LAFARGE CANADA INC.

AMBIENT AIR QUALITY MONTHLY REPORT

DECEMBER 2024

JANUARY 24, 2025

AMBIENT AIR QUALITY MONTHLY REPORT

DECEMBER 2024

LAFARGE CANADA INC.

PROJECT NO.: 171-00556-05
DATE: JANUARY 24, 2025

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January 24, 2025

LAFARGE CANADA INC.
Highway 1A
Exshaw, AB T0L 2C0

Attention: Nikolaos Veriotes P. Eng.

Dear Mr. Veriotes,

Subject: Ambient Air Quality Monthly Report – December 2024

The following table summarizes the data completeness and reported exceedances of Alberta Ambient Air Quality Objectives (AAAQOs) or Guidelines (AAAQG) at the Lagoon Station for December 2024.

Lagoon	Data Completeness (%)	1-Hour Average	24-hour Average
		Exceedances of AAAQO or AAAQG	Exceedances of AAAQO
TSP	100.0%	-	0
$PM_{2.5}$	100.0%	0	0
PM_{10}	100.0%	-	-
NO	100.0%	-	-
NO_2	100.0%	0	-
NO_x	100.0%	-	-
SO_2	100.0%	0	0
Temperature	100.0%	-	-
Wind Speed / Direction	100.0%	-	-
Pressure	100.0%	-	-
Relative Humidity	100.0%	-	-
Precipitation	100.0%	-	-

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The following table summarizes the data completeness and reported exceedances of Alberta Ambient Air Quality Objectives (AAAQOs) or Guidelines (AAAQG) at the Windridge Station for December 2024.

Windridge	Data Completeness (%)	1-Hour Average	24-hour Average	
		Exceedances of AAAQG	Exceedances of $PM_{2.5}$ AAAQO	Exceedances of TSP AAAQO
TSP	100%	-	-	1
$PM_{2.5}$	100%	0	0	-
PM_{10}	100%	-	-	-

The GRIMM monitors are considered Industrial Ambient Monitors and are meant for assessing the performance of Lafarge Exshaw's Fugitive Dust Control Best Management Practices – Program; the GRIMM monitors are not Air Monitoring Directive (AMD) compliant. This Program uses the AAAQOs as Guidelines. The following table summarizes the data completeness and exceedances of the Guidelines at the GRIMM Monitors for December 2024.

GRIMM Stations	Data Completeness (%)	1-Hour Average	24-hour Average	
		Exceedances of $PM_{2.5}$ Guidelines	Exceedances of $PM_{2.5}$ Guidelines	Exceedances of TSP Guidelines
West	0%	0	0	0
Berm	100%	2	1	10
Entrance	0%	0	0	0

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization, and reporting requirements.

Sincerely,

Tyler Abel, M.Sc.
Senior Air Quality Specialist,
Vancouver Region

SIGNATURES

PREPARED BY

Jan 24, 2025

Yuhao Hua, M.A.Sc., M.Sc.
Air Quality Specialist
Vancouver Region, Environment

Date

APPROVED[1] BY *(must be reviewed for technical accuracy prior to approval)*

Jan 24, 2025

Tyler Abel, M.Sc.
Senior Air Quality Specialist
Vancouver Region, Environment

Date

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1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon, Windridge, and GRIMM monitors in Exshaw, AB (Figure 1-1). The stations are operated by WSP on behalf of Lafarge Canada Inc. (Lafarge) and are a requirement of Lafarge's Approval 1702-02-04. This report contains data collected between December 1, 2024 and December 31, 2024.

This monthly report was prepared by Yuhao Hua, Air Quality Specialist with WSP, on behalf of Lafarge and was reviewed by Tyler Abel, Senior Air Quality Specialist at WSP.

