



2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

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Executive Summary

The Western Yellowhead Air Monitoring Zone (WYAMZ) area is one of six air management zones in Saskatchewan, formed in line with the directive from the Canadian Council of Ministers of the Environment (CCME) under the Canada-wide Air Quality Management System (AQMS) that Canada will have regional Airsheds comprised of local (Provincial/Territorial) Air Management Zones. The WYAMZ region extends from east of Saskatoon to the Alberta border, and from north of Meadow Lake to north of Swift Current. Currently, WYAMZ has 28 member companies, including representatives from the oil and gas, potash, agriculture, and forestry industries, as well as municipalities.

WYAMZ owned and operated stations consist of four Airpointers® located in Meadow Lake, Maidstone, Clavet, and Kerrobert. Each station continuously measures a combination of sulphur dioxide (SO₂), hydrogen sulphide (H₂S), nitrogen oxides (NO, NO₂, NO_x), ozone (O₃), fine particulate matter less than 2.5 micrometres in diameter (PM_{2.5}), ambient temperature, relative humidity (RH), precipitation, wind speed (WS), and wind direction (WD).

The following analyzers did not have uptimes greater than 90% in 2024:

- Clavet: NO, NO₂, NO_x, PM_{2.5}
- Kerrobert: SO₂
- Maidstone: NO, NO₂, NO_x, SO₂, H₂S, PM_{2.5}
- Meadow Lake: NO, NO₂, NO_x, O₃, PM_{2.5}.

There were no exceedances of the 1-hour, 8-hour, or annual Saskatchewan Ambient Air Quality Standards (SAAQS) for NO₂, SO₂, O₃, H₂S, or PM_{2.5} at any monitoring sites in 2024. However, there were exceedances of the 24-hour SAAQS for PM_{2.5} (28 µg/m³) at the following stations:

- Clavet: 12 exceedances, with a maximum concentration of 104.1 µg/m³
- Kerrobert: 10 exceedances, maximum 122.6 µg/m³
- Maidstone: 2 exceedances, maximum 71.3 µg/m³
- Meadow Lake: 6 exceedances, maximum 38.0 µg/m³

The Air Quality Health Index (AQHI) was calculated at both the Clavet and Meadow Lake monitoring stations. Air quality conditions were classified as Low Risk for the vast majority of the time, 98.8% at Meadow Lake and 98.4% at Clavet. Moderate Risk conditions occurred infrequently, representing 1.6% of the time at Meadow Lake and 1.1% at Clavet. High Risk levels were rare and observed only at Clavet, accounting for 0.1% of the monitoring period.



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Acronyms and Abbreviations

Acronym	Full Form
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
μm	micrometres
AQHI	Air Quality Health Index
AQI	Air Quality Index
AQMS	Air Quality Management System
CO	carbon monoxide
H ₂ S	hydrogen sulphide
m/s	metres per second
NO	nitric oxide
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
O ₃	ozone
PM _{2.5}	particulate matter less than 2.5 micrometres
ppb	parts per billion
RH	relative humidity
SAAQS	Saskatchewan Ambient Air Quality Standards
SLR	SLR Consulting (Canada) Ltd.
SO ₂	sulphur dioxide
VOCs	volatile organic compounds
WD	wind direction
WS	wind speed
WYAMZ	Western Yellowhead Air Management Zone



1.0 Introduction

The Western Yellowhead Air Monitoring Zone (WYAMZ) area is one of six air management zones in Saskatchewan, formed in line with the directive from the Canadian Council of Ministers of the Environment (i.e., CCME), under the Canada-wide Air Quality Management System (AQMS), that Canada will have regional Airsheds comprised of local (provincial/territorial) Air Management Zones. The approach is designed to collect credible, continuous real-time air quality information through collaborative efforts.

The WYAMZ region extends from east of Saskatoon to the Alberta border, and from north of Meadow Lake to north of Swift Current, as illustrated in Figure 1. Currently, WYAMZ has 28 member companies, including representatives from the oil and gas, potash, agriculture, and forestry industries, as well as municipalities.

1.1 Western Yellowhead Air Monitoring Zone Mission

WYAMZ operates as an independent, collaborative, non-profit organization that brings together representatives from industry, government, and other key stakeholders to support regional air quality management. Its mission is to collect, analyze, and share scientifically credible and continuous air quality data to enhance understanding of local and regional air quality conditions. WYAMZ is committed to promoting transparency by communicating monitoring results and related information to member organizations, regulatory agencies, and the public, thereby supporting informed decision-making and the protection of environmental and community health.

1.2 Western Yellowhead Air Monitoring Zone Air Monitoring Network

There are currently seven continuous air monitoring stations in the WYAMZ region, which includes four operated by WYAMZ (Meadow Lake, Maidstone, Clavet, and Kerrobert), one owned and operated by the Ministry of Environment (Saskatoon NAPS station), and two owned and operated by Cenovus (Cenovus East and Cenovus West, located in Lloydminster).

WYAMZ-owned and operated stations consist of four Airpointers®, located in Meadow Lake, Maidstone, Clavet, and Kerrobert. Each station continuously measures a combination of sulphur dioxide (SO₂), hydrogen sulphide (H₂S), nitrogen oxides (NO, NO₂, NO_x), ozone (O₃), fine particulate matter less than 2.5 micrometres in diameter (PM_{2.5}), ambient temperature, relative humidity (RH), precipitation, wind speed (WS), and wind direction (WD). The parameters being monitored at each station are available in Table 1.

The Airpointers® have been operating since December 1, 2013. Publicly available monitoring data is available on the WYAMZ website (WYAMZ 2018).



Figure 1: Western Yellowhead Air Monitoring Zone Region and Locations of the Continuous Air Monitoring Stations

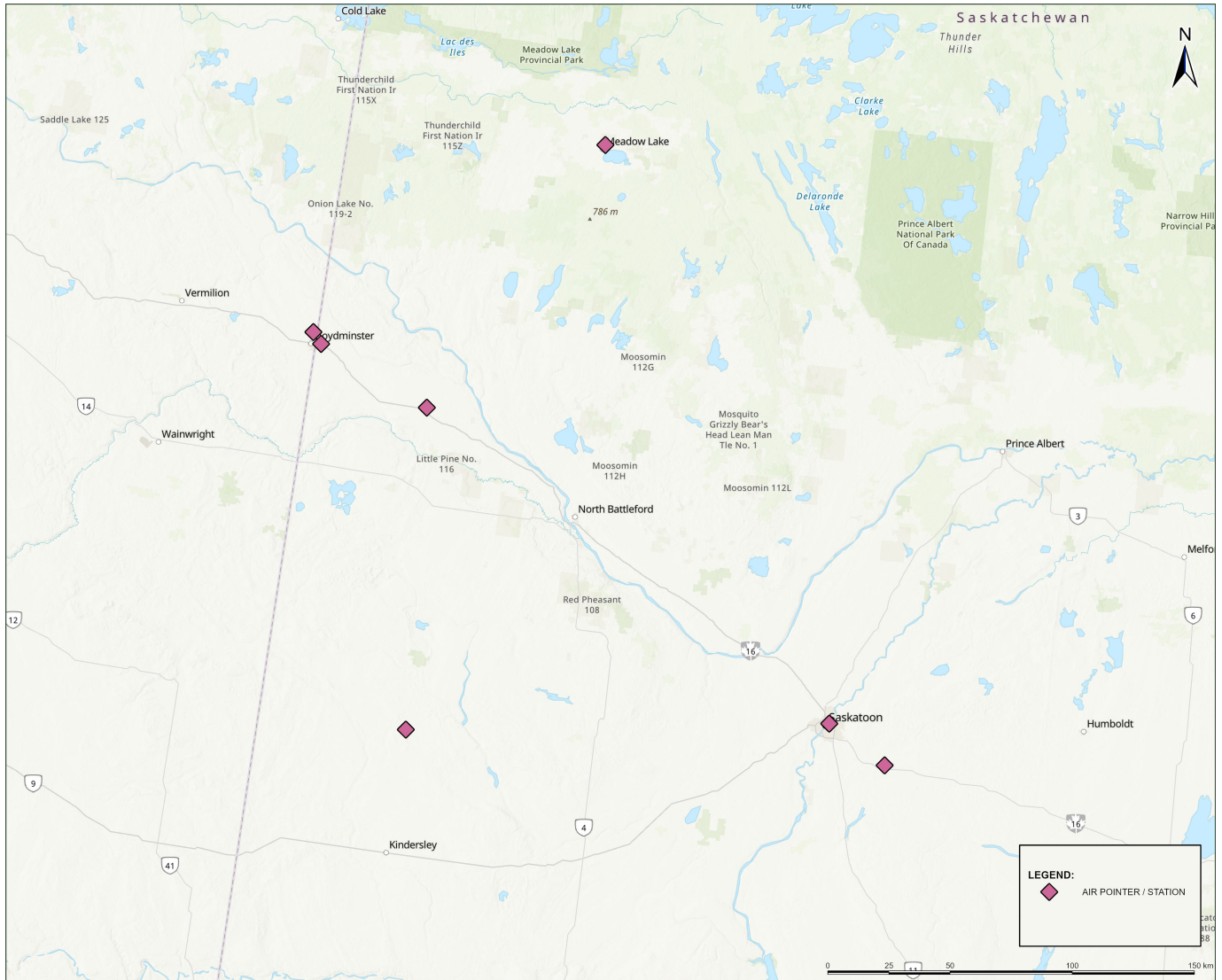


Table 1: Western Yellowhead Air Monitoring Zone Continuous Air Monitoring Stations and Measurement Parameters

Monitored Parameters	Monitoring Station			
	Clavet	Kerrobert	Maidstone	Meadow Lake
SO ₂	-	√	√	-
H ₂ S	-	√	√	-
NO	√	-	√	√
NO ₂	√	-	√	√
NO _x	√	-	√	√
O ₃	√	-	-	√
PM _{2.5}	√	√	√	√
Precipitation	√	√	√	√
Ambient Temperature	√	√	√	√
Relative Humidity	√	√	√	√
Wind Speed	√	√	√	√
Wind Direction	√	√	√	√



2.0 Air Quality Monitoring

2.1 Summary of Exceedances

The Saskatchewan Ambient Air Quality Standards (SAAQS), established by the Saskatchewan Ministry of Environment, provide science-based benchmarks designed to protect both public health and the environment. WYAMZ continuously monitors air quality and compares the data to these standards to assess regional air quality and monitor compliance with provincial guidelines.

Table 2 summarizes SAAQS exceedances for the WYAMZ-operated air monitoring stations.

Table 2: Summary of Saskatchewan Ambient Air Quality Standards Exceedances

Parameter	No. of Stations	Average Type	SAAQS	No. of Exceedances
SO ₂	2	1-Hour	172 ppb	0
		24-Hour	48 ppb	0
		Annual	8 ppb	0
H ₂ S	2	1-Hour	11 ppb	0
		24-Hour	3.6 ppb	0
NO ₂	3	1-Hour	159 ppb	0
		24-Hour	106 ppb	0
		Annual	24 ppb	0
O ₃	2	1-Hour	82 ppb	0
		8-Hour ¹	63 ppb	0
PM _{2.5}	4	24-Hour ²	28 µg/m ³	30
		Annual	10 µg/m ³	0

Notes:

ppb = parts per billion

µg/m³ = micrograms per cubic metre

(1) The 3-year average of the annual 4th-highest daily maximum 8-hour average concentrations; however, the reported exceedances are any 8-hour averages higher than the Saskatchewan Ambient Air Quality Standards (SAAQS).

(2) The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations; however, the reported exceedances are any 24-hour averages higher than the SAAQS.

2.2 Meteorology

Air quality is dependent on the rate pollutants are emitted to the atmosphere by anthropologic or natural means, and the rate at which pollutants are dispersed away from the sources. Air pollution transport and dispersion are directly influenced by WS, WD, ambient temperature, and local topography.

Wind direction patterns varied by station. At Clavet, prevailing winds were from the southwest and east (each approximately 8.2%). Kerrobert saw predominant winds from the northwest (13.2%), while northwest winds were most common at Maidstone (14.6 %). At Meadow Lake, winds were mainly from the southwest (8.9%). Wind rose diagrams for these locations are shown in Figures 2 through 5. Windspeeds at the stations ranged from an average of 0.5 metres per second (m/s) at the Meadow Lake station to 1.4 m/s at the Kerrobert station.



