$ unit could not collect valid data between November 25 and November 27, 2024, and the valid data available on November 28 did not meet the 75% requirement. Similarly, less than 75% of valid data was available for NO_2 on November 27 due to the gas analyzer's quarterly maintenance and calibration. The AQMS operator was unable to retrieve NO_2 data from the instrument for December 1, 2024.

Table 2: Weekly Averages Summary – $PM_{2.5}$, PM_{10}, TSP and NO_2

Pollutant	units	1-hr Min	1-hr Max	Weekly average	Trigger Limits (2/3 of the AQO)	Time Above Trigger Limit (Days)	Time Above AQO (Days)
$PM_{2.5}$	µg/m³	0	10	4.6	16.7 (24-hr avg)	0	0
PM_{10}	µg/m³	4	130	12.4	33.3 (24-hr avg)	0	0
TSP	µg/m³	11	261	28.9	80 (24-hr avg)	0	0
NO_2	ppb	0.0	20.6	5.5	40 (1-hr avg max)	0	0

Table 3: Summary of Meteorological Station Results

Date	Wind Speed (m/s)		Ambient Temperature (ºC)			Total Precipitation (mm)
	Max	24-hr Avg	Min	Max	24-hr Avg	
25-Nov	6.8	1.4	1.3	8.4	3.9	0.0
26-Nov	6.2	1.0	0.0	6.6	2.3	0.0
27-Nov	3.8	0.8	2.2	5.3	3.4	0.0
28-Nov	2.8	0.7	0.3	4.8	2.5	0.0
29-Nov	4.4	0.8	1.6	4.2	2.9	5.2
30-Nov	3.0	0.6	3.7	5.3	4.4	2.6
01-Dec	4.9	1.1	2.7	8.9	4.6	0.0

Table 4: Passive SO_2 and VOC Sampling

Date	Sampled Swapped (Yes/No)	Chain of Custody (COC) Submitted (Yes/No)	Sample Submitted to AGAT Lab (Yes/No)	Lab Results Received (Yes/No)	Lab Results Summary or Comments
25-Nov to 01-Dec	No	No	No	Yes	**Exposure Period (Sep 1- Nov 7):** SO_2=0.2 ppb & VOC= 0.8 ppb. **Exposure Period (Nov 7 – Dec 2):** SO_2= <0.2 ppb & VOC= <0.7 ppb.

Note: This table mostly contains "No" entries because SO_2 and VOC passive samples are swapped monthly, and this reporting period may not align with the sampling schedule. Passive samples were swapped on November 7 and December 2, 2024. The laboratory analysis report for the exposure period from September 1 to November 7 was received on December 6, 2024, while the report for the exposure period from November 7 to December 2 was received on December 31, 2024.

On-Site Dust Observation Report and Work Activities Details

Dust Observation Report Summary:

For this report: No dust observation report was received for this period, as the template is still being prepared for the client to provide this information.

Work Activities Details:

According to the Daily Construction Reports from Nov 25 to Dec 1, construction activities include demolition in RORO, rock management and grading in Area 1100, impact and vibro piling in Area 1300, back filling in Admin Building area and breaking rocks in multiple areas.

Summary of Daily Reports and Action Taken

AGAT Labs completed the quarterly calibration of the BAMS (PM_{10} and TSP) units on November 26, 2024. The BAM $PM_{2.5}$ unit was swapped and calibrated, and the NO-NO_2-NO_x analyzer (Thermo Fisher Scientific 42i) underwent its quarterly calibration on November 27, 2024. On November 28, 2024, a Stantec Qualified Professional swapped the meteorological wind sensor and updated the datalogger program.

Category	Details	Action Taken	Resolution Status / Anticipated Completion Date
AQ Exceedances Report	No AQ exceedances recorded for this period.	No Action required.	Not Applicable.
AQ Complaints	No AQ complaints received during this period.	No Action required.	Not Applicable.
Alerts from the AQMS	No alarms or instrument break-down was reported from AGAT during this period.	No Action required.	Not Applicable.
Changes to the Monitoring Network	No changes to the monitoring network during this period.	Not Applicable.	Not Applicable.
Changes to Mitigation Measures	No changes to mitigation measures during this period.	Not Applicable.	Not Applicable.

In summary, all instruments operated as intended, successfully collecting air quality data throughout the reporting period, except BAM $PM_{2.5}$ unit between November 25 and November 28. No air quality exceedances of the British Columbia Air Quality Objectives were recorded, and no further investigation was required.

WLNG AQMS - Weekly Reporting

Reporting Period

This AQMS Weekly report covers the period from December 02 to December 08, 2024.

Objective

This report summarizes the air quality monitoring data for the week of December 02 to December 08, 2024. This report includes an analysis of pollutants such as $PM_{2.5}$, PM_{10}, TSP, and NO_2, highlighting any significant dust events, alerts from the Air Quality Monitoring Station (AQMS), and changes to the monitoring network and mitigation measures. Additionally, the report documents the results of any investigations into alerts or equipment failures, detailing the actions taken or plans for resolution because these are reasonable efforts to maintain compliance with environmental standards and support the ongoing air quality management efforts.

Summary of Onsite Air Quality and Meteorological Data Collected

This section presents four summary tables summarizing the air quality and meteorological monitoring data. The data is based on a Level 0 verification, indicating that it has undergone preliminary checks for completeness and accuracy.

Table 1: Summary of Daily Results for the Past 7 Days

Date	$PM_{2.5}$ (µg/m³)			PM_{10} (µg/m³)			TSP (µg/m³)			NO_2 (ppb)		
	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg
02-Dec*	1	8	4.3	5	64	9.9	12	235	27.1	-	-	-
03-Dec	1	14	5.4	4	13	8.8	13	26	20.3	0.6	21.6	8.1
04-Dec	1	15	6.0	2	16	9.0	11	28	19.7	2.4	23.2	10.2
05-Dec	2	13	6.6	6	17	10.5	14	29	20.3	3.7	16.5	8.3
06-Dec	4	12	6.8	7	27	11.0	15	46	21.8	3.5	16.0	9.3
07-Dec	3	9	6.0	5	35	13.4	13	94	34.8	3.0	18.3	9.6
08-Dec	0	9	4.5	3	43	10.9	12	101	28.8	2.6	20.5	8.8

Note: The British Columbia Air Quality Objectives (AQO) are:

- $PM_{2.5}$: 25 µg/m³ - Achievement based on annual 98th percentile of daily average, averaged over one year.
- PM_{10}: 50 µg/m³ - Achievement based on the daily (24-hr) average.
- TSP: 120 µg/m³ - Achievement based on the daily (24-hr) average.
- NO_2: 60 ppb - Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.

Bold Italic numbers indicates that the 24-hour average for PM or one or more 1-hour maximum values for NO_2 exceed the respective threshold values.

* The AQMS operator was unable to retrieve NO_2 data from the instrument for December 2, 2024 – less than 75% data available.

Table 2: Weekly Averages Summary – $PM_{2.5}$, PM_{10}, TSP and NO_2

Pollutant	units	1-hr Min	1-hr Max	Weekly average	Trigger Limits (2/3 of the AQO)	Time Above Trigger Limit (Days)	Time Above AQO (Days)
$PM_{2.5}$	µg/m³	0	15	5.7	16.7 (24-hr avg)	0	0
PM_{10}	µg/m³	2	64	10.5	33.3 (24-hr avg)	0	0
TSP	µg/m³	11	235	24.7	80 (24-hr avg)	0	0
NO_2	ppb	0.6	23.2	9.1	40 (1-hr avg max)	0	0