Figure 2: Clavet Wind Rose for 1-Hour Average Data in 2024

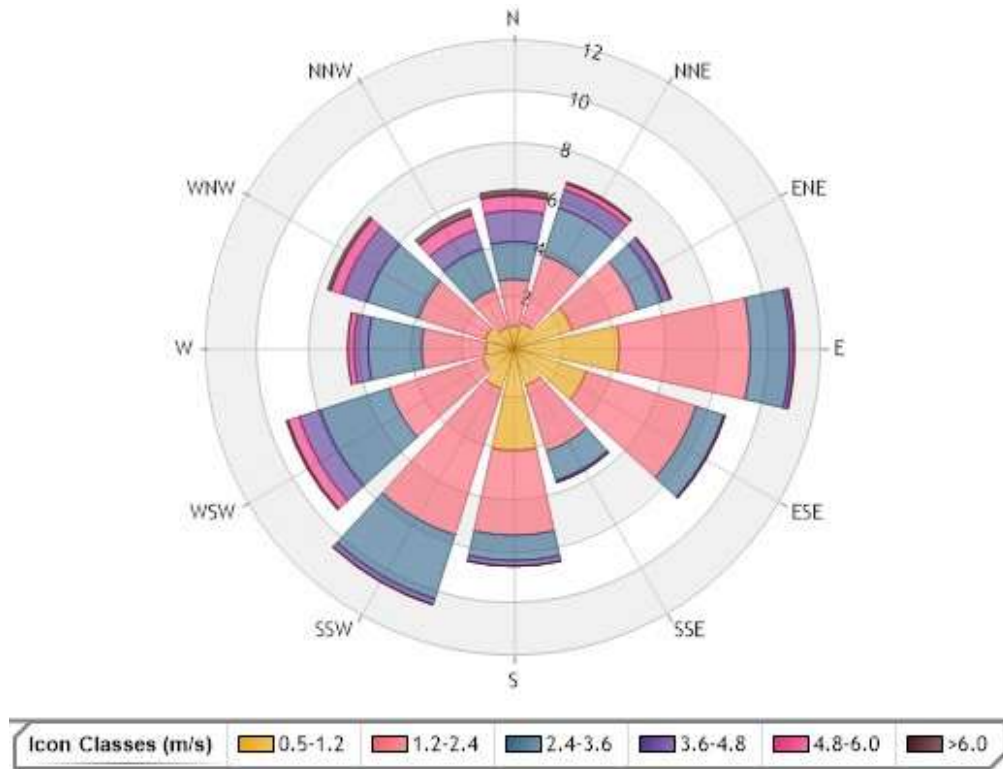


Figure 3: Kerrobert Wind Rose for 1-Hour Average Data in 2024

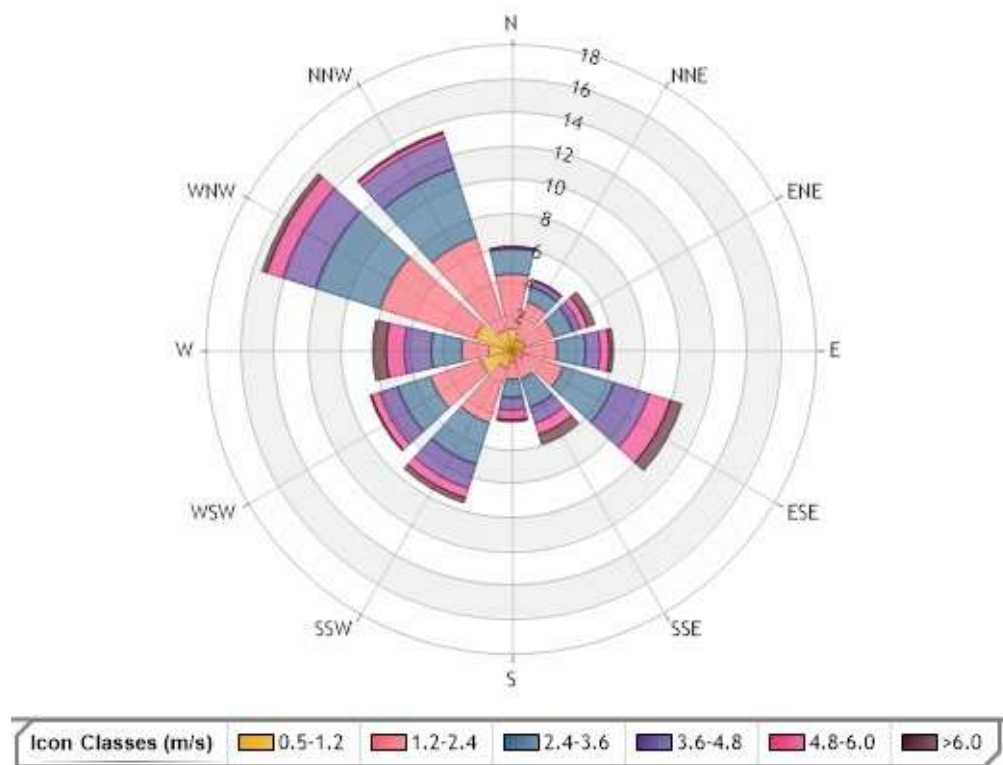


Figure 4: Maidstone Wind Rose for 1-Hour Average Data in 2024

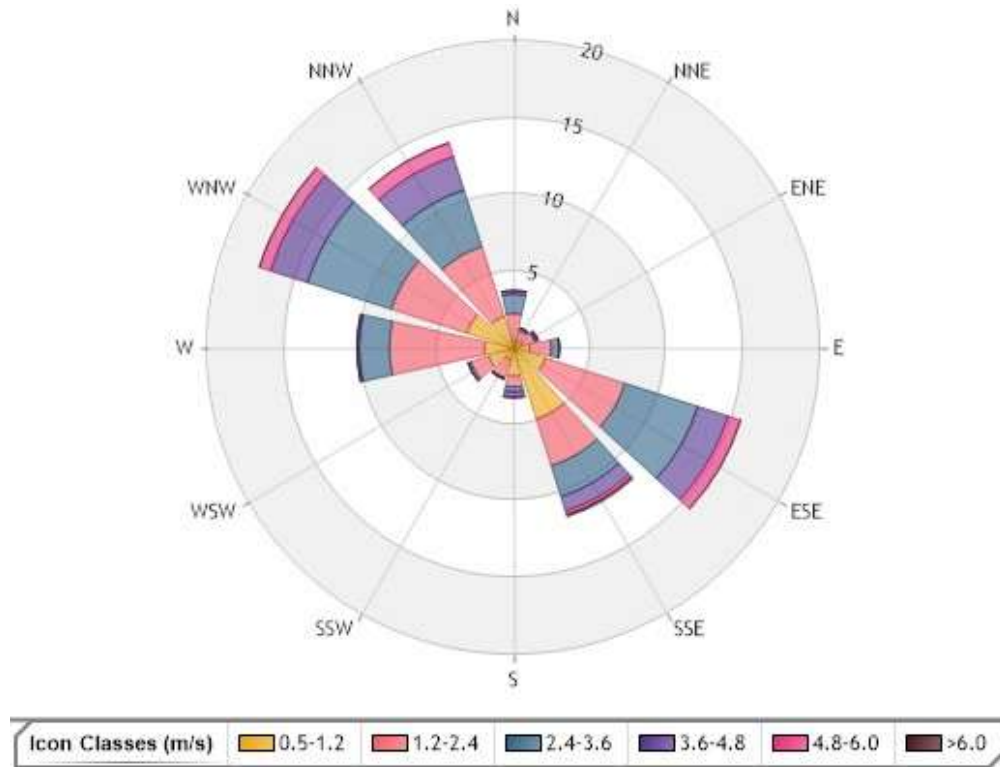
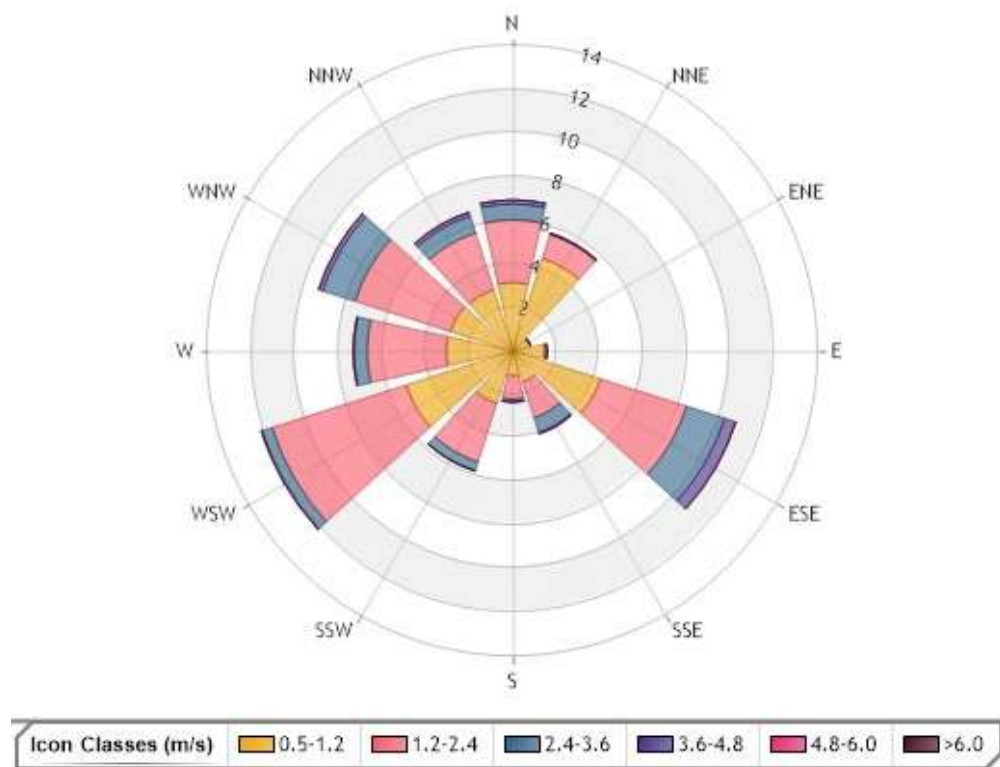


Figure 5: Meadow Lake Wind Rose for 1-Hour Average Data in 2024



3.0 Continuous Air Monitoring

3.1 Sulphur Dioxide (SO₂)

SO₂ is a colourless gas with a strong odour that poses risks to both human health and the environment. Exposure to SO₂ can irritate the respiratory system in humans and animals, with individuals who have asthma or reduced lung function being particularly vulnerable. In the environment, elevated concentrations of SO₂ can damage crops and forests, and contribute to the formation of acid rain, which negatively affects soil, water bodies, and entire ecosystems.

In Canada, the major sources of SO₂ are metal smelters, fossil fuel-fired power plants, transportation, upstream oil and gas, and other industrial facilities.

The SAAQS for SO₂ are:

- 1-hour average = 172 parts per billion (ppb)
- 24-hour average = 48 ppb
- Annual average = 8 ppb.

SO₂ is measured at both the Maidstone and Kerrobert stations. In 2024, the average SO₂ concentrations were low, at 0.1 ppb for Maidstone and 0.3 ppb for Kerrobert. The highest 1-hour concentration recorded was 11.8 ppb at the Maidstone station on January 15, 2024. The maximum 24-hour average was measured at the Kerrobert station on the same day, reaching 1.8 ppb. There were no exceedances of the 1-hour, 24-hour or annual SAAQS at either site. Operational uptimes were less than 90% at Maidstone (34.9%) and at Kerrobert (75.7%).

Table 3 and Table 4 show the SO₂ summaries for 2024.

Table 3: Summary of Sulphur Dioxide Monitoring

Monitoring Station	Annual Average	Instrument Uptime	Maximum SO ₂ Concentration			
			1-Hour Max.		24 Hour Max.	
	ppb	%	ppb	Time	ppb	Date
Maidstone	0.3	34.9	11.8	1/15/2024 16:00	1.5	3/24/2024
Kerrobert	0.1	75.7	8.0	1/15/2024 12:00	1.8	1/15/2024

Red font means an operational time less than 90%.

Table 4: Summary of Sulphur Dioxide Exceedances

Monitoring Station	No. of SO ₂ SAAQS Exceedances		
	1-hr SAAQS	24-hr SAAQS	Annual SAAQS
	172 ppb	48 ppb	8 ppb
Maidstone	0	0	0
Kerrobert	0	0	0

Pollution roses for SO₂ at both sites are available in Figures 6 and 7. At both locations, the majority of concentrations are less than 1 ppb (98.7% of the time at Kerrobert and 91.8% at Maidstone). Higher concentration events appear to occur when the wind is blowing in the east-southeast direction at the Maidstone Station.



Figure 6: Kerrobert 1-Hour Average Sulphur Dioxide Pollution Rose

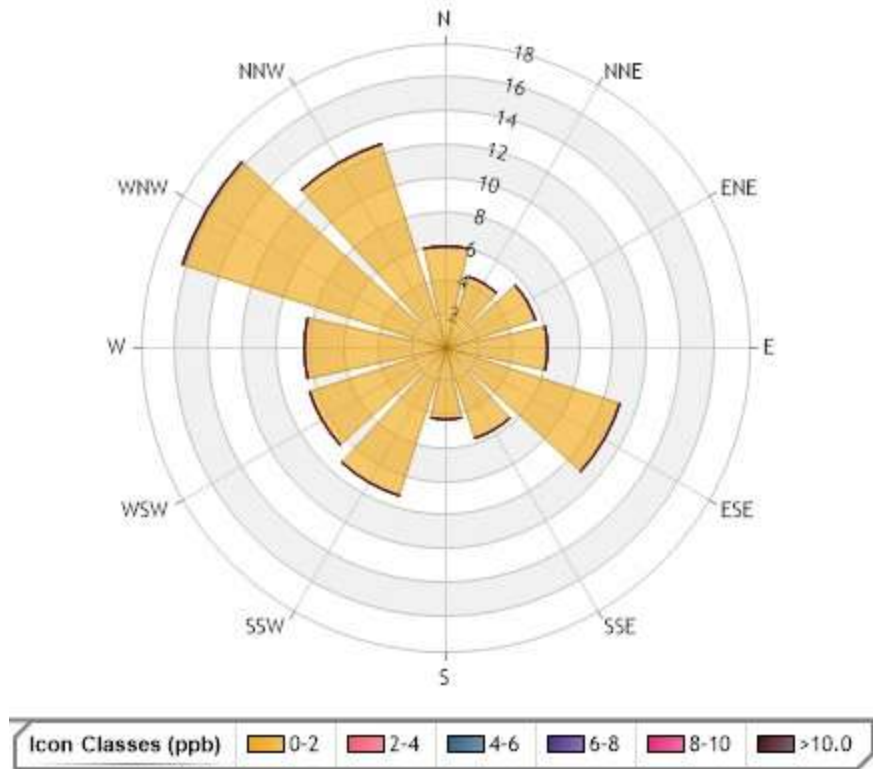
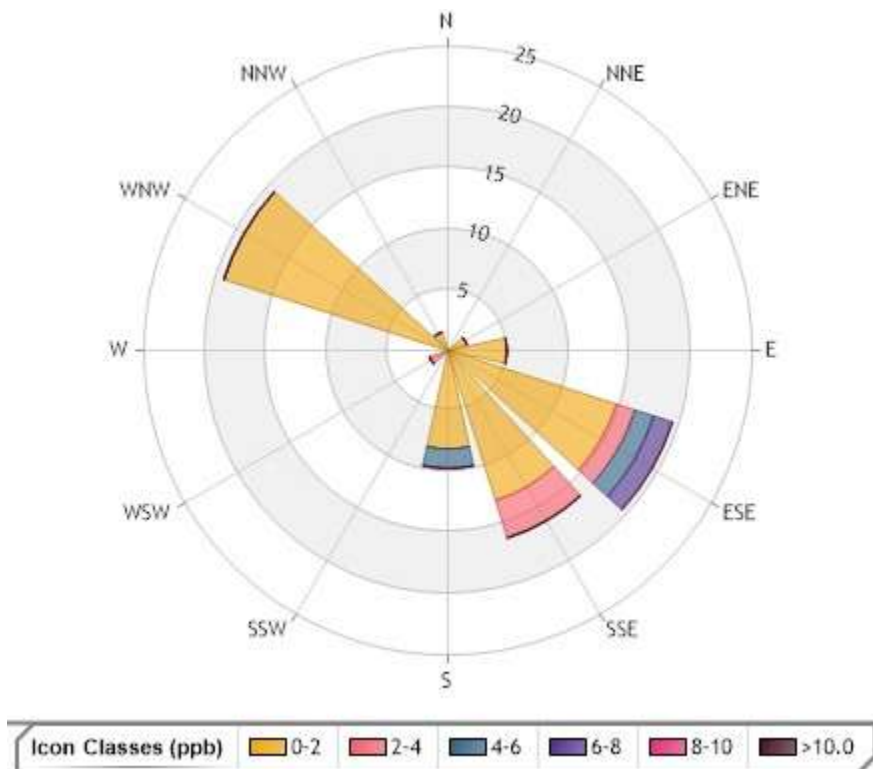


Figure 7: Maidstone 1-Hour Average Sulphur Dioxide Pollution Rose



3.2 Hydrogen Sulphide (H₂S)

H₂S is a colourless gas with a distinctive “rotten egg” odour. At high concentrations, it can be toxic, potentially damaging the nervous system and other organs or tissues in the body. H₂S is released from both natural and anthropogenic sources. Naturally, it is emitted by volcanoes, hot springs, and crude oil deposits, as well as from the decomposition of organic matter. Anthropogenic sources include mining operations, oil and gas facilities, livestock production, and wastewater treatment systems.

The SAAQS for H₂S are:

- 1-hour average = 11 ppb
- 24-hour average = 3.6 ppb.

H₂S is measured at both the Maidstone and Kerrobert stations. In 2024, the average H₂S concentrations were low, at 0.2 ppb for Maidstone and 0.3 ppb for Kerrobert. The highest 1-hour concentration recorded was 3.6 ppb at the Maidstone station on April 14, 2024. The maximum 24-hour average was measured at the Maidstone station on April 23, 2024, reaching 1.7 ppb. There were no exceedances of the 1-hour or 24-hour SAAQS at either site. Operational uptimes were less than 90% at Maidstone (34.9%). Table 5 and Table 6 show the H₂S summaries for 2024.

Table 5: Summary of Hydrogen Sulphide Monitoring

Monitoring Station	Annual Average	Instrument Uptime	Maximum H ₂ S Concentration			
			1-Hour Max.		24 Hour Max.	
	ppb	%	ppb	Time	ppb	Date
Maidstone	0.2	34.9	3.2	4/23/2024 23:00	1.7	4/24/2024
Kerrobert	0.3	94.3	3.6	4/14/2024 07:00	1.5	9/13/2024

Red font means an operational time less than 90%.

Table 6: Summary of Hydrogen Sulphide Exceedances

Monitoring Station	No. of SAAQS H ₂ S Exceedances	
	1-hr SAAQS	24-hr SAAQS
	11 ppb	3.6 ppb
Maidstone	0	0
Kerrobert	0	0

Pollution roses for H₂S at both sites are available in Figure 8 and Figure 9. At both locations, the majority of concentrations are less than 1 ppb (95.8% of the time at Kerrobert and 98.4% at Maidstone).