Table 3: Summary of Meteorological Station Results

Date	Wind Speed (m/s)		Ambient Temperature (ºC)			Total Precipitation (mm)
	Max	24-hr Avg	Min	Max	24-hr Avg	
02-Dec	5.0	1.2	1.7	8.7	3.7	0.2
03-Dec	4.7	0.9	2.2	10.4	4.8	0.0
04-Dec	5.6	1.0	3.3	13.1	5.6	0.0
05-Dec	3.3	0.8	2.6	7.6	5.2	0.2
06-Dec	5.1	1.0	6.1	9.2	7.0	21.4
07-Dec	12.0	1.5	5.5	11.4	7.8	29.0
08-Dec	6.7	1.1	4.2	8.7	5.5	6.4

Table 4: Passive SO_2 and VOC Sampling

Date	Sampled Swapped (Yes/No)	Chain of Custody (COC) Submitted (Yes/No)	Sample Submitted to AGAT Lab (Yes/No)	Lab Results Received (Yes/No)	Lab Results Summary or Comments
02 Dec to 08-Dec	Yes	Yes	Yes	No	Not Applicable

Note: Passive samples were swapped and shipped on December 2, 2024.

On-Site Dust Observation Report and Work Activities Details

Dust Observation Report Summary:

For this report: No dust observation report was received for this period.

Work Activities Details:

According to the Daily Construction Reports from Dec 02 to Dec 08, construction activities include piles removal in RORO, bedrock breaking, concrete pouring and excavating in Area 1100 & 1200, impact and vibro piling in Area 1300, sweeping and cleaning of the 120t bridge, and grading, excavating, and backfilling at the Admin Pad as well as the sidewalk in the 4200 area.

Summary of Daily Reports and Action Taken

Category	Details	Action Taken	Resolution Status / Anticipated Completion Date
AQ Exceedances Report	No AQ exceedances recorded for this period.	No Action required.	Not Applicable.
AQ Complaints	No AQ complaints received during this period.	No Action required.	Not Applicable.
Alerts from the AQMS	No alarms or instrument break-down was reported from AGAT during this period.	No Action required.	Not Applicable.
Changes to the Monitoring Network	No changes to the monitoring network during this period.	Not Applicable.	Not Applicable.
Changes to Mitigation Measures	No changes to mitigation measures during this period.	Not Applicable.	Not Applicable.

In summary, all instruments operated as intended, successfully collecting air quality data throughout the reporting period. No air quality exceedances of the British Columbia Air Quality Objectives were recorded, and no further investigation was required.

WLNG AQMS - Weekly Reporting

Reporting Period

This AQMS Weekly report covers the period from December 9 to December 15, 2024.

Objective

This report summarizes the air quality monitoring data for the week of December 9 to December 15, 2024. This report includes an analysis of pollutants such as $PM_{2.5}$, PM_{10}, TSP, and NO_2, highlighting any significant dust events, alerts from the Air Quality Monitoring Station (AQMS), and changes to the monitoring network and mitigation measures. Additionally, the report documents the results of any investigations into alerts or equipment failures, detailing the actions taken or plans for resolution because these are reasonable efforts to maintain compliance with environmental standards and support the ongoing air quality management efforts.

Summary of Onsite Air Quality and Meteorological Data Collected

This section presents four summary tables summarizing the air quality and meteorological monitoring data. The data is based on a Level 0 verification, indicating that it has undergone preliminary checks for completeness and accuracy.

Table 1: Summary of Daily Results for the Past 7 Days

Date	$PM_{2.5}$ (µg/m³)			PM_{10} (µg/m³)			TSP (µg/m³)			NO_2 (ppb)		
	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg
09-Dec	0	8	4.4	1	25	8.2	13	68	22.0	2.2	8.6	4.8
10-Dec	3	8	4.9	3	41	13.8	11	80	30.6	2.4	10.3	6.2
11-Dec	3	23	8.0	5	100	29.5	14	308	80.3	3.9	11.7	8.2
12-Dec	5	23	10.6	7	96	23.3	15	249	67.0	5.9	17.2	10.4
13-Dec	5	10	6.9	5	12	8.1	16	25	19.0	2.7	21.0	8.0
14-Dec	3	11	6.3	6	31	10.4	12	28	19.2	3.2	22.4	9.3
15-Dec	0	8	4.2	4	11	7.8	8	24	17.8	2.9	16.0	6.8

Note: The British Columbia Air Quality Objectives (AQO) are:

- $PM_{2.5}$: 25 µg/m³ - Achievement based on annual 98th percentile of daily average, averaged over one year.
- PM_{10}: 50 µg/m³ - Achievement based on the daily (24-hr) average.
- TSP: 120 µg/m³ - Achievement based on the daily (24-hr) average.
- NO_2: 60 ppb - Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.

Bold Italic numbers indicates that the 24-hour average for PM or one or more 1-hour maximum values for NO_2 exceed the respective threshold values.

Table 2: Weekly Averages Summary – $PM_{2.5}$, PM_{10}, TSP and NO_2

Pollutant	units	1-hr Min	1-hr Max	Weekly average	Trigger Limits (2/3 of the AQO)	Time Above Trigger Limit (Days)	Time Above AQO (Days)
$PM_{2.5}$	µg/m³	0	23	6.5	16.7 (24-hr avg)	0	0
PM_{10}	µg/m³	1	100	14.4	33.3 (24-hr avg)	0	0
TSP	µg/m³	8	308	36.6	80 (24-hr avg)	1	0
NO_2	ppb	2.2	22.4	7.7	40 (1-hr avg max)	0	0

Table 3: Summary of Meteorological Station Results

Date	Wind Speed (m/s)		Ambient Temperature (ºC)			Total Precipitation (mm)
	Max	24-hr Avg	Min	Max	24-hr Avg	
09-Dec	3.6	1.0	1.3	6.1	4.0	0.0
10-Dec	4.1	1.1	0.9	5.4	3.0	0.2
11-Dec	5.8	1.2	2.7	8.9	5.0	0.0
12-Dec	5.5	1.0	2.4	5.7	4.1	0.0
13-Dec	3.5	0.9	3.6	4.9	4.2	21.6
14-Dec	11.6	2.5	4.0	10.0	6.4	31.0
15-Dec	5.9	1.6	2.0	7.9	4.7	4.2

Table 4: Passive SO_2 and VOC Sampling

Date	Sampled Swapped (Yes/No)	Chain of Custody (COC) Submitted (Yes/No)	Sample Submitted to AGAT Lab (Yes/No)	Lab Results Received (Yes/No)	Lab Results Summary or Comments
09 Dec to 15-Dec	No	No	No	No	No sample swap or lab analysis was performed during this period.

Note: This table mostly contains "No" entries because SO_2 and VOC passive samples are swapped on a monthly basis, and this reporting period may not coincide with the sampling schedule. Passive samples were swapped on December 2, 2024.

On-Site Dust Observation Report and Work Activities Details

Dust Observation Report Summary:

For this report: No dust observation report was received for this period.

Work Activities Details:

According to the Daily Construction Reports from Dec 09 to Dec 15, construction activities include concrete pouring and backfilling in Area 1100 & 1200, impact and vibro piling and backfilling with Rip Rap in Area 1300, and Kode crushing as well as hauling to Area 1300.

Summary of Daily Reports and Action Taken

Category	Details	Action Taken	Resolution Status / Anticipated Completion Date
AQ Exceedances Report	No AQ exceedances recorded for this period.	No Action required.	Not Applicable.
AQ Complaints	No AQ complaints received during this period.	No Action required.	Not Applicable.
Alerts from the AQMS	No alarms or instrument break-down was reported from AGAT during this period.	No Action required.	Not Applicable.
Changes to the Monitoring Network	No changes to the monitoring network during this period.	Not Applicable.	Not Applicable.
Changes to Mitigation Measures	No changes to mitigation measures during this period.	Not Applicable.	Not Applicable.

In summary, all instruments operated as intended, successfully collecting air quality data throughout the reporting period. No air quality exceedances of the British Columbia Air Quality Objectives were recorded, and no further investigation was required.