Figure 8: Kerrobert 1-Hour Average Hydrogen Sulphide Pollution Rose

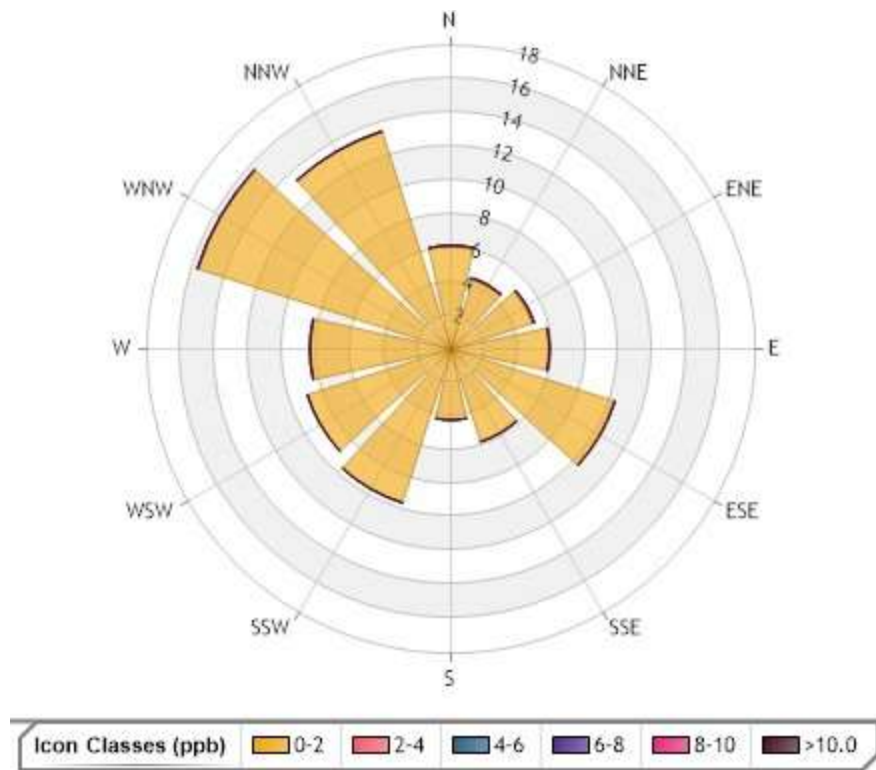
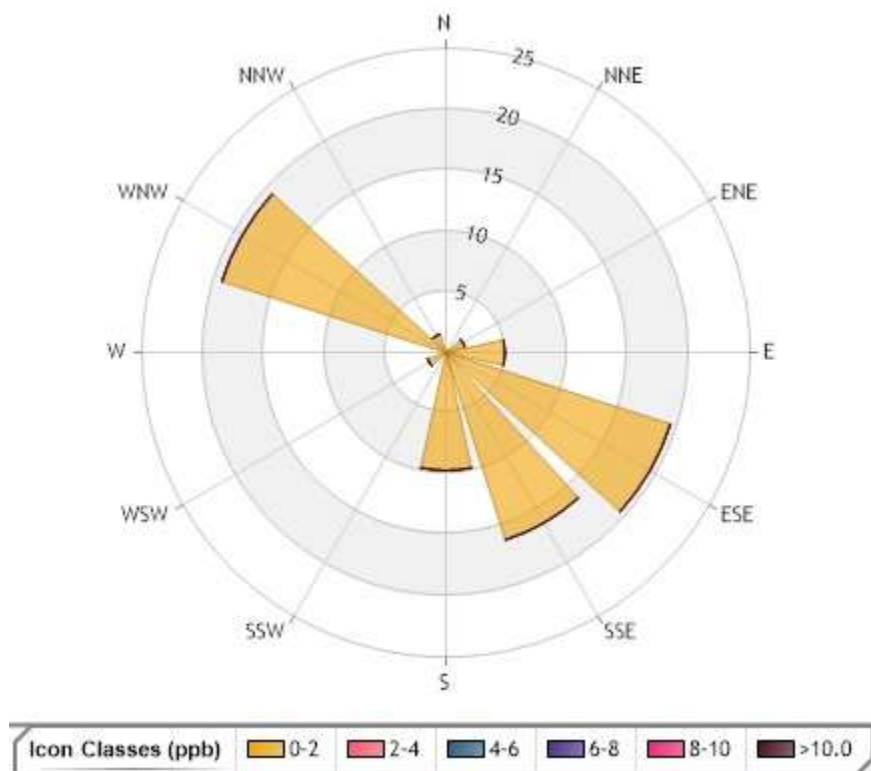


Figure 9: Maidstone 1-Hour Average Hydrogen Sulphide Pollution Rose



3.3 Nitrogen Dioxide (NO₂)

NO₂ is a gas formed when nitric oxide (NO) reacts with ozone in the ambient air. Together, NO and NO₂ are commonly referred to as oxides of nitrogen (NO_x). Exposure to NO₂ can impair respiratory health by reducing lung function and worsening conditions such as asthma. Similar to SO₂, NO₂ can damage crops and forests, and contribute to the formation of acid rain, which negatively affects soil, water bodies, and entire ecosystems.

The major emission sources of NO_x include transportation, fossil-fuelled electric power plants, and the upstream oil and gas industry.

The SAAQS for NO₂ are:

- 1-hour average = 159 ppb
- 24-hour average = 106 ppb
- Annual average = 24 ppb.

NO₂ is measured at the Clavet, Maidstone, and Meadow Lake stations. In 2024, the average NO₂ concentrations were low, at 3.2 ppb for Clavet, 0.9 ppb at Maidstone, and 2.7 ppb for Meadow Lake. The highest 1-hour concentration recorded was 35.1 ppb at the Meadow Lake station on April 7, 2024. The maximum 24-hour average was measured at the Meadow Lake station on the same day, reaching 13.1 ppb. There were no exceedances of the 1-hour, 24-hour, or annual SAAQS at any of the sites. Operational uptimes were less than 90% at Clavet (75.9%), Maidstone (1.6%), and Meadow Lake (88.8%). Table 7 and Table 8 show the NO₂ summaries for 2024.

Table 7: Summary of Nitrogen Dioxide Monitoring

Monitoring Station	Annual Average	Instrument Uptime	Maximum NO ₂ Concentration			
			1-Hour Max.		24 Hour Max.	
			ppb	Time	ppb	Date
Clavet	3.2	75.9	22.8	3/8/2024 01:00	12.1	11/29/2024
Maidstone	0.9	1.6	8.5	9/24/2024 01:00	2.0	9/25/2024
Meadow Lake	2.7	88.8	35.1	4/7/2024 10:00	13.1	4/7/2024

Red font means an operational time less than 90%.

Table 8: Summary of Nitrogen Dioxide Exceedances

Monitoring Station	No. of SAAQS NO ₂ Exceedances		
	1-hr SAAQS	24-hr SAAQS	Annual SAAQS
	159 ppb	106 ppb	24 ppb
Clavet	0	0	0
Maidstone	0	0	0
Meadow Lake	0	0	0



Pollution roses for NO₂ at each of the stations are available in Figure 10, Figure 11, and Figure 12. At each location, the majority of concentrations are less than 5 ppb (83.0% of the time at Clavet, 93.4% at Maidstone, and 86.1% at Meadow Lake). Higher concentration events appear to occur when the wind is blowing in the south-southwest direction at the Clavet Station and with winds in the west-southwest direction at Meadow Lake.

Figure 10: Clavet 1-Hour Average Nitrogen Dioxide Pollution Rose

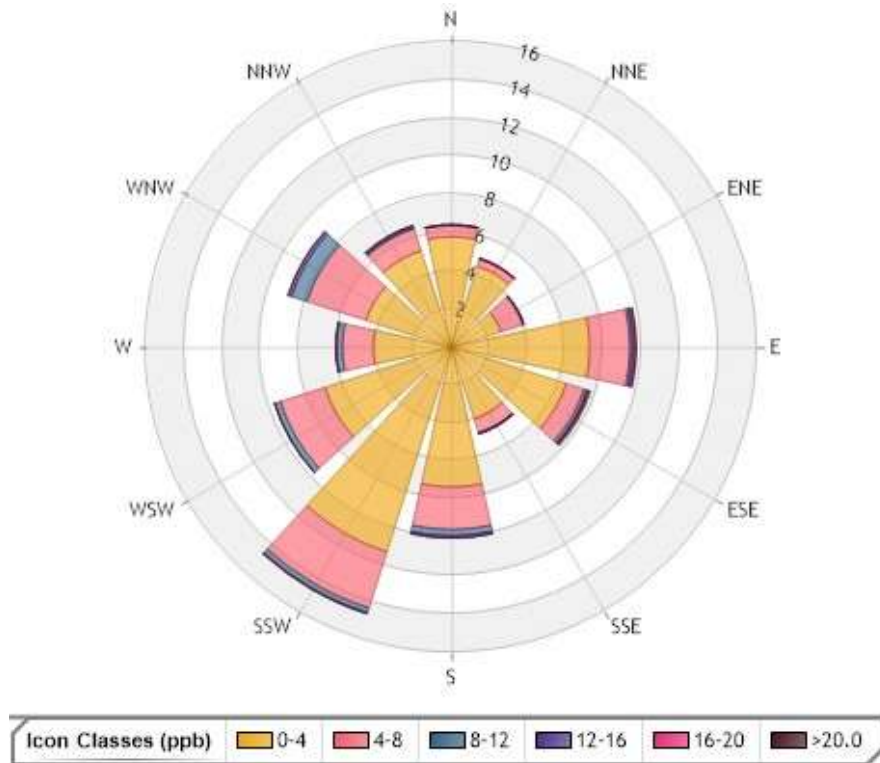


Figure 11: Maidstone 1-Hour Average Nitrogen Dioxide Pollution Rose

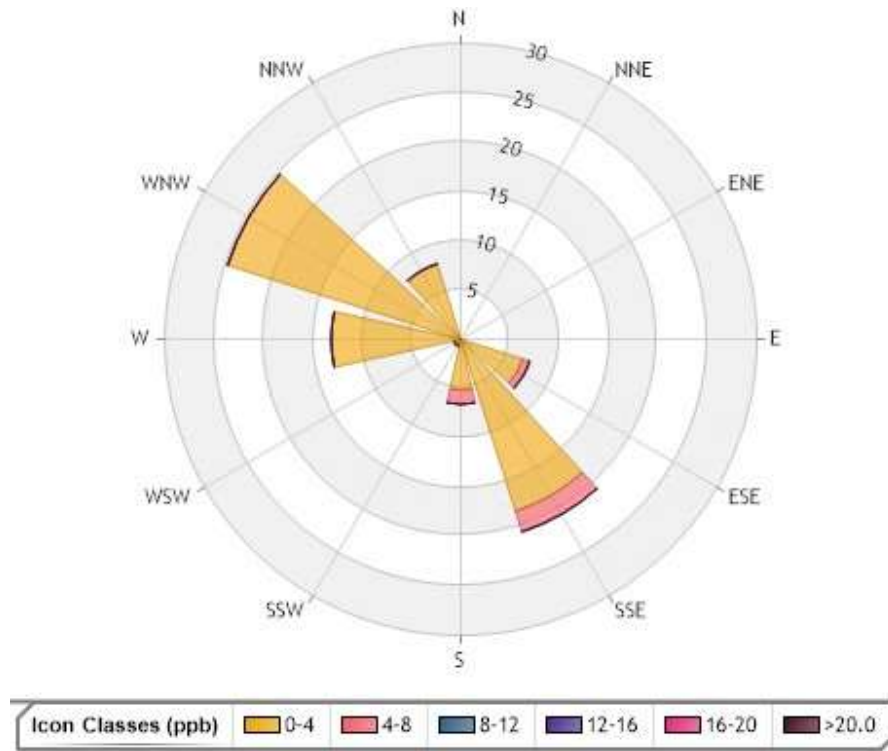
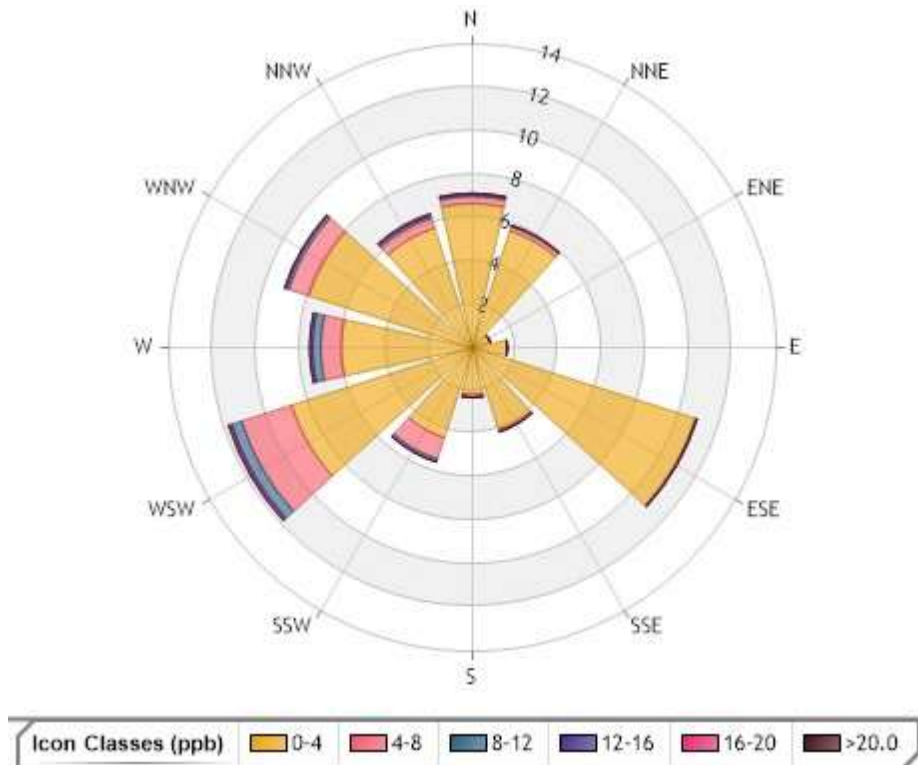


Figure 12: Meadow Lake 1-Hour Average Nitrogen Dioxide Pollution Rose



3.4 Ozone (O₃)

O₃ occurs naturally in the upper atmosphere but can also be formed at ground level. Ground level O₃ is a colourless gas that develops just above the earth’s surface. It is considered a secondary pollutant because it is formed through chemical reactions of NO_x and volatile organic compounds (VOCs) in the presence of sunlight and stagnant air. VOCs can originate through natural sources, such as coniferous forests, and human activities including gasoline combustion, upstream oil and gas production, and from the evaporation of liquid fuels and substances. As outlined in Section 3.3, major sources of NO_x include transportation, fossil-fuelled electric power plants, and the upstream oil and gas industry.

Acute exposure to ground-level O₃ can cause shortness of breath, decreased lung function, and chest discomfort. Long-term exposure has been linked to premature mortality, and various adverse health outcomes. Environmental impacts to O₃ include the decrease of crop productivity and impacts to vegetation.

The SAAQS for O₃ are:

- 1-hour average = 82 ppb
- 8-hour average = 63 ppb based on the 3-year average of the annual fourth highest daily maximum 8-hour average concentrations.

O₃ is measured at the Clavet and Meadow Lake stations. In 2024, the average O₃ concentrations were 25.9 ppb for Clavet and 27.6 ppb at Meadow Lake. The highest 1-hour concentration recorded was 61.8 ppb at the Clavet station on May 11, 2024. The maximum 8-hour average was measured at the Meadow Lake station on May 23, 2024, reaching 55.7 ppb. There were no exceedances of the 1-hour or 8-hour SAAQS at either of the sites. Operational uptimes were 93.8% at Clavet and 85.2% at Meadow Lake. Table 9 and Table 10 show the O₃ summaries for 2024.

Table 9: Summary of Ozone Monitoring

Monitoring Station	Annual Average	Instrument Uptime	Maximum O ₃ Concentration			
			1-Hour Max.		8 Hour Max.	
	ppb	%	ppb	Time	ppb	Date
Clavet	25.9	93.8	61.8	5/11/2024 19:00	54.2	5/11/24
Meadow Lake	27.6	85.2	61.3	10/14/2024 19:00	55.7	5/23/24

Red font means an operational time less than 90%.

Table 10: Summary of Ozone Exceedances

Monitoring Station	No. of SAAQS O ₃ Exceedances	
	1-hr SAAQS	8-hr SAAQS
	82 ppb	63 ppb
Clavet	0	0
Meadow Lake	0	0



Pollution roses for O₃ at each of the stations are available in Figure 13 and Figure 14. At each location, most concentrations are between 20 and 30 ppb (62.4 % of the time at Clavet and 64.2% at Meadow Lake). Higher concentration events do not appear in a predominant location at the Clavet Station but occur predominately with winds in the east-southeast direction at Meadow Lake.

Figure 13: Clavet 1-Hour Average Ozone Pollution Rose

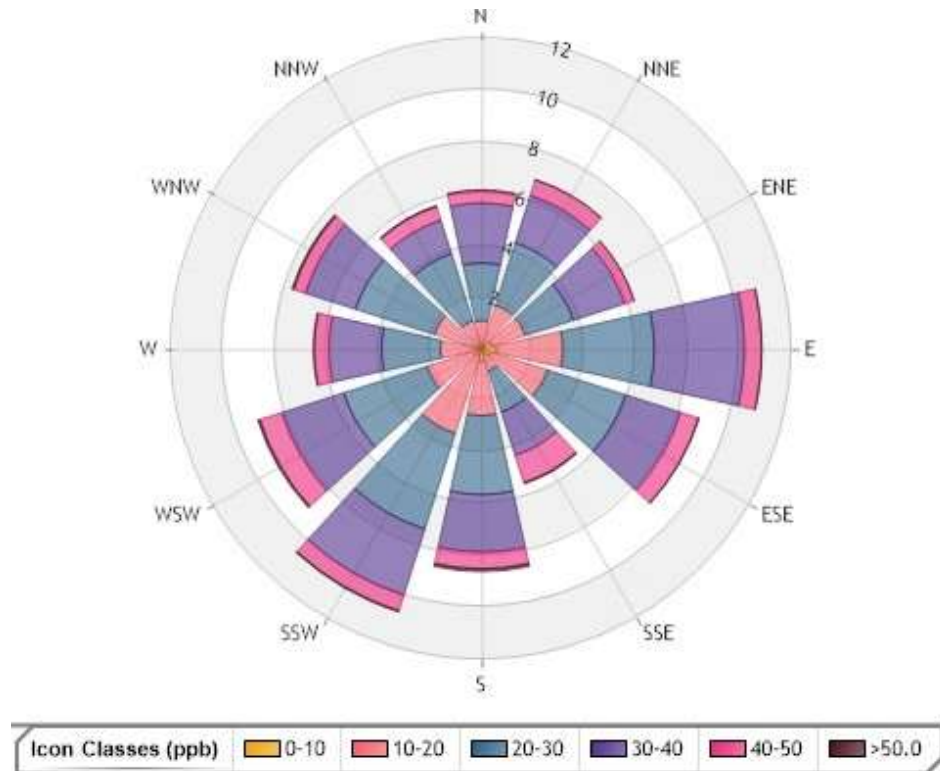
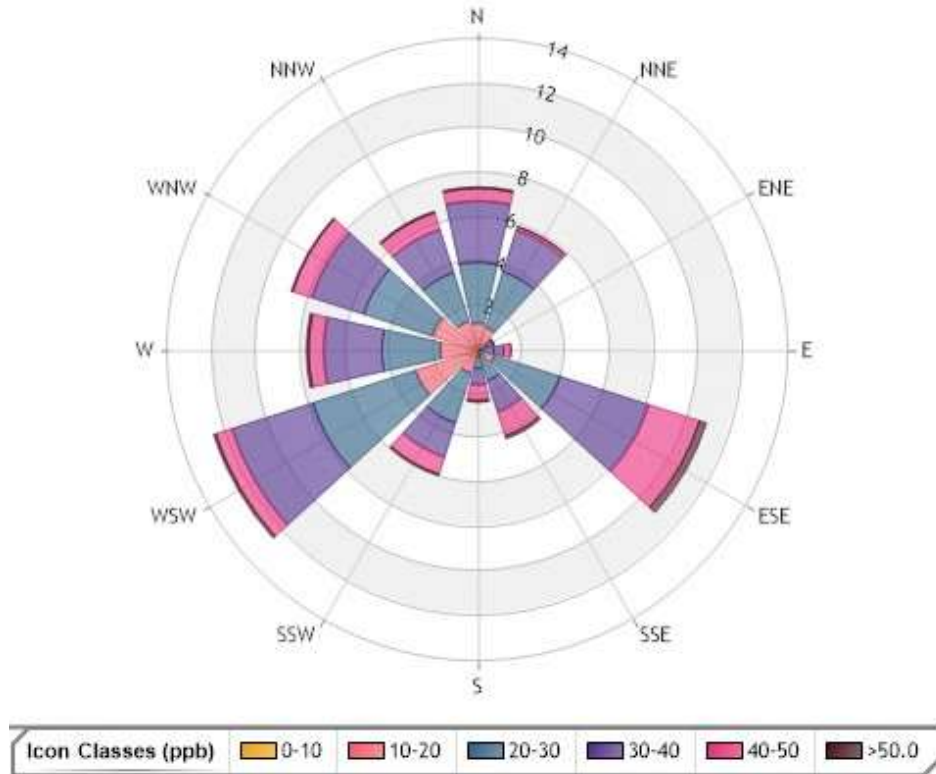


Figure 14: Meadow Lake 1-Hour Average Ozone Pollution Rose



3.5 Fine Particulate Matter (PM_{2.5})

PM_{2.5} refers to fine particulate matter with a diameter less than 2.5 micrometres (µm). These particles can vary in size, shape, and density and can originate from different sources such as vehicle and industrial emissions, wood burning, and the erosion of dust from fields. Secondary PM_{2.5} formation can occur from chemical reactions involving gases including SO₂, NO_x, and ammonia.

Exposure to PM_{2.5} is associated with a range of health issues, including shortness of breath, reduced lung function, and the worsening of heart and lung conditions such as asthma. Particulate matter has been linked to cardiac and respiratory diseases including bronchitis, emphysema and multiple forms of heart disease. Environmentally, PM_{2.5} can negatively impact vegetation, and can contribute to visibility problems and atmospheric haze.

The SAAQS for PM_{2.5} are:

- 24-hour average measured from midnight to midnight, with a value of 28 micrograms per cubic metre (µg/m³) based on the 98th percentile, averaged over three consecutive years.
- Annual average = 10 µg/m³.

PM_{2.5} is measured at each of the WYAMZ stations. In 2024, the average annual PM_{2.5} concentrations were between 6.7 µg/m³ at Maidstone Station and 8.3 µg/m³ at Clavet Station. The highest 1-hour concentration recorded was 355.5 µg/m³ at the Meadow Lake station on August 17, 2024. The maximum 24-hour average was measured at the Kerrobert station on July 22, 2024, reaching 122.6 µg/m³. There were exceedances of the 24-hour SAAQS at each



of the stations, with a maximum of 12, 24-hour exceedances at the Clavet Station. Operational uptimes were less than 90% at Clavet (81.0%), at Maidstone (77.0%), and at Meadow Lake (84.8%). Table 11 and Table 12 show the PM_{2.5} summaries for 2024.

Table 11: Summary of Fine Particulate Matter Monitoring

Monitoring Station	Annual Average	Instrument Uptime	Maximum PM _{2.5} Concentration and Time			
			1-Hour Max.		24 Hour Max.	
	µg/m ³	%	µg/m ³	Time	µg/m ³	Date
Clavet	8.3	81.0	185.2	7/21/2024 17:00	104.1	7/21/2024
Kerrobert	7.6	98.9	288.2	8/15/2024 02:00	122.6	7/22/2024
Maidstone	6.7	77.0	284.3	7/5/2024 24:00	71.3	7/20/2024
Meadow Lake	7.3	84.8	355.5	8/17/2024 18:00	38.0	8/15/2024

Red font indicates an operational time less than 90%.

Table 12: Summary of Fine Particulate Matter Exceedances

Monitoring Station	No. of SAAQS PM _{2.5} Exceedances	
	24-hr SAAQS	Annual SAAQS
	28 µg/m ³	10 µg/m ³
Clavet	12	0
Kerrobert	10	0
Maidstone	2	0
Meadow Lake	6	0

Pollution roses for PM_{2.5} at each of the stations are available from Figure 15 to Figure 18. Across all locations, PM_{2.5} concentrations were below 5 µg/m³ the majority of the time, ranging from 53.0% of the time at Clavet to 61.5% at Meadow Lake. Elevated concentrations (greater than 10 µg/m³) were more common during the summer months (July to September), coinciding with wildfire season. At Clavet, higher PM_{2.5} levels were most frequently associated with easterly winds; at Kerrobert, with westerly winds; at Maidstone occur more frequently with northwest and at Meadow Lake, with winds from the east-southeast and west-southwest.



Figure 15: Clavet 1-Hour Average Fine Particulate Matter Pollution Rose

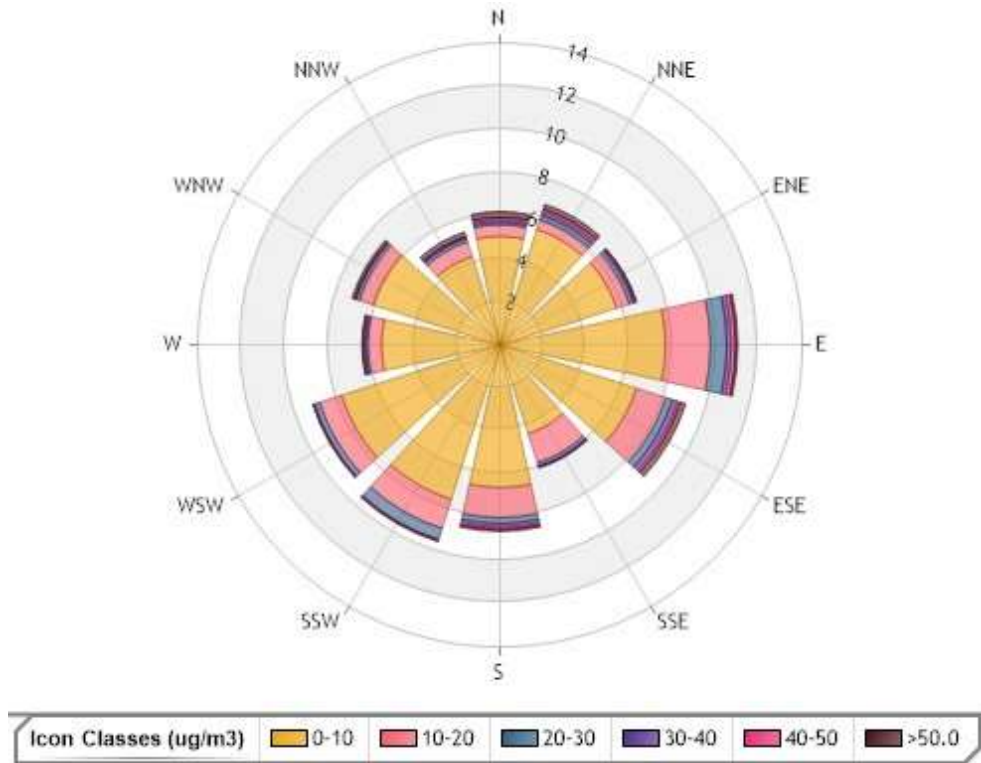


Figure 16: Kerrobert 1-Hour Average Fine Particulate Matter Pollution Rose

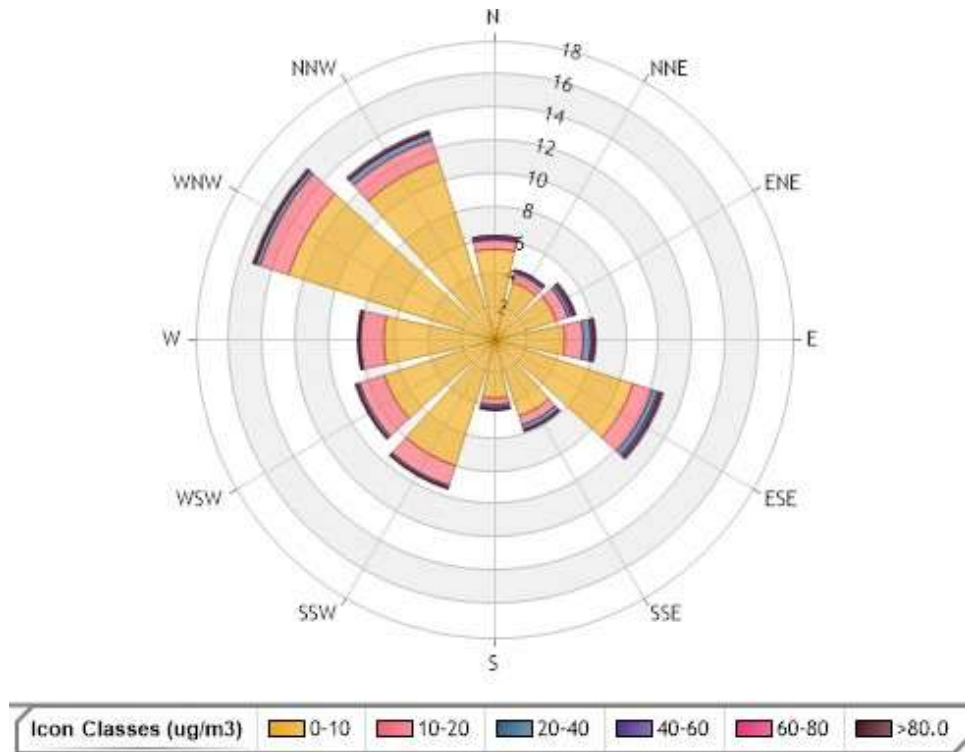


Figure 17: Maidstone 1-Hour Average Fine Particulate Matter Pollution Rose

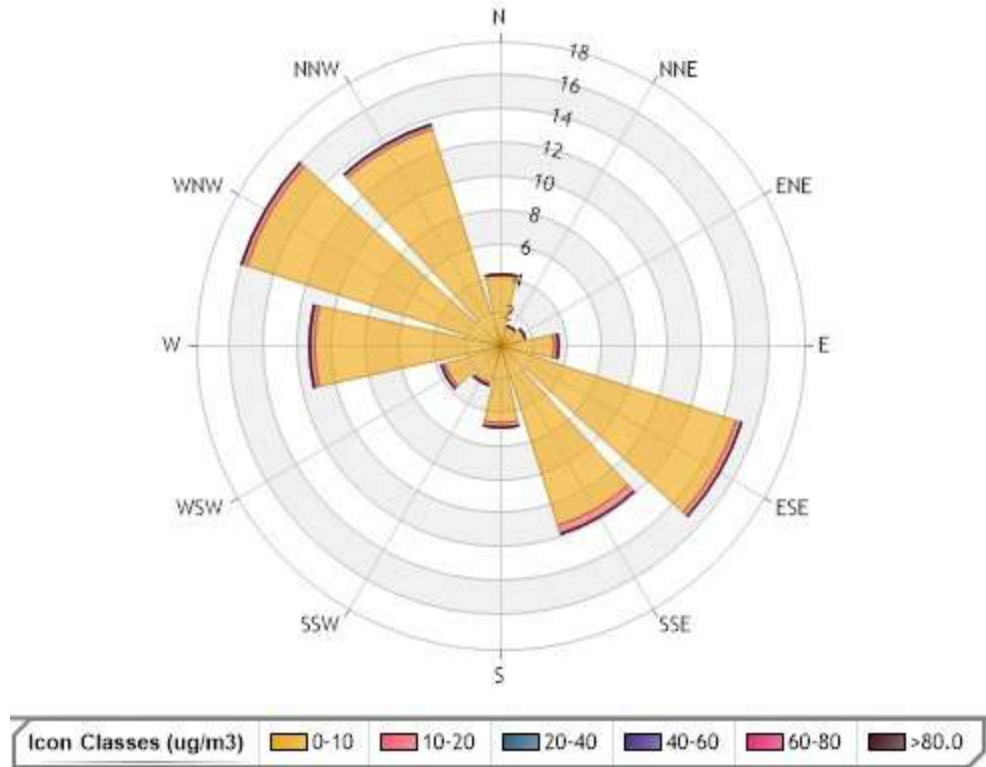
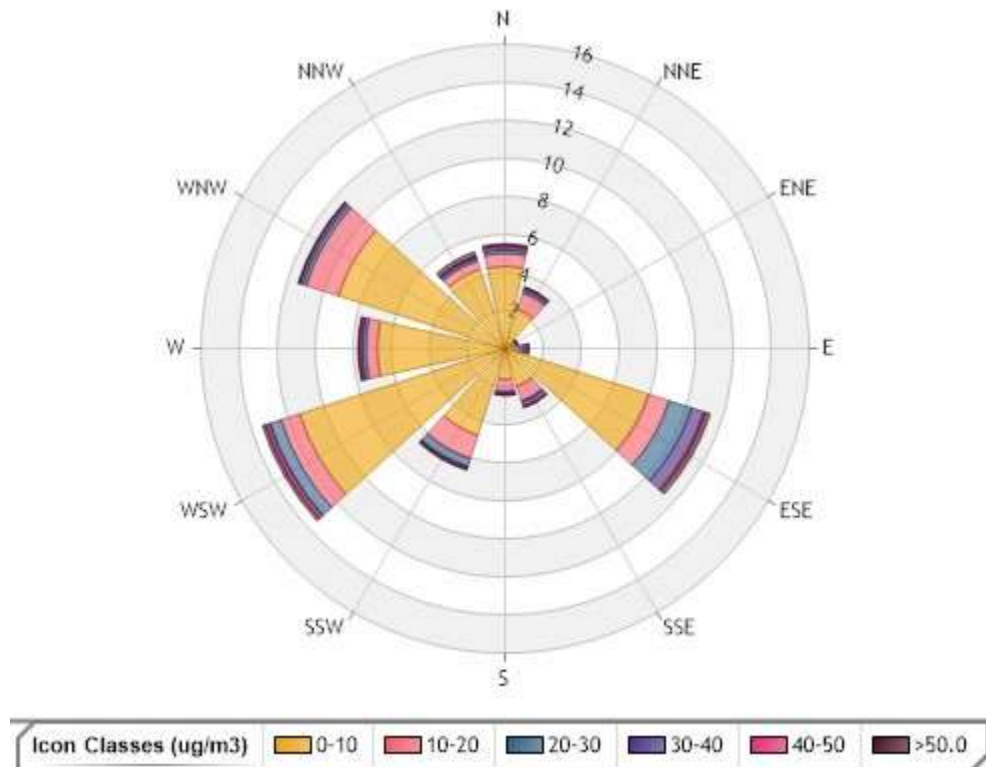


Figure 18: Meadow Lake 1-Hour Average Fine Particulate Matter Pollution Rose



4.0 Health Indices

4.1 Air Quality Health Index

Air Quality Health Index (AQHI) is a scale ranging from 1 to 10 that is designed to help the public make informed decisions about their health by limiting short-term exposure to air pollution and adjusting activity levels during periods of elevated pollution. The AQHI is calculated using three pollutants, including O₃, PM_{2.5}, and NO₂, and provides a rating that falls into one of four health risk categories:

- Low Risk (1 to 3)
- Moderate Risk (4 to 6)
- High Risk (7 to 10)
- Very High Risk (greater than 10).

All three pollutants are required to calculate the AQHI.

Table 13, sourced from Environment Canada (ECCC 2018), outlines the health messages associated with each risk category.

AQHI is calculated at both the Clavet and Meadow Lake monitoring stations. At both locations, air quality was rated as Low Risk the majority of the time - 98.8% of the time at Meadow Lake and 98.4% at Clavet. Moderate Risk levels occurred 1.6% of the time at Meadow Lake and 1.1% at Clavet. High Risk levels were observed only at Clavet, occurring 0.1% of the time. A summary of AQHI monitoring can be found in Table 14.

Table 13: Environment Canada Health Risk Classification for Air Quality Health Index

Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population*	General Population
Low	1 - 3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate	4 - 6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High	7 - 10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High	Above 10	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

* People with heart or breathing problems.