WLNG AQMS - Weekly Reporting

Reporting Period

This AQMS Weekly report covers the period from December 16 to December 22, 2024.

Objective

This report summarizes the air quality monitoring data for the week of December 16 to December 22, 2024. This report includes an analysis of pollutants such as $PM_{2.5}$, PM_{10}, TSP, and NO_2, highlighting any significant dust events, alerts from the Air Quality Monitoring Station (AQMS), and changes to the monitoring network and mitigation measures. Additionally, the report documents the results of any investigations into alerts or equipment failures, detailing the actions taken or plans for resolution because these are reasonable efforts to maintain compliance with environmental standards and support the ongoing air quality management efforts.

Summary of Onsite Air Quality and Meteorological Data Collected

This section presents four summary tables summarizing the air quality and meteorological monitoring data. The data is based on a Level 0 verification, indicating that it has undergone preliminary checks for completeness and accuracy.

Table 1: Summary of Daily Results for the Past 7 Days

Date	$PM_{2.5}$ (µg/m³)			PM_{10} (µg/m³)			TSP (µg/m³)			NO_2 (ppb)		
	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg
16-Dec	2	9	5.5	3	12	6.6	11	24	16.1	1.9	14.8	6.2
17-Dec	0	8	4.6	4	9	6.0	11	22	15.1	2.0	12.6	6.4
18-Dec	1	10	6.1	5	13	8.1	10	24	17.8	5.3	23.3	13.5
19-Dec	0	7	3.7	4	10	6.7	14	20	16.9	5.6	20.7	10.8
20-Dec	1	6	3.9	2	9	6.2	13	23	16.2	6.2	25.8	11.6
21-Dec	3	11	5.6	6	11	8.1	14	24	19.7	5.1	22.3	12.0
22-Dec	4	29	7.0	6	22	9.0	16	39	21.5	9.6	40.2	14.4

Note: The British Columbia Air Quality Objectives (AQO) are:

- $PM_{2.5}$: 25 µg/m³ - Achievement based on annual 98th percentile of daily average, averaged over one year.
- PM_{10}: 50 µg/m³ - Achievement based on the daily (24-hr) average.
- TSP: 120 µg/m³ - Achievement based on the daily (24-hr) average.
- NO_2: 60 ppb - Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.

Bold Italic numbers indicates that the 24-hour average for PM or one or more 1-hour maximum values for NO_2 exceed the respective threshold values.

Table 2: Weekly Averages Summary – $PM_{2.5}$, PM_{10}, TSP and NO_2

Pollutant	units	1-hr Min	1-hr Max	Weekly average	Trigger Limits (2/3 of the AQO)	Time Above Trigger Limit (Days)	Time Above AQO (Days)
$PM_{2.5}$	µg/m³	0	29	5.2	16.7 (24-hr avg)	0	0
PM_{10}	µg/m³	2	22	7.2	33.3 (24-hr avg)	0	0
TSP	µg/m³	10	39	17.6	80 (24-hr avg)	0	0
NO_2	ppb	1.9	40.2	10.7	40 (1-hr avg max)	1	0

Table 3: Summary of Meteorological Station Results

Date	Wind Speed (m/s)		Ambient Temperature (ºC)			Total Precipitation (mm)
	Max	24-hr Avg	Min	Max	24-hr Avg	
16-Dec	5.2	1.3	1.3	3.5	2.2	8.4
17-Dec	3.7	1.2	2.0	4.0	3.2	35.0
18-Dec	7.6	1.1	3.6	8.4	5.2	28.2
19-Dec	4.4	1.1	3.8	5.9	5.1	48.6
20-Dec	5.1	1.2	5.0	7.7	6.3	10.8
21-Dec	6.0	1.5	5.5	10.9	7.3	17.2
22-Dec	3.5	0.8	5.3	7.0	5.9	33.4

Table 4: Passive SO_2 and VOC Sampling

Date	Sampled Swapped (Yes/No)	Chain of Custody (COC) Submitted (Yes/No)	Sample Submitted to AGAT Lab (Yes/No)	Lab Results Received (Yes/No)	Lab Results Summary or Comments
16-Dec to 22-Dec	No	No	No	No	No sample swap or lab analysis was performed during this period.

Note: This table mostly contains "No" entries because SO_2 and VOC passive samples are swapped on a monthly basis, and this reporting period may not coincide with the sampling schedule. Passive samples were swapped on December 2, 2024.

On-Site Dust Observation Report and Work Activities Details

Dust Observation Report Summary:

For this report: No dust observation report was received for this period.

Work Activities Details:

According to the Daily Construction Reports from Dec 16 to Dec 22, construction activities include concrete pouring in Area 1100 & 1200, grading the access into the 1200D area, placing import Type D in Area 1300, rerouting walkways, fueling, site cleanup and wash car top ups.

Summary of Daily Reports and Action Taken

Category	Details	Action Taken	Resolution Status / Anticipated Completion Date
AQ Exceedances Report	No AQ exceedances recorded for this period.	No Action required.	Not Applicable.
AQ Complaints	No AQ complaints received during this period.	No Action required.	Not Applicable.
Alerts from the AQMS	No alarms or instrument break-down was reported from AGAT during this period.	No Action required.	Not Applicable.
Changes to the Monitoring Network	No changes to the monitoring network during this period.	Not Applicable.	Not Applicable.
Changes to Mitigation Measures	No changes to mitigation measures during this period.	Not Applicable.	Not Applicable.

In summary, all instruments operated as intended, successfully collecting air quality data throughout the reporting period. No air quality exceedances of the British Columbia Air Quality Objectives were recorded, and no further investigation was required.

WLNG AQMS - Weekly Reporting

Reporting Period

This AQMS Weekly report covers the period from December 23 to December 31, 2024.

Objective

This report summarizes the air quality monitoring data for the week of December 23 to December 31, 2024. This report includes an analysis of pollutants such as $PM_{2.5}$, PM_{10}, TSP, and NO_2, highlighting any significant dust events, alerts from the Air Quality Monitoring Station (AQMS), and changes to the monitoring network and mitigation measures. Additionally, the report documents the results of any investigations into alerts or equipment failures, detailing the actions taken or plans for resolution because these are reasonable efforts to maintain compliance with environmental standards and support the ongoing air quality management efforts.

Summary of Onsite Air Quality and Meteorological Data Collected

This section presents four summary tables summarizing the air quality and meteorological monitoring data. The data is based on a Level 0 verification, indicating that it has undergone preliminary checks for completeness and accuracy.

Table 1: Summary of Daily Results for the Past 7 Days

Date	$PM_{2.5}$ (µg/m³)			PM_{10} (µg/m³)			TSP (µg/m³)			NO_2 (ppb)		
	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg	1-hr Min	1-hr Max	24-hr Avg
23-Dec	2	9	5.1	5	11	7.8	14	21	18.6	5.5	24.8	12.9
24-Dec	3	10	6.4	5	20	10.3	17	31	21.0	2.6	15.5	7.2
25-Dec	2	13	4.8	2	12	6.8	10	21	15.7	3.4	27.2	11.0
26-Dec	1	9	4.9	3	13	6.9	14	23	17.6	3.2	15.0	8.5
27-Dec	1	10	5.3	4	10	6.3	14	23	16.8	2.8	15.4	6.7
28-Dec	0	9	3.5	4	8	6.3	12	20	16.3	3.2	10.9	6.9
29-Dec	2	9	4.6	4	8	5.8	11	21	15.9	1.8	10.9	5.8
30-Dec	2	7	5.0	3	10	5.9	12	22	17.3	1.0	16.5	6.0
31-Dec	0	6	3.5	3	9	5.6	12	19	14.6	1.2	7.5	3.3

Note: The British Columbia Air Quality Objectives (AQO) are:

- $PM_{2.5}$: 25 µg/m³ - Achievement based on annual 98th percentile of daily average, averaged over one year.
- PM_{10}: 50 µg/m³ - Achievement based on the daily (24-hr) average.
- TSP: 120 µg/m³ - Achievement based on the daily (24-hr) average.
- NO_2: 60 ppb - Achievement based on annual 98th percentile of daily 1-hour average maximum (D1HM), averaged over three consecutive years.