Table 14: Summary of Air Quality Health Index Monitoring

Station	Occurrence	Low	Moderate	High	Very High
Meadow Lake	Hours	6726	112	0	0
	Frequency	98.4%	1.6%	0.0%	0.0%
Clavet	Hours	5301	57	8	0
	Frequency	98.8%	1.1%	0.1%	0.0%

4.2 Air Quality Index

For locations that do not qualify to monitor for AQHI monitoring due to the absence of data for one or more required pollutants (O₃, PM_{2.5}, or NO₂), the Air Quality Index (AQI) can be used as an alternative. AQI is calculated using at least three of the following pollutants:

- O₃
- PM_{2.5}
- SO₂
- NO₂
- Carbon Monoxide (CO).

Similar to AQHI, the AQI is used to communicate outdoor air quality conditions to the public. However, it operates on a 1 to 100 scale, categorized as follows:

- Good (1 to 25) - No known harmful effects to soil, water, vegetation, animals, visibility, or human health.
- Fair (26 to 50) - Adequate protection against harmful effects to soil, water, vegetation, animals, material, visibility, and human health.
- Poor (51 to 100) - Not all aspects of the environment are adequately protected from possible adverse effects. Long-term control action may be necessary, depending on the frequency, duration, and circumstances of the readings.
- Very Poor (greater than 100) - In this range, further deterioration of air quality and continued high readings could pose a risk to public health.

AQI is typically calculated at the Maidstone Station. However, due to system downtimes, it could not be calculated in 2024. The Kerrobert Station does not qualify for the reporting requirements of either Index.

5.0 Quality Assurance and Quality Control Program

The WYAMZ contracts SLR Consulting (Canada) Ltd. (SLR) to conduct station maintenance, data validation, and reporting. SLR follows standard operating procedures (i.e., SOPs) and good practices based on current industry standards to ensure that reliable and accurate data is recorded.



6.0 Closure

We trust the information contained in this report meets your needs; however, please contact the individuals noted below with any questions.

Regards,

SLR Consulting (Canada) Ltd.



Craig Vatche, CET, B.Tech., EP
Senior Project Manager – Air Quality



Qamar Iqbal, M.Sc, EP
Team Lead, Ambient Air Quality Specialist



7.0 References

ECCC. 2018. Understanding Air Quality Health Index Messages. Environment and Climate Change Canada. <https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/understanding-messages.html>.

WYAMZ. 2018. Air Quality Matters. Western Yellowhead Air Management Zone. www.wyamz.ca.





Appendix A Saskatchewan Ambient Air Quality Standards

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

SLR Project No.: 208.030089.00001

November 27, 2025

TABLE 20: SASKATCHEWAN AMBIENT AIR QUALITY STANDARDS ($\mu\text{g}/\text{m}^3$)

Air Pollutant	1 Hour	8 Hours	24 Hours	Annual
Particulate Matter (PM _{2.5})			28 ^a	10
Particulate Matter (PM ₁₀)			50	
Total Suspended Particulates (TSP)			100	60 ^b
Nitrogen Dioxide (NO ₂)	300 (159 ppb)		200 (106 ppb)	45 ^c (24 ppb)
Sulphur Dioxide (SO ₂)	450 (172 ppb)		125 (48 ppb)	20 ^c (8 ppb)
Hydrogen Sulphide (H ₂ S)	15 (11 ppb)		5 (3.6 ppb)	
Ozone (O ₃)	160 (82 ppb)	124 ^d (63 ppb)		
Carbon Monoxide (CO)	15,000 (13,000 ppb)	6,000 (5,000 ppb)		

Footnotes

- (a) The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations.
- (b) Geometric means
- (c) Arithmetic means
- (d) The 3-year average of the annual 4th-highest daily maximum 8-hour average concentrations.



Appendix B Clavet Station: Continuous Monitoring Data

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

SLR Project No.: 208.030089.00001

November 27, 2025

Table B-1: Clavet Station - Summary statistics for continuous air monitoring results for 2024

Parameter	Unit	Operational Time	Uptime	Summary Statistics for Hourly Average Data		
		(Hours)	%	Average	Minimum	Maximum
NO	ppb	6667	75.9	0.9	0	33.3
NO2	ppb	6667	75.9	3.2	0	22.8
NOx	ppb	6667	75.9	4.0	0	47.3
O3	ppb	8237	93.8	25.9	0.5	61.8
PM2.5	µg/m ³	7112	81.0	8.3	0	185.2
Precipitation	mm	8773	99.9	0	0	16.6
Ambient Temperature	°C	8773	99.9	4.1	-39.9	33.9
Relative Humidity	%	8773	99.9	64.8	15.4	89.6
Wind Speed	m/s	8750	99.6	1.0	0	8.0



Table B-2: Summary of NO monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-5	5-10	10-50	50-172	> 172
January	711	95.6	1.4	9.4	3.0	-	-	51.9	44.7	3.4	0.0	0.0	0.0
February	547	78.6	1.1	10.0	3.2	-	-	59.2	38.8	1.8	0.2	0.0	0.0
March	713	95.8	0.9	32.2	3.4	-	-	73.4	25.4	1.0	0.3	0.0	0.0
April	690	95.8	0.4	6.4	1.1	-	-	86.8	12.8	0.4	0.0	0.0	0.0
May	700	94.1	0.4	7.6	1.0	-	-	87.7	11.9	0.4	0.0	0.0	0.0
June	678	94.2	0.6	17.7	2.0	-	-	81.1	18.1	0.6	0.1	0.0	0.0
July	351	47.2	0.8	12.1	1.5	-	-	70.9	28.8	0.0	0.3	0.0	0.0
August	0	0	-	0	0	-	-	-	-	-	-	-	-
September	173	24.03	0.53	6.1	1.1	-	-	85.0	13.9	1.2	0.0	0.0	0.0
October	713	95.83	0.71	16.6	2.2	-	-	79.4	19.6	0.7	0.3	0.0	0.0
November	688	95.56	1.42	33.3	7.2	-	-	68.6	26.0	3.3	2.0	0.0	0.0
December	703	94.49	0.90	6.1	2.1	-	-	66.6	32.7	0.7	0.0	0.0	0.0
Annual	6667	75.9	0.8	33.3	7.2	0	0	73.21	25.18	1.29	0.31	0.00	0.00

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table B-3: Summary of NO2 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	711	95.6	4.5	16.1	8.6	0	0	64.7	34.6	0.7	0.0	0.0	0.0
February	547	78.6	4.0	22.2	8.2	0	0	74.2	24.7	1.1	0.0	0.0	0.0
March	713	95.8	2.9	22.8	8.0	0	0	85.0	14.4	0.6	0.0	0.0	0.0
April	690	95.8	2.4	12.2	5.3	0	0	90.0	10.0	0.0	0.0	0.0	0.0
May	700	94.1	2.0	14.3	4.8	0	0	93.4	6.6	0.0	0.0	0.0	0.0
June	678	94.2	2.9	16.5	5.5	0	0	82.3	17.4	0.3	0.0	0.0	0.0
July	351	47.2	2.1	11.0	3.3	0	0	94.3	5.7	0.0	0.0	0.0	0.0
August	0	0.0	-	0	0	0	0	-	-	-	-	-	-
September	173	24.0	2.7	12.7	3.9	0	0	91.9	8.1	0.0	0.0	0.0	0.0
October	713	95.8	2.8	14	5.8	0	0	90.7	9.3	0.0	0.0	0.0	0.0
November	688	95.6	3.6	22.4	12.1	0	0	80.7	17.9	1.5	0.0	0.0	0.0
December	703	94.5	4.0	17.3	7.3	0	0	76.1	23.5	0.4	0.0	0.0	0.0
Annual	6667	75.9	3.1	22.8	12.1	0	0	83.0	16.6	0.4	0.0	0.0	0.0

¹ 1-hour SAAQS = 159

² 24-hour SAAQS = 106



Table B-4: Summary of NOx monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	711	95.6	5.9	23.8	11.2	-	-	49.5	47.0	3.5	0.0	0.0	0.0
February	547	78.6	5.1	26.9	9.9	-	-	60.3	37.1	2.6	0.0	0.0	0.0
March	713	95.8	3.8	41.5	10.4	-	-	76.4	22.3	1.3	0.0	0.0	0.0
April	690	95.8	2.8	15.1	6.2	-	-	87.2	12.6	0.1	0.0	0.0	0.0
May	700	94.1	2.4	21.2	5.8	-	-	90.9	8.9	0.3	0.0	0.0	0.0
June	678	94.2	3.5	27.0	6.6	-	-	78.0	20.9	1.0	0.0	0.0	0.0
July	351	47.2	3.3	18.5	6.0	-	-	80.3	19.4	0.3	0.0	0.0	0.0
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
September	173	24.0	3.2	15.3	5.0	-	-	85.5	13.9	0.6	0.0	0.0	0.0
October	713	95.8	3.5	23.6	8.0	-	-	82.9	16.5	0.6	0.0	0.0	0.0
November	688	95.6	5.0	47.3	17.9	-	-	69.2	26.2	4.7	0.0	0.0	0.0
December	703	94.5	4.9	19.8	9.4	-	-	61.7	37.1	1.1	0.0	0.0	0.0
Annual	6667	75.9	4.0	47.3	17.9	0.0	0.0	73.9	24.6	1.6	0.0	0.0	0.0

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table B-5: Summary of O3 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 8-hrs Conc.	1-Hour Exceedance ¹	8-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 10	10-20	20-40	40-65	65-82	>82
January	711	95.6	24.2	35.5	34.0	0.0	0.0	1.7	18.7	79.6	0.0	0.0	0.0
February	547	78.6	26.4	48.8	46.2	0.0	0.0	3.3	30.5	62.2	4.0	0.0	0.0
March	713	95.8	34.9	54.5	49.7	0.0	0.0	0.1	1.4	81.5	17.0	0.0	0.0
April	690	95.8	32.9	54.5	53.3	0.0	0.0	1.4	7.4	65.9	25.2	0.0	0.0
May	700	94.1	26.8	61.8	54.2	0.0	0.0	3.3	29.1	53.0	14.6	0.0	0.0
June	690	95.8	25.9	50.2	49.0	0.0	0.0	6.4	28.3	51.2	14.2	0.0	0.0
July	704	94.6	23.3	55.9	47.5	0.0	0.0	9.9	32.5	51.1	6.4	0.0	0.0
August	713	95.8	24.0	48.5	46.4	0.0	0.0	9.5	31.0	50.5	9.0	0.0	0.0
September	658	91.4	21.7	50.2	45.8	0.0	0.0	13.5	31.9	50.6	4.0	0.0	0.0
October	713	95.8	21.8	41.8	37.7	0.0	0.0	7.3	36.9	55.5	0.3	0.0	0.0
November	690	95.8	20.7	35.9	34.6	0.0	0.0	7.4	38.4	54.2	0.0	0.0	0.0
December	708	95.2	28.5	43.3	39.1	0.0	0.0	0.0	6.2	92.4	1.4	0.0	0.0
Annual	8237	93.8	25.9	61.8	54.2	0.0	0.0	5.3	24.2	62.4	8.1	0.0	0.0

¹ 1-hour SAAQS = 82

² 8-hour SAAQS = 63



Table B-6: Summary of PM2.5 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-10	10-15	15-30	30-80	>80
January	743	99.9	5.2	49.4	14.8	-	0.0	62.0	29.7	4.7	2.8	0.7	0.0
February	695	99.9	6.3	36.8	18.5	-	0.0	57.8	20.9	12.2	8.6	0.4	0.0
March	744	100.0	4.2	26.7	10.3	-	0.0	72.4	20.6	5.1	1.9	0.0	0.0
April	720	100.0	5.0	55.6	10.8	-	0.0	61.5	31.5	5.1	1.3	0.6	0.0
May	739	99.3	6.2	161.7	43.4	-	1.0	62.0	27.1	6.6	3.1	0.3	0.9
June	719	99.9	4.5	36.2	9.8	-	0.0	70.7	22.3	4.9	1.9	0.3	0.0
July	729	98.0	20.8	185.2	104.1	-	5.0	11.4	21.4	21.9	27.0	15.8	2.5
August	744	100.0	17.0	167.7	68.6	-	5.0	16.3	29.0	18.5	21.5	13.0	1.6
September	718	99.7	8.4	171.1	29.3	-	1.0	43.6	33.6	9.1	12.1	1.4	0.3
October	561	75.4	4.2	28.4	11.5	-	0.0	78.4	18.2	2.7	0.7	0.0	0.0
November	0	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	-
December	0	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	-
Annual	7112	81.0	8.2	185.2	104.1	0.0	12.0	53.0	25.6	9.2	8.3	3.3	0.5

¹ No 1-hour SAAQS for this parameter

² 24-hour SAAQS = 28



Table B-7: Summary of Precipitation monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Total Precipitation	Maximum 1-hr Precip.	Maximum 24-hrs Precip.	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(mm)	(mm)	(mm)	≤ 5	5-10	10-15	15-30	30-80	>80
January	743	99.9	0.1	0.0	0.1	100.0	0.0	0.0	0.0	0.0	0.0
February	696	100.0	1.2	0.7	0.7	100.0	0.0	0.0	0.0	0.0	0.0
March	744	100.0	0.1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
April	720	100.0	7.3	1.7	3.8	100.0	0.0	0.0	0.0	0.0	0.0
May	739	99.3	34.2	5.2	12.0	99.9	0.1	0.0	0.0	0.0	0.0
June	720	100.0	145.3	16.0	29.2	99.2	0.6	0.1	0.1	0.0	0.0
July	742	99.7	17.7	8.4	12.5	99.9	0.1	0.0	0.0	0.0	0.0
August	744	100.0	76.2	16.6	25.6	99.2	0.5	0.1	0.1	0.0	0.0
September	719	99.9	31.3	3.1	0.4	100.0	0.0	0.0	0.0	0.0	0.0
October	744	100.0	12.6	3.1	0.4	100.0	0.0	0.0	0.0	0.0	0.0
November	720	100.0	0.6	0.2	0.0	100.0	0.0	0.0	0.0	0.0	0.0
December	742	99.7	1.3	0.5	0.1	100.0	0.0	0.0	0.0	0.0	0.0
Annual	8773	99.9	327.7	16.6	29.2	99.8	0.1	0.0	0.0	0.0	0.0



Table B-8: Summary of Ambient Temperature monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Temperature	Minimum 1-hr Temp	Maximum 1-hr Temp	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(°C)	(°C)	(°C)	≤ -30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	743	99.9	-14.4	-39.9	3.7	12.5	30.0	47.9	9.6	0.0	0.0
February	696	100.0	-7.4	-31.8	2.4	0.7	14.2	70.5	14.5	0.0	0.0
March	744	100.0	-8.0	-31.4	3.1	0.1	18.0	65.7	16.1	0.0	0.0
April	720	100.0	6.6	-7.4	14.5	0.0	0.0	15.7	72.2	12.1	0.0
May	739	99.3	11.4	0.0	18.3	0.0	0.0	0.0	72.8	27.2	0.0
June	720	100.0	14.5	3.8	20.1	0.0	0.0	0.0	58.2	41.8	0.0
July	742	99.7	21.1	10.4	25.5	0.0	0.0	0.0	13.7	78.8	7.4
August	744	100.0	18.6	5.8	25.5	0.0	0.0	0.0	27.8	70.2	2.0
September	719	99.9	15.9	3.4	23.4	0.0	0.0	0.0	50.9	44.9	4.2
October	744	100.0	6.4	-7.1	11.8	0.0	0.0	15.3	78.1	6.6	0.0
November	720	100.0	-5.4	-33.4	7.8	1.8	16.9	45.1	36.1	0.0	0.0
December	742	99.7	-10.9	-30.3	1.5	0.3	28.6	63.2	8.0	0.0	0.0
Annual	8773	99.9	4.0	-39.9	25.5	1.3	9.0	26.9	38.1	23.6	1.1



Table B-9: Summary of Relative Humidity monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Relative Humidity	Minimum 1-hr RH	Maximum 1-hr RH	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(%)	(%)	(%)	≤ 15	15 - 30	30 - 60	60 - 80	80 - 90	>90
January	743	99.9	72.7	48.1	81.8	0.0	0.0	3.2	78.1	18.7	0.0
February	696	100.0	73.4	42.5	86.3	0.0	0.0	10.9	62.8	26.3	0.0
March	744	100.0	65.9	30.3	80.6	0.0	0.0	27.0	64.5	8.5	0.0
April	720	100.0	54.5	15.6	83.0	0.0	14.3	43.1	33.8	8.9	0.0
May	739	99.3	58.0	15.4	81.6	0.0	10.1	40.6	30.4	18.8	0.0
June	720	100.0	61.3	17.2	78.7	0.0	4.4	40.3	34.9	20.4	0.0
July	742	99.7	64.0	23.4	79.1	0.0	1.6	38.7	37.9	21.8	0.0
August	744	100.0	59.4	19.7	79.1	0.0	6.6	42.7	31.9	18.8	0.0
September	719	99.9	59.6	16.4	83.4	0.0	9.3	39.2	31.0	20.4	0.0
October	744	100.0	60.6	24.9	76.8	0.0	1.1	44.0	43.0	12.0	0.0
November	720	100.0	73.1	34.3	84.0	0.0	0.0	10.3	65.6	24.2	0.0
December	742	99.7	75.7	55.7	85.1	0.0	0.0	0.5	73.7	25.7	0.0
Annual	8773	99.9	64.8	15.4	86.3	0.0	3.9	28.4	49.0	18.7	0.0