Bold Italic numbers indicates that the 24-hour average for PM or one or more 1-hour maximum values for NO_2 exceed the respective threshold values.

Table 2: Weekly Averages Summary – $PM_{2.5}$, PM_{10}, TSP and NO_2

Pollutant	units	1-hr Min	1-hr Max	Weekly average	Trigger Limits (2/3 of the AQO)	Time Above Trigger Limit (Days)	Time Above AQO (Days)
$PM_{2.5}$	µg/m³	0	13	4.8	16.7 (24-hr avg)	0	0
PM_{10}	µg/m³	2	20	6.9	33.3 (24-hr avg)	0	0
TSP	µg/m³	10	31	17.1	80 (24-hr avg)	0	0
NO_2	ppb	1	27.2	7.6	40 (1-hr avg max)	0	0

Table 3: Summary of Meteorological Station Results

Date	Wind Speed (m/s)		Ambient Temperature (°C)			Total Precipitation (mm)
	Max	24-hr Avg	Min	Max	24-hr Avg	
23-Dec	6.4	1.1	5.7	7.8	6.9	13.6
24-Dec	10.4	2.1	6.1	12.0	8.3	9.2
25-Dec	7.5	1.9	3.9	7.0	5.4	20.2
26-Dec	4.5	0.9	2.7	5.9	4.2	31.8
27-Dec	4.9	1.0	3.9	7.8	4.9	10.8
28-Dec	4.3	1.0	3.1	4.4	3.8	34.2

29-Dec	5.1	1.0	3.3	5.4	4.4	5.0
30-Dec	3.9	0.8	3.2	5.6	4.3	8.0
31-Dec	4.0	1.1	2.4	5.8	3.7	0.0

Table 4: Passive SO_2 and VOC Sampling

Date	Sampled Swapped (Yes/No)	Chain of Custody (COC) Submitted (Yes/No)	Sample Submitted to AGAT Lab (Yes/No)	Lab Results Received (Yes/No)	Lab Results Summary or Comments
23-Dec to 31-Dec	No	No	No	No	No sample swap or lab analysis was performed during this period.

Note: This table mostly contains "No" entries because SO_2 and VOC passive samples are swapped on a monthly basis, and this reporting period may not coincide with the sampling schedule. Passive samples were swapped on December 2, 2024.

On-Site Dust Observation Report and Work Activities Details

Dust Observation Report Summary:

For this report: No dust observation report was received for this period.

Work Activities Details:

According to the Daily Construction Reports from December 23 to December 31, construction activities include, placing Type D in Area 1300, rock breaking in Area 4200, backfilling in Area 1300, de-watching, fueling, site cleaning and car washing site wide..

Summary of Daily Reports and Action Taken

Category	Details	Action Taken	Resolution Status / Anticipated Completion Date
AQ Exceedances Report	No AQ exceedances recorded for this period.	No Action required.	Not Applicable.
AQ Complaints	No AQ complaints received during this period.	No Action required.	Not Applicable.
Alerts from the AQMS	No alarms or instrument break-down was reported from AGAT during this period.	No Action required.	Not Applicable.
Changes to the Monitoring Network	No changes to the monitoring network during this period.	Not Applicable.	Not Applicable.
Changes to Mitigation Measures	No changes to mitigation measures during this period.	Not Applicable.	Not Applicable.

In summary, all instruments operated as intended, successfully collecting air quality data throughout the reporting period. No air quality exceedances of the British Columbia Air Quality Objectives were recorded, and no further investigation was required.