Table B-10: Wind Frequency Table 2024

Month	Percentage of Data within Wind Speed Range (m/s)						
	0.5-1.2	1.2 ~ 2.4	2.4 ~ 3.6	3.6 ~ 4.8	4.8 ~ 6.0	>6.0	Total
North	0.62	1.41	0.98	0.80	0.51	0.20	4.52
North North-East	0.78	2.14	1.76	0.92	0.24	0.00	5.84
East North-East	1.08	1.83	0.89	0.29	0.08	0.08	4.25
East North-East	2.15	2.12	0.84	0.18	0.08	0.00	5.37
East	3.13	3.84	1.18	0.07	0.00	0.00	8.22
East South-East	2.67	4.01	0.94	0.10	0.00	0.00	7.72
South-East	1.39	3.01	1.16	0.02	0.00	0.00	5.58
South South-East	1.34	1.28	0.56	0.10	0.00	0.00	3.28
South	3.32	2.47	0.85	0.13	0.00	0.00	6.77
South South-West	1.37	4.98	1.60	0.16	0.00	0.00	8.11
South-West	1.00	2.82	1.75	0.13	0.02	0.00	5.72
West South-West	0.97	3.10	2.62	0.91	0.56	0.07	8.23
West	0.81	1.79	1.45	0.43	0.10	0.00	4.58
West North-West	0.94	1.77	1.31	0.43	0.21	0.05	4.71
North-West	0.70	1.81	1.73	1.03	0.73	0.20	6.20
North North-West	0.65	1.07	1.04	0.48	0.18	0.14	3.56
Summary	22.92	39.45	20.66	6.18	2.71	0.74	92.66
Percentage Calm	7.32						





Appendix C Kerrobert Station: Continuous Monitoring Data

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

SLR Project No.: 208.030089.00001

November 27, 2025

Table C-1: Kerrobert Station - Summary statistics for continuous air monitoring results for 2024

Parameter	Unit	Operational Time	Uptime	Summary Statistics for Hourly Average Data		
		(Hours)	%	Average	Minimum	Maximum
H2S	ppb	8284	94.3	0.3	0	3.6
SO2	ppb	6649	75.7	0.1	0	8.0
PM2.5	µg/m ³	8688	98.9	7.6	0	288.2
Precipitation	mm	8757	99.7	0.0	0.0	13.2
Ambient Temperature	°C	8757	99.7	3.6	-42.1	34.4
Relative Humidity	%	8660	98.6	64.2	13.0	90.8
Wind Speed	m/s	8748	99.6	1.4	0.0	9.0



Table C-2: Summary of H2S monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-3.6	3.6-5	5-8	8-11	>11
January	699	94.0	0.2	0.9	0.4	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
February	653	93.8	0.2	0.9	0.5	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
March	713	95.8	0.2	1.3	0.5	0.0	0.0	99.7	0.3	0.0	0.0	0.0	0.0
April	688	95.6	0.2	3.6	0.5	0.0	0.0	99.7	0.3	0.0	0.0	0.0	0.0
May	703	94.5	0.2	3.1	0.9	0.0	0.0	97.9	2.1	0.0	0.0	0.0	0.0
June	690	95.8	0.2	1.6	0.6	0.0	0.0	99.7	0.3	0.0	0.0	0.0	0.0
July	711	95.6	0.5	3.3	0.9	0.0	0.0	93.0	7.0	0.0	0.0	0.0	0.0
August	712	95.7	0.4	1.7	0.7	0.0	0.0	96.8	3.2	0.0	0.0	0.0	0.0
September	683	94.9	0.9	3.4	1.5	0.0	0.0	63.0	37.0	0.0	0.0	0.0	0.0
October	710	95.4	0.0	0.4	0.2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
November	686	95.3	0.2	0.7	0.4	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
December	636	85.5	0.2	1.7	0.4	0.0	0.0	99.5	0.5	0.0	0.0	0.0	0.0
Annual	8284	94.3	0.3	3.6	1.5	0.0	0.0	95.8	4.2	0.0	0.0	0.0	0.0

¹ 1-hour SAAQS = 11

² 24-hour SAAQS = 3.6



Table C-3: Summary of SO2 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-5	5-11	11-57	57-172	172
January	699	94.0	0.3	8.0	1.8	0.0	0.0	90.1	9.7	0.1	0.0	0.0	0.0
February	653	93.8	0.2	2.2	0.5	0.0	0.0	98.0	2.0	0.0	0.0	0.0	0.0
March	713	95.8	0.0	0.4	0.2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
April	688	95.6	0.0	0.5	0.1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
May	704	94.6	0.0	0.3	0.1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
June	690	95.8	0.0	0.6	0.3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
July	712	95.7	0.1	3.3	0.3	0.0	0.0	99.6	0.4	0.0	0.0	0.0	0.0
August	712	95.7	0.1	0.6	0.2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
September	681	94.6	0.3	1.1	0.7	0.0	0.0	99.9	0.1	0.0	0.0	0.0	0.0
October	92	12.4	0.0	1.5	0.0	0.0	0.0	98.9	1.1	0.0	0.0	0.0	0.0
November	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
December	305	41.0	0.0	0.2	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Annual	6649	75.7	0.1	8.0	1.8	0.0	0.0	98.7	1.3	0.0	0.0	0.0	0.0

¹ 1-hour SAAQS = 172

² 24-hour SAAQS = 48



Table C-4: Summary of PM2.5 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-10	10-15	15-30	30-80	>80
January	730	98.1	6.3	39.1	13.9	-	0.0	47.4	35.1	12.5	4.8	0.3	0.0
February	694	99.7	5.9	36.1	15.3	-	0.0	56.5	24.6	10.5	7.5	0.9	0.0
March	726	97.6	3.8	17.3	10.7	-	0.0	76.4	19.8	2.9	0.8	0.0	0.0
April	718	99.7	3.8	11.7	7.0	-	0.0	72.3	25.5	2.2	0.0	0.0	0.0
May	741	99.6	5.2	153.2	35.5	-	1.0	75.4	16.6	4.0	2.8	0.5	0.5
June	720	100.0	4.7	39.7	12.3	-	0.0	69.9	23.3	3.8	2.6	0.4	0.0
July	702	94.4	21.6	198.6	122.6	-	6.0	22.2	24.6	20.4	12.0	15.5	5.3
August	743	99.9	16.9	288.2	107.7	-	3.0	20.5	31.8	20.3	19.2	6.1	2.2
September	716	99.4	7.8	43.6	17.2	-	0.0	42.9	32.1	12.0	12.2	0.8	0.0
October	743	99.9	4.2	20.4	8.6	-	0.0	73.1	22.6	3.1	1.2	0.0	0.0
November	716	99.4	5.2	22.8	14.0	-	0.0	62.2	25.3	10.3	2.2	0.0	0.0
December	739	99.3	5.9	79.6	13.3	-	0.0	57.1	27.3	12.3	3.1	0.1	0.0
Annual	8688	98.9	7.6	288.2	122.6	0.0	10.0	56.4	25.7	9.5	5.7	2.0	0.7

¹ No 1-hour SAAQS for this parameter

² 24-hour SAAQS = 28



Table C-5: Summary of Precipitation monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Total Precipitation	Maximum 1-hr Precip.	Maximum 24-hrs Precip.	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(mm)	(mm)	(mm)	≤ 5	5-10	10-15	15-30	30-80	>80
January	730	98.1	0.1	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
February	695	99.9	0.6	0.3	0.3	100.0	0.0	0.0	0.0	0.0	0.0
March	744	100.0	0.4	0.1	0.4	100.0	0.0	0.0	0.0	0.0	0.0
April	718	99.7	14.2	2.4	4.1	100.0	0.0	0.0	0.0	0.0	0.0
May	741	99.6	40.1	3.4	8.7	100.0	0.0	0.0	0.0	0.0	0.0
June	720	100.0	170.3	13.2	47.4	98.5	1.4	0.1	0.0	0.0	0.0
July	743	99.9	24.5	8.2	8.6	99.9	0.1	0.0	0.0	0.0	0.0
August	743	99.9	24.4	3.2	13.6	100.0	0.0	0.0	0.0	0.0	0.0
September	717	99.6	34.0	2.9	0.7	100.0	0.0	0.0	0.0	0.0	0.0
October	743	99.9	4.8	2.2	0.2	100.0	0.0	0.0	0.0	0.0	0.0
November	720	100.0	2.4	0.4	0.1	100.0	0.0	0.0	0.0	0.0	0.0
December	743	99.9	0.8	0.7	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Annual	8757	99.7	316.5	13.2	47.4	99.9	0.1	0.0	0.0	0.0	0.0



Table C-6: Summary of Ambient Temperature monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Temperature	Minimum 1-hr Temp	Maximum 1-Hr Temp	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(°C)	(°C)	(°C)	≤ -30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	730	98.1	-15.1	-42.1	4.0	13.4	31.5	44.0	11.1	0.0	0.0
February	695	99.9	-8.0	-29.6	2.3	0.0	15.7	73.2	11.1	0.0	0.0
March	744	100.0	-8.0	-30.1	3.7	0.1	18.1	66.4	15.3	0.0	0.0
April	718	99.7	6.2	-5.5	12.1	0.0	0.0	13.5	78.3	8.2	0.0
May	741	99.6	10.2	0.0	18.1	0.0	0.0	0.3	80.2	19.6	0.0
June	720	100.0	13.9	1.5	20.2	0.0	0.0	0.0	60.7	39.3	0.0
July	743	99.9	20.2	9.7	25.6	0.0	0.0	0.0	20.2	75.6	4.2
August	743	99.9	18.1	6.1	24.3	0.0	0.0	0.0	35.8	63.5	0.7
September	717	99.6	15.2	2.0	22.6	0.0	0.0	0.0	59.4	37.0	3.6
October	743	99.9	5.9	-7.5	12.6	0.0	0.0	17.0	76.6	6.5	0.0
November	720	100.0	-5.8	-26.8	5.5	0.0	21.0	47.4	31.7	0.0	0.0
December	743	99.9	-10.5	-27.4	1.3	0.0	28.3	64.7	7.0	0.0	0.0
Annual	8757	99.7	3.5	-42.1	25.6	1.1	9.5	27.1	40.6	20.9	0.7



Table C-7: Summary of Relative Humidity monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Relative Humidity	Minimum 1-hr RH	Maximum 1-Hr RH	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(%)	(%)	(%)	≤ 15	15 - 30	30 - 60	60 - 80	80 - 90	>90
January	716	96	71	50	80	0	0	3	88	9	0
February	688	99	71	47	84	0	0	11	70	19	0
March	739	99	67	40	73	0	0	20	73	7	0
April	711	99	54	15	72	0	14	44	35	7	0
May	728	98	62	20	81	0	7	35	32	25	0
June	714	99	59	20	83	0	6	42	36	16	0
July	725	97	64	24	79	0	3	37	37	22	2
August	716	96	57	16	0	0	10	41	33	16	0
September	717	100	58	13	88	0	9	43	28	19	0
October	743	100	60	22	74	0	2	45	44	9	0
November	720	100	73	39	83	0	0	8	76	16	0
December	743	100	74	54	84	0	0	1	88	11	0
Annual	8660	99	64	13	88	0	4	28	54	15	0



Table C-8: Wind Frequency Table 2024

Wind Direction Sector	Percentage of Data within Windspeed Range (m/s)						Total
	0.5-1.2	1.2 ~ 2.4	2.4 ~ 3.6	3.6 ~ 4.8	4.8 ~ 6.0	>6.0	
North	0.95	2.38	1.12	0.07	0.01	0.00	4.53
North North-East	0.52	1.89	0.92	0.35	0.05	0.03	3.76
East North-East	0.50	1.84	0.55	0.23	0.14	0.09	3.35
East North-East	0.58	1.11	0.97	0.38	0.32	0.37	3.73
East	0.39	1.54	1.21	0.61	0.44	0.16	4.35
East South-East	0.57	2.29	2.56	1.84	0.92	0.57	8.75
South-East	0.32	1.28	1.76	0.96	0.73	0.43	5.48
South South-East	0.25	0.92	1.04	0.68	0.47	0.42	3.78
South	0.47	0.76	0.75	0.52	0.45	0.13	3.08
South South-West	0.59	1.33	1.49	0.94	0.39	0.16	4.90
South-West	1.46	4.04	2.15	1.07	0.40	0.14	9.26
West South-West	1.24	1.50	1.21	0.90	0.42	0.13	5.40
West	1.04	1.07	1.33	1.22	0.76	0.65	6.07
West North-West	1.36	3.60	2.86	1.40	1.02	0.37	10.61
North-West	1.62	5.12	3.64	2.18	0.46	0.14	13.16
North North-West	0.94	3.74	2.25	0.52	0.02	0.00	7.47
Summary	12.80	34.41	25.81	13.87	7.00	3.79	97.68
Percentage Calm	2.3						





Appendix D Maidstone Station: Continuous Monitoring Data

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

SLR Project No.: 208.030089.00001

November 27, 2025

Table D-1: Maidstone Station - Summary statistics for continuous air monitoring results for 2024

Parameter	Unit	Operational Time	Uptime	Summary Statistics for Hourly Average Data		
		(Hours)	%	Average	Minimum	Maximum
NO	ppb	137	1.6	0.6	0	5.8
NO2	ppb	137	1.6	0.9	0	8.5
NOx	ppb	137	1.6	1.2	0	9.3
SO2	ppb	3069	34.9	0.3	0	11.8
H2S	ppb	3069	34.9	0.2	0	3.2
PM2.5	µg/m ³	6767	77.0	6.7	0.0	284.3
Precipitation	mm	7186	81.8	0.0	0.0	6.6
Ambient Temperature	°C	7186	81.8	1.2	-39.4	34.0
Relative Humidity	%	7186	81.8	64.6	12.2	90.6
Wind Speed	m/s	7186	81.8	1.0	0.0	7.4



Table D-2: Summary of NO monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-5	5-10	10-50	50-172	> 172
January	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
February	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
March	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
April	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
May	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
June	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
July	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
September	133	18.5	0.7	5.8	1.2	-	-	75.9	23.3	0.8	0.0	0.0	0.0
October	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
November	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
December	4	0.5	0.1	0.6	0.0	-	-	100.0	0.0	0.0	0.0	0.0	0.0
Annual	137	1.6	0.4	5.8	1.2	0.0	0.0	76.6	22.6	0.7	0.0	0.0	0.0

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table D-3: Summary of NO2 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
February	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
March	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
April	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
May	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
June	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
July	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
August	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
September	133	18.5	1.0	8.5	2.0	0.0	0.0	93.2	6.8	0.0	0.0	0.0	0.0
October	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
November	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
December	4	0.5	-	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Annual	137	1.6	-0.6	8.5	2.0	0.0	0.0	93.4	6.6	0.0	0.0	0.0	0.0

¹ 1-hour SAAQS = 159

² 24-hour SAAQS = 106



Table D-4: Summary of NOx monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
February	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
March	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
April	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
May	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
June	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
July	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
September	133	18.5	1.3	9.3	2.2	-	-	92.5	7.5	0.0	0.0	0.0	0.0
October	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
November	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
December	4	0.5	-	0.0	0.0	-	-	100.0	0.0	0.0	0.0	0.0	0.0
Annual	137	1.6	-0.3	9.3	2.2	0.0	0.0	92.7	7.3	0.0	0.0	0.0	0.0

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table D-5: Summary of H2S monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 8-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-3.6	3.6-5	5-8	8-11	>11
January	713	95.8	0.1	1.1	0.4	-	-	99.7	0.3	0.0	0.0	0.0	0.0
February	658	94.5	0.1	1.3	0.5	-	-	99.7	0.3	0.0	0.0	0.0	0.0
March	713	95.8	0.2	2.1	0.5	-	-	99.3	0.7	0.0	0.0	0.0	0.0
April	690	95.8	0.2	3.2	1.7	-	-	95.8	4.2	0.0	0.0	0.0	0.0
May	233	31.3	0.2	1.5	0.8	-	-	97.9	2.1	0.0	0.0	0.0	0.0
June	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
July	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
September	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
October	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
November	0	0.0	-	0.0	0.0	-	-	-	-	-	-	-	-
December	62	8.3	0.2	1.0	0.2	-	-	98.4	1.6	0.0	0.0	0.0	0.0
Annual	3069	34.9	0.2	3.2	1.7	0.0	0.0	98.6	1.4	0.0	0.0	0.0	0.0

¹ 1-hour SAAQS = 11

² 24-hour SAAQS = 3.6



Table D-6: Summary of SO2 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-5	5-11	11-57	57-172	172
January	713	95.8	0.3	11.8	1.4	0.0	0.0	93.7	6.2	0.0	0.1	0.0	0.0
February	658	94.5	0.3	6.8	1.4	0.0	0.0	94.4	5.0	0.6	0.0	0.0	0.0
March	713	95.8	0.4	7.6	1.5	0.0	0.0	87.0	12.6	0.4	0.0	0.0	0.0
April	690	95.8	0.3	7.7	1.4	0.0	0.0	92.3	7.0	0.7	0.0	0.0	0.0
May	233	31.3	0.1	1.8	0.5	0.0	0.0	96.6	3.4	0.0	0.0	0.0	0.0
June	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
July	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
August	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
September	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
October	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
November	0	0.0	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-
December	62	8.3	1.0	7.6	0.7	0.0	0.0	75.8	22.6	1.6	0.0	0.0	0.0
Annual	3069	34.9	0.4	11.8	1.5	0.0	0.0	91.8	7.7	0.4	0.0	0.0	0.0

¹ 1-hour SAAQS = 172

² 24-hour SAAQS = 48



Table D-7: Summary of PM2.5 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hours Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-10	10-15	15-30	30-80	>80
January	744	100.0	8.1	51.7	21.3	-	0.0	40.9	31.0	17.2	9.4	1.5	0.0
February	696	100.0	6.3	40.7	18.7	-	0.0	58.5	19.8	9.6	11.1	1.0	0.0
March	744	100.0	4.7	33.6	10.8	-	0.0	69.4	21.9	3.4	5.1	0.3	0.0
April	720	100.0	4.1	30.1	5.9	-	0.0	69.7	26.7	2.9	0.6	0.1	0.0
May	688	92.5	6.1	202.1	25.0	-	0.0	61.6	25.4	7.8	3.6	1.0	0.4
June	702	97.5	7.0	44.6	12.6	-	0.0	32.1	52.3	12.1	2.8	0.7	0.0
July	607	81.6	18.4	284.3	71.3	-	2.0	3.0	37.9	27.3	18.9	10.0	2.8
August	0	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	-
September	206	28.6	3.1	19.7	5.2	-	0.0	84.5	14.1	0.0	1.5	0.0	0.0
October	744	100.0	3.9	24.2	10.2	-	0.0	74.2	21.6	2.8	1.3	0.0	0.0
November	461	64.0	4.8	37.9	9.2	-	0.0	58.8	37.1	3.9	0.0	0.2	0.0
December	455	61.2	5.0	13.6	8.4	-	0.0	59.8	36.3	4.0	0.0	0.0	0.0
Annual	6767	77.0	6.5	284.3	71.3	0.0	2.0	54.2	29.9	8.9	5.3	1.4	0.3

¹ No 1-hour SAAQS for this parameter

² 24-hour SAAQS = 28



Table D-8: Summary of Precipitation monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Total Precipitation	Maximum 1-hr Precip.	Maximum 24-hrs Precip.	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(mm)	(mm)	(mm)	≤ 5	5-10	10-15	15-30	30-80	>80
January	744	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
February	696	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
March	744	100.0	0.2	0.2	0.0	100.0	0.0	0.0	0.0	0.0	0.0
April	720	100.0	17.7	4.1	0.2	100.0	0.0	0.0	0.0	0.0	0.0
May	692	93.0	35.7	3.7	0.2	100.0	0.0	0.0	0.0	0.0	0.0
June	720	100.0	46.4	6.6	0.7	99.9	0.1	0.0	0.0	0.0	0.0
July	742	99.7	37.8	6.0	0.4	99.9	0.1	0.0	0.0	0.0	0.0
August	0	0.0	0.0	0.0	0.0	-	-	-	-	-	-
September	206	28.6	21.8	4.7	0.5	100.0	0.0	0.0	0.0	0.0	0.0
October	744	100.0	1.7	0.4	0.0	100.0	0.0	0.0	0.0	0.0	0.0
November	720	100.0	3.7	1.1	0.1	100.0	0.0	0.0	0.0	0.0	0.0
December	458	61.6	6.1	2.6	0.2	100.0	0.0	0.0	0.0	0.0	0.0
Annual	7186	81.8	171.2	6.6	0.7	100.0	0.0	0.0	0.0	0.0	0.0



Table D-9: Summary of Ambient Temperature monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Temperature	Minimum 1-hr Temp	Maximum 1-Hr Temp	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(°C)	(°C)	(°C)	≤ -30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	744	100.0	-15.5	-39.4	-0.2	14.2	31.7	49.6	4.4	0.0	0.0
February	696	100.0	-8.6	-32.9	0.2	2.0	17.2	72.3	8.5	0.0	0.0
March	744	100.0	-9.2	-36.4	4.3	2.3	21.8	59.9	16.0	0.0	0.0
April	720	100.0	5.8	-5.9	12.6	0.0	0.0	16.8	75.0	8.2	0.0
May	692	93.0	10.3	-0.8	17.7	0.0	0.0	0.7	79.3	19.9	0.0
June	720	100.0	13.5	2.2	17.7	0.0	0.0	0.0	64.7	35.3	0.0
July	742	99.7	20.0	7.8	25.2	0.0	0.0	0.0	22.2	70.8	7.0
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-
September	206	28.6	12.9	2.5	18.6	0.0	0.0	0.0	69.9	29.1	1.0
October	744	100.0	4.8	-7.1	11.0	0.0	0.0	18.5	78.0	3.5	0.0
November	720	100.0	-6.0	-30.7	7.3	0.3	19.4	53.1	26.9	0.3	0.0
December	458	61.6	-11.4	-28.3	2.0	0.0	39.3	48.0	12.7	0.0	0.0
Annual	7186	81.8	1.5	-39.4	25.2	1.9	11.7	30.4	40.5	14.8	0.8



Table D-10: Summary of Relative Humidity monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Relative Humidity	Minimum 1-hr RH	Maximum 1-Hr RH	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(%)	(%)	(%)	≤ 15	15 - 30	30 - 60	60 - 80	80 - 90	>90
January	744	100.0	69.2	51.3	0.0	0.0	0.0	10.2	85.3	4.4	0.0
February	696	100.0	67.2	40.0	0.0	0.0	0.0	22.3	66.4	11.4	0.0
March	744	100.0	61.2	28.2	0.0	0.0	0.7	44.9	52.2	2.3	0.0
April	720	100.0	52.7	12.2	0.0	1.3	15.4	41.9	36.5	4.9	0.0
May	692	93.0	63.2	16.0	0.0	0.0	6.5	33.2	37.7	22.5	0.0
June	720	100.0	62.9	25.7	0.0	0.0	3.6	39.0	35.3	22.1	0.0
July	742	99.7	65.7	24.1	0.0	0.0	3.9	33.6	29.1	31.8	1.6
August	0	0.0	-	0.0	0.0	-	-	-	-	-	-
September	206	28.6	60.6	23.8	76.3	0.0	6.3	41.7	30.1	21.8	0.0
October	744	100.0	63.9	29.2	77.5	0.0	0.4	36.7	49.2	13.7	0.0
November	720	100.0	71.8	32.7	83.6	0.0	0.0	10.0	74.6	15.4	0.0
December	458	61.6	72.3	57.0	82.1	0.0	0.0	0.4	92.8	6.8	0.0
Annual	7186	81.8	64.6	0.0	83.6	0.1	3.2	28.7	53.8	14.0	0.2



Table D-11: Wind Frequency Table 2024

Wind Direction Sector	Percentage of Data within Wind Speed Range (m/s)						
	0.5-1.2	1.2 ~ 2.4	2.4 ~ 3.6	3.6 ~ 4.8	4.8 ~ 6.0	>6.0	Total
North	0.38	1.17	0.89	0.23	0.00	0.00	2.67
North North-East	0.33	0.66	0.05	0.00	0.00	0.00	1.04
East North-East	0.38	0.56	0.19	0.05	0.00	0.00	1.18
East North-East	0.52	0.70	0.09	0.09	0.00	0.00	1.40
East	0.70	0.89	0.38	0.00	0.00	0.00	1.97
East South-East	1.27	3.15	2.49	1.08	0.09	0.00	8.08
South-East	3.01	4.56	4.32	1.60	0.80	0.14	14.43
South South-East	3.20	1.22	0.42	0.38	0.19	0.00	5.41
South	1.32	0.70	0.28	0.28	0.05	0.00	2.63
South South-West	0.61	0.80	0.05	0.09	0.00	0.00	1.55
South-West	1.03	0.66	0.00	0.00	0.00	0.00	1.69
West South-West	1.32	1.32	0.33	0.00	0.00	0.00	2.97
West	1.22	5.12	1.13	0.00	0.00	0.00	7.47
West North-West	2.16	4.32	5.26	2.30	0.56	0.00	14.60
North-West	2.49	3.15	2.35	0.99	0.38	0.00	9.36
North North-West	1.32	3.71	3.05	1.69	0.75	0.00	10.52
Summary	21.26	32.69	21.28	8.78	2.82	0.14	86.97
Percentage Calm	13.02						





Appendix E Meadow Lake Station: Continuous Monitoring Data

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

SLR Project No.: 208.030089.00001

November 27, 2025

Table E-1: Meadow Lake Station - Summary statistics for continuous air monitoring results for 2024

Parameter	Unit	Operational Time	Uptime	Summary Statistics for Hourly Average Data		
		(Hours)	%	Average	Minimum	Maximum
NO	ppb	7796	88.8	0.7	0	47.0
NO2	ppb	7797	88.8	2.7	0	35.1
NOx	ppb	7797	88.8	3.4	0	82.1
O3	ppb	7480	85.2	27.6	0.3	61.3
PM2.5	µg/m ³	7453	84.8	7.3	0	355.5
Precipitation	mm	8743	99.5	0.0	0.0	26.8
Ambient Temperature	°C	8743	99.5	2.1	-37.3	34.5
Relative Humidity	%	8476	96.5	60.5	13.1	88.8
Wind Speed	m/s	8726	99.3	0.5	0.0	4.6



Table E-2: Summary of NO monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 1	1-5	5-10	10-50	50-172	> 172
January	710	95.4	1.7	42.2	9.2	-	-	57.9	36.8	2.8	2.5	0.0	0.0
February	547	78.6	1.1	10.0	3.2	-	-	59.2	38.8	1.8	0.2	0.0	0.0
March	702	94.4	0.9	36.1	4.0	-	-	76.2	22.1	1.3	0.4	0.0	0.0
April	689	95.7	0.8	47.0	4.3	-	-	80.6	17.4	1.6	0.4	0.0	0.0
May	705	94.8	0.2	2.9	0.6	-	-	97.0	3.0	0.0	0.0	0.0	0.0
June	679	94.3	0.2	6.7	0.8	-	-	97.3	2.5	0.1	0.0	0.0	0.0
July	706	94.9	0.2	5.8	0.6	-	-	98.2	1.7	0.1	0.0	0.0	0.0
August	360	48.4	0.4	2.9	1.3	-	-	91.9	8.1	0.0	0.0	0.0	0.0
September	688	95.6	0.3	11.9	2.3	-	-	93.9	5.8	0.1	0.1	0.0	0.0
October	709	95.3	0.5	18.5	1.9	-	-	87.9	10.6	1.3	0.3	0.0	0.0
November	687	95.4	1.1	42.3	9.4	-	-	80.2	15.1	2.6	2.0	0.0	0.0
December	614	82.5	1.1	22.2	2.9	-	-	75.7	19.7	2.6	2.0	0.0	0.0
Annual	7796	88.8	0.7	47.0	9.4	0.0	0.0	83.1	15.0	1.2	0.7	0.0	0.0

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table E-3: Summary of NO2 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	710	95.4	4.8	30.5	11.3	0.0	0.0	65.1	29.7	5.2	0.0	0.0	0.0
February	547	78.6	4.0	22.2	8.2	0.0	0.0	74.2	24.7	1.1	0.0	0.0	0.0
March	702	94.4	3.7	31.8	11.5	0.0	0.0	75.5	22.6	1.9	0.0	0.0	0.0
April	689	95.7	3.2	35.1	13.1	0.0	0.0	85.2	10.4	4.4	0.0	0.0	0.0
May	705	94.8	1.6	13.1	3.6	0.0	0.0	94.2	5.8	0.0	0.0	0.0	0.0
June	679	94.3	1.2	8.5	2.2	0.0	0.0	98.7	1.3	0.0	0.0	0.0	0.0
July	706	94.9	1.0	5.8	1.8	0.0	0.0	99.7	0.3	0.0	0.0	0.0	0.0
August	360	48.4	1.8	7.2	3.1	0.0	0.0	97.5	2.5	0.0	0.0	0.0	0.0
September	688	95.6	1.3	9.1	3.4	0.0	0.0	98.4	1.6	0.0	0.0	0.0	0.0
October	709	95.3	2.2	22.1	5.3	0.0	0.0	90.3	9.3	0.4	0.0	0.0	0.0
November	688	95.6	3.2	22.5	12.9	0.0	0.0	82.4	15.0	2.6	0.0	0.0	0.0
December	614	82.5	4.2	25.4	8.6	0.0	0.0	74.1	22.0	3.9	0.0	0.0	0.0
Annual	7797	88.8	2.7	35.1	13.1	0.0	0.0	86.1	12.2	1.7	0.0	0.0	0.0

¹ 1-hour SAAQS = 159

² 24-hour SAAQS = 106



Table E-4: Summary of NOx monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-15	15-53	53-100	100-159	>159
January	710	95.4	6.6	64.0	20.2	-	-	55.6	36.6	7.2	0.6	0.0	0.0
February	547	78.6	5.1	26.9	9.9	-	-	60.3	37.1	2.6	0.0	0.0	0.0
March	702	94.4	4.6	48.7	13.3	-	-	69.1	27.2	3.7	0.0	0.0	0.0
April	689	95.7	4.0	82.1	17.4	-	-	80.7	13.9	5.2	0.1	0.0	0.0
May	705	94.8	1.8	15.1	4.2	-	-	93.3	6.5	0.1	0.0	0.0	0.0
June	679	94.3	1.4	11.6	2.5	-	-	97.2	2.8	0.0	0.0	0.0	0.0
July	706	94.9	1.3	11.3	2.4	-	-	98.7	1.3	0.0	0.0	0.0	0.0
August	360	48.4	2.2	8.6	3.7	-	-	94.7	5.3	0.0	0.0	0.0	0.0
September	688	95.6	1.6	16.0	5.6	-	-	95.9	3.9	0.1	0.0	0.0	0.0
October	709	95.3	2.7	26.6	6.3	-	-	86.7	11.3	2.0	0.0	0.0	0.0
November	688	95.6	4.3	64.8	22.3	-	-	76.9	17.7	5.2	0.1	0.0	0.0
December	614	82.5	5.2	43.4	10.6	-	-	67.6	25.9	6.5	0.0	0.0	0.0
Annual	7797	88.8	3.4	82.1	22.3	0.0	0.0	81.3	15.8	2.8	0.1	0.0	0.0

¹ No 1-hour SAAQS for this parameter

² No 24-hour SAAQS for this parameter



Table E-5: Summary of O3 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 8-hrs Conc.	1-Hour Exceedance ¹	8-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 10	10-20	20-40	40-65	65-82	>82
January	711	95.6	24.1	42.8	40.8	0.0	0.0	5.8	20.3	73.0	1.0	0.0	0.0
February	547	78.6	26.4	48.8	46.2	0.0	0.0	3.3	30.5	62.2	4.0	0.0	0.0
March	702	94.4	28.2	43.2	41.0	0.0	0.0	5.1	12.5	78.8	3.6	0.0	0.0
April	690	95.8	35.7	52.0	48.3	0.0	0.0	1.7	3.0	67.5	27.7	0.0	0.0
May	705	94.8	35.2	58.3	55.7	0.0	0.0	0.1	6.2	62.7	30.9	0.0	0.0
June	680	94.4	29.0	52.9	50.8	0.0	0.0	2.2	26.0	50.9	20.9	0.0	0.0
July	706	94.9	28.9	56.6	54.5	0.0	0.0	1.7	15.9	70.1	12.3	0.0	0.0
August	545	73.3	25.9	49.1	46.9	0.0	0.0	9.0	23.3	55.0	12.7	0.0	0.0
September	543	75.4	25.3	49.9	47.9	0.0	0.0	6.6	28.0	54.1	11.2	0.0	0.0
October	708	95.2	24.2	61.3	40.4	0.0	0.0	5.2	25.1	67.7	2.0	0.0	0.0
November	497	69.0	21.9	42.6	37.3	0.0	0.0	5.8	35.8	57.5	0.8	0.0	0.0
December	446	59.9	21.4	36.7	35.5	0.0	0.0	9.4	27.6	63.0	0.0	0.0	0.0
Annual	7480	85.2	27.2	61.3	55.7	0.0	0.0	4.4	20.2	64.2	11.2	0.0	0.0

¹ 1-hour SAAQS = 82

² 8-hour SAAQS = 63



Table E-6: Summary of PM2.5 monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average 1-hr Conc.	Maximum 1-hr Conc.	Maximum 24-hrs Conc.	1-Hour Exceedance ¹	24-Hour Exceedance ²	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(ppb)	(ppb)	(ppb)	(no.)	(no.)	≤ 5	5-10	10-15	15-30	30-80	>80
January	742	99.7	5.5	46.7	20.5	-	0.0	66.0	20.1	5.4	7.8	0.7	0.0
February	695	99.9	6.3	36.8	18.5	-	0.0	57.8	20.9	12.2	8.6	0.4	0.0
March	740	99.5	3.1	48.3	14.9	-	0.0	85.1	8.5	3.4	2.2	0.8	0.0
April	720	100.0	3.4	32.8	13.6	-	0.0	81.7	11.5	4.6	2.1	0.1	0.0
May	738	99.2	3.2	164.4	15.0	-	0.0	80.8	15.0	2.7	1.1	0.3	0.1
June	717	99.6	3.5	66.0	21.6	-	0.0	81.2	11.6	4.6	1.3	1.4	0.0
July	737	99.1	3.7	42.8	13.7	-	0.0	84.5	10.0	2.2	2.0	1.2	0.0
August	692	93.0	21.0	355.5	38.0	-	3.0	20.7	24.7	16.2	20.4	14.7	3.3
September	719	99.9	16.5	117.5	31.2	-	2.0	9.0	26.7	23.8	28.1	11.8	0.6
October	687	92.3	5.1	84.9	16.6	-	0.0	67.2	25.9	2.6	2.8	1.3	0.1
November	0	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	-
December	266	35.8	15.4	48.1	33.6	-	1.0	1.1	38.0	22.2	27.4	11.3	0.0
Annual	7453	84.8	7.9	355.5	38.0	0.0	6.0	61.5	18.1	8.2	8.3	3.5	0.4

¹ No 1-hour SAAQS for this parameter

² 24-hour SAAQS = 28



Table E-7: Summary of Precipitation monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Total Precipitation	Maximum 1-hr Precip.	Maximum 24-hrs Precip.	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(mm)	(mm)	(mm)	≤ 5	5-10	10-15	15-30	30-80	>80
January	743	99.9	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
February	696	100.0	1.2	0.7	0.7	100.0	0.0	0.0	0.0	0.0	0.0
March	740	99.5	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
April	720	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
May	738	99.2	33.7	10.6	19.0	99.6	0.3	0.1	0.0	0.0	0.0
June	717	99.6	51.7	4.2	17.1	100.0	0.0	0.0	0.0	0.0	0.0
July	737	99.1	76.9	26.8	27.0	99.9	0.0	0.0	0.1	0.0	0.0
August	732	98.4	32.8	9.4	5.7	99.6	0.4	0.0	0.0	0.0	0.0
September	719	99.9	18.2	4.1	0.5	100.0	0.0	0.0	0.0	0.0	0.0
October	741	99.6	2.1	0.3	0.0	100.0	0.0	0.0	0.0	0.0	0.0
November	719	99.9	0.3	0.1	0.0	100.0	0.0	0.0	0.0	0.0	0.0
December	741	99.6	0.8	0.2	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Annual	8743	99.5	217.6	26.8	27.0	99.9	0.1	0.0	0.0	0.0	0.0



Table E-8: Summary of Ambient Temperature monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Temperature	Minimum 1-hr Temp	Maximum 1-hr Temp	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(°C)	(°C)	(°C)	≤ -30	-30 ~ -15	-15 ~ 0	0 ~ 15	15 ~ 30	>30
January	743	99.9	-14.3	-37.3	4.5	11.4	33.4	45.8	9.4	0.0	0.0
February	696	100.0	-7.4	-31.8	2.4	0.7	14.2	70.5	14.5	0.0	0.0
March	740	99.5	-7.6	-27.5	4.1	0.0	14.5	73.1	12.4	0.0	0.0
April	720	100.0	-5.9	-28.0	5.6	0.0	16.4	58.3	25.3	0.0	0.0
May	738	99.2	5.9	-6.8	12.6	0.0	0.0	12.9	82.0	5.1	0.0
June	717	99.6	11.3	1.2	18.9	0.0	0.0	0.0	76.4	23.6	0.0
July	737	99.1	14.2	2.9	19.4	0.0	0.0	0.0	60.0	40.0	0.0
August	732	98.4	21.2	9.4	22.2	0.0	0.0	0.0	13.1	80.6	6.3
September	719	99.9	18.0	5.3	22.9	0.0	0.0	0.0	29.5	70.5	0.0
October	741	99.6	5.5	-3.6	12.2	0.0	0.0	12.4	84.2	3.4	0.0
November	719	99.9	-5.4	-27.8	7.9	0.0	17.2	48.7	33.9	0.1	0.0
December	741	99.6	-10.6	-29.6	1.9	0.0	27.4	64.4	8.2	0.0	0.0
Annual	8743	99.5	2.1	-37.3	22.9	1.0	10.3	32.1	37.5	18.6	0.5



Table E-9: Summary of Relative Humidity monitoring results for 2024

Month	Valid 1-hr Data	Operational Time	Average Relative Humidity	Minimum 1-hr RH	Maximum 1-hr RH	Percent of Data within Concentration Range (%)					
	(no.)	(%)	(%)	(%)	(%)	≤ 15	15 - 30	30 - 60	60 - 80	80 - 90	>90
January	710	95.4	63.9	37.7	73.9	0.0	0.0	26.6	73.4	0.0	0.0
February	668	96.0	59.9	32.1	86.3	0.0	0.0	47.9	51.5	0.6	0.0
March	712	95.7	52.0	21.6	75.6	0.0	4.4	67.0	28.7	0.0	0.0
April	692	96.1	51.3	13.1	71.1	1.2	17.5	43.8	31.6	5.9	0.0
May	723	97.2	60.2	15.9	75.9	0.0	8.7	37.6	36.7	17.0	0.0
June	672	93.3	61.0	24.2	82.1	0.0	3.7	42.0	39.9	14.4	0.0
July	684	91.9	61.5	24.2	84.7	0.0	2.3	42.4	38.9	16.4	0.0
August	699	94.0	59.6	14.8	70.3	0.1	4.3	42.3	40.5	12.7	0.0
September	715	99.3	61.9	15.3	86.1	0.0	4.5	41.0	31.9	22.7	0.0
October	741	99.6	60.9	24.9	74.3	0.0	1.1	42.9	48.2	7.8	0.0
November	719	99.9	66.7	31.3	77.9	0.0	0.0	14.9	83.0	2.1	0.0
December	741	99.6	66.4	47.7	76.1	0.0	0.0	11.9	87.6	0.5	0.0
Annual	8476	96.5	60.4	13.1	86.3	0.1	3.8	38.2	49.6	8.3	0.0



Table E-10: Wind Frequency Table 2024

Month	Percentage of Data within Wind Speed Range (m/s)						
	0.5-1.2	1.2 ~ 2.4	2.4 ~ 3.6	3.6 ~ 4.8	4.8 ~ 6.0	>6.0	Total
North	2.16	2.03	0.53	0.08	0.00	0.00	4.80
North North-East	4.33	1.64	0.12	0.00	0.00	0.00	6.09
East North-East	1.11	0.00	0.00	0.00	0.00	0.00	1.11
East North-East	0.71	0.02	0.00	0.00	0.00	0.00	0.73
East	0.94	0.02	0.00	0.00	0.00	0.00	0.96
East South-East	3.14	2.21	0.70	0.04	0.00	0.00	6.09
South-East	2.04	2.82	1.39	0.53	0.00	0.00	6.78
South South-East	1.06	1.10	0.47	0.01	0.00	0.00	2.64
South	0.71	0.73	0.11	0.00	0.00	0.00	1.55
South South-West	0.97	1.14	0.21	0.00	0.00	0.00	2.32
South-West	3.43	5.00	0.48	0.02	0.00	0.00	8.93
West South-West	3.98	3.89	0.27	0.01	0.00	0.00	8.15
West	2.18	2.49	0.46	0.02	0.00	0.00	5.15
West North-West	2.22	3.69	1.33	0.19	0.00	0.00	7.43
North-West	2.36	2.60	0.68	0.06	0.00	0.00	5.70
North North-West	2.05	1.90	0.59	0.21	0.00	0.00	4.75
Summary	33.39	31.28	7.34	1.17	0.00	0.00	73.18
Percentage Calm	26.8						





Appendix F WYAMZ Exceedance Summary

2024 Annual Report

Western Yellowhead Air Management Zone

Western Yellowhead Air Management Zone

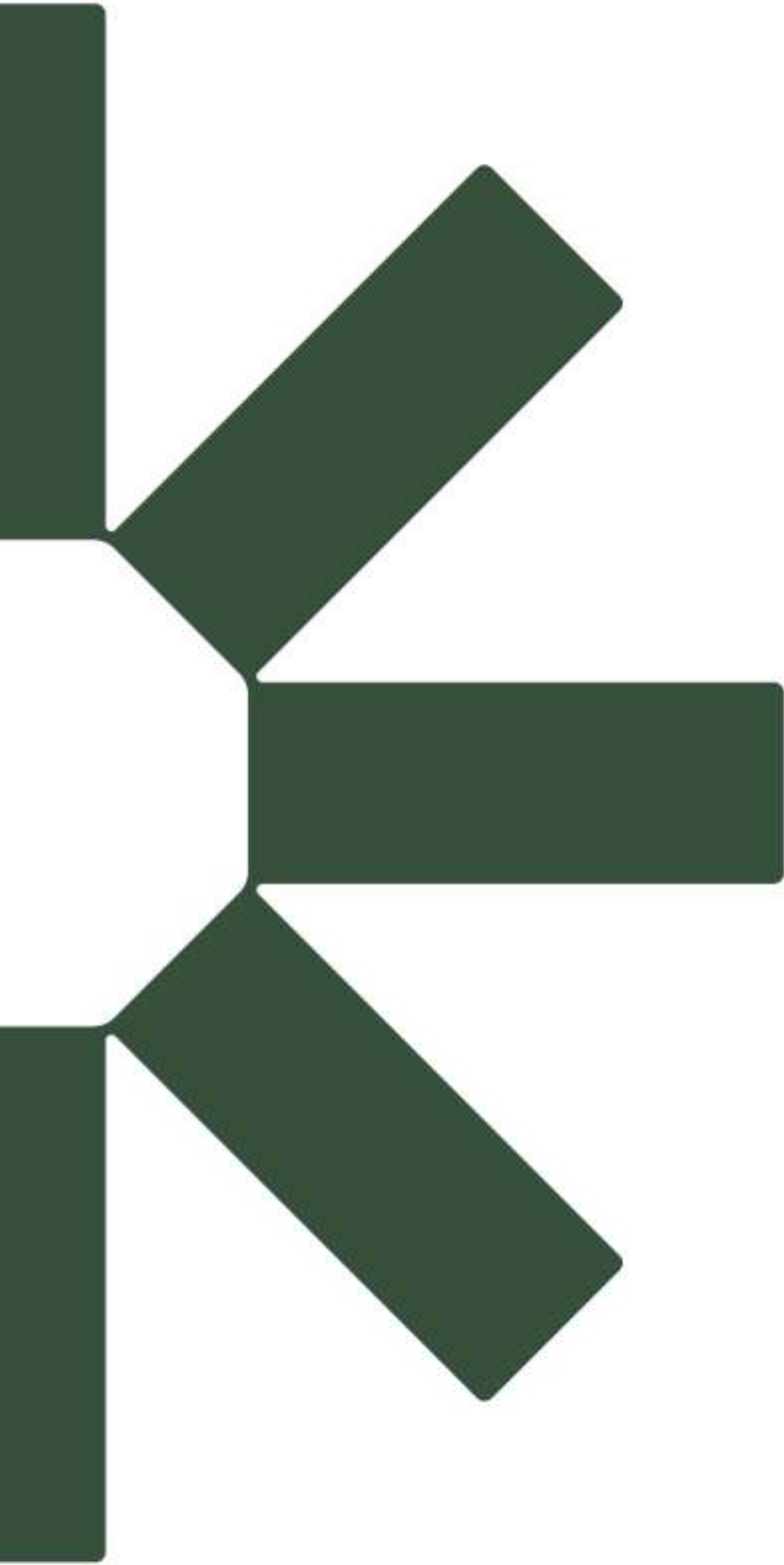
SLR Project No.: 208.030089.00001

November 27, 2025

24-Hour Exceedance Summary

Station	Pollutant	Date and Time	Concentration	Wind Speed	Wind Direction	Precipitation	NO	NO ₂	NOx	O ₃	H2S	PM _{2.5}	SO ₂
Clavet	PM2.5	5/11/2024 24:00	43.4	0.9	287.1	0.0	0.5	3.3	3.8	35.6	-	43.4	-
Clavet	PM2.5	7/8/2024 24:00	42.2	0.3	178.9	0.0	<Samp	<Samp	<Samp	25.8	-	42.2	-
Clavet	PM2.5	7/9/2024 24:00	28.7	0.3	121.0	0.4	<Samp	<Samp	<Samp	25.0	-	28.7	-
Clavet	PM2.5	7/21/2024 24:00	104.1	0.2	155.7	0.0	<Samp	<Samp	<Samp	13.7	-	104.1	-
Clavet	PM2.5	7/23/2024 24:00	54.3	0.5	113.0	0.0	<Samp	<Samp	<Samp	15.4	-	54.3	-
Clavet	PM2.5	7/24/2024 24:00	38.8	0.4	171.7	0.0	<Samp	<Samp	<Samp	27.6	-	38.8	-
Clavet	PM2.5	8/9/2024 24:00	36.2	0.3	157.6	0.0	<Samp	<Samp	<Samp	21.4	-	36.2	-
Clavet	PM2.5	8/15/2024 24:00	68.6	0.6	129.8	0.0	<Samp	<Samp	<Samp	23.1	-	68.6	-
Clavet	PM2.5	8/17/2024 24:00	30.4	0.5	95.7	25.6	<Samp	<Samp	<Samp	22.7	-	30.4	-
Clavet	PM2.5	8/22/2024 24:00	29.8	0.5	174.0	0.0	<Samp	<Samp	<Samp	21.8	-	29.8	-
Clavet	PM2.5	8/23/2024 24:00	44.5	0.4	107.2	18.5	<Samp	<Samp	<Samp	20.3	-	44.5	-
Clavet	PM2.5	9/3/2024 24:00	29.3	1.6	40.1	0.0	NoData	NoData	NoData	<Samp	-	29.3	-
Kerrobot	PM2.5	5/11/2024 24:00	35.5	0.8	299.5	0.0	-	-	-	-	0.2	35.5	0.1
Kerrobot	PM2.5	7/7/2024 24:00	42.0	0.3	255.2	0.0	-	-	-	-	0.4	42.0	0.0
Kerrobot	PM2.5	7/8/2024 24:00	28.6	0.5	208.5	0.0	-	-	-	-	0.4	28.6	0.0
Kerrobot	PM2.5	7/21/2024 24:00	100.1	0.2	143.0	0.0	-	-	-	-	0.7	100.1	0.1
Kerrobot	PM2.5	7/22/2024 24:00	122.6	0.7	111.3	0.0	-	-	-	-	0.6	122.6	0.1
Kerrobot	PM2.5	7/23/2024 24:00	47.3	1.3	108.2	0.0	-	-	-	-	0.6	47.3	0.0
Kerrobot	PM2.5	7/24/2024 24:00	32.0	0.6	126.1	0.0	-	-	-	-	0.5	32.0	0.0
Kerrobot	PM2.5	8/7/2024 24:00	40.2	0.4	130.4	0.0	-	-	-	-	0.5	40.2	0.1
Kerrobot	PM2.5	8/14/2024 24:00	65.0	0.6	308.1	0.0	-	-	-	-	0.4	65.0	0.2
Kerrobot	PM2.5	8/15/2024 24:00	107.7	0.5	179.0	0.0	-	-	-	-	0.7	107.7	0.2
Maidstone	PM2.5	7/19/2024 24:00	28.5	0.3	253.5	0.0	<Samp	<Samp	<Samp	-	<Samp	28.5	<Samp
Maidstone	PM2.5	7/20/2024 24:00	71.3	0.3	293.4	0.0	<Samp	<Samp	<Samp	-	<Samp	71.3	<Samp
Meadow Lake	PM2.5	8/10/2024 24:00	37.8	0.4	155.2	0.0	0.4	1.6	2.0	<Samp	-	37.8	-
Meadow Lake	PM2.5	8/15/2024 24:00	38.0	0.6	259.7	0.0	0.3	1.9	2.2	24.0	-	38.0	-
Meadow Lake	PM2.5	8/22/2024 24:00	33.4	1.0	275.7	0.0	0.2	0.8	1.0	18.0	-	33.4	-
Meadow Lake	PM2.5	9/8/2024 24:00	31.2	0.4	119.8	0.0	0.4	2.0	2.3	<Samp	-	31.2	-
Meadow Lake	PM2.5	9/12/2024 24:00	28.9	0.6	38.0	0.1	0.4	1.4	1.8	<Samp	-	28.9	-
Meadow Lake	PM2.5	12/22/2024 24:00	33.6	0.4	80.6	0.0	0.6	4.4	5.1	15.6	-	33.6	-





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