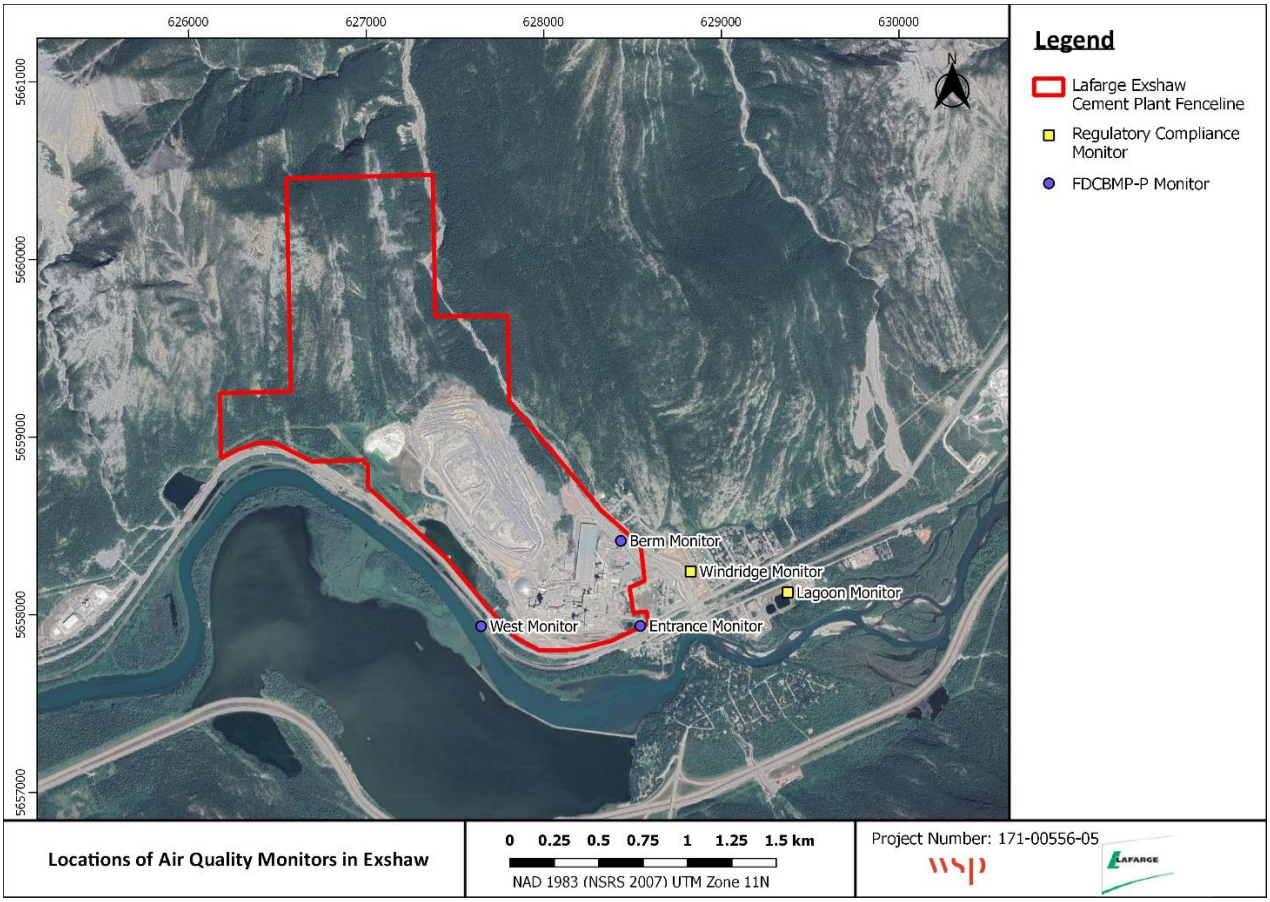


Figure 1-1 Locations of Air Quality Monitors in Exshaw

1.1 EXSHAW CREEK FLOOD MITIGATION

Due to flood mitigation construction at Exshaw creek (Figure 1-2), the Windridge monitoring station was taken out of operation and removed from the site on April 8, 2019. The flood mitigation work was completed in Summer 2020. The Windridge station was reinstalled on September 1, 2020. The flood mitigation work has left an exposed creek bed area (see Figure below) that is a potential source of fugitive dust between Lafarge's eastern fenceline and the Windridge station.

Figure 1-2 Photo of Completed Flood Mitigation Work at Exshaw Creek

2 DECEMBER 2024 REPORT SUMMARY

This summary section provides the pertinent details on data collected and maintenance/calibration activities at each of the monitoring locations. The monitoring results for each station are described in further detail in their corresponding sections. Maximum hourly concentrations are shown for all particulate matter size fractions, but there are no Alberta Ambient Air Quality Objectives (AAAQO) for 1-hour PM concentrations. The exceedances reported for 1-hour $PM_{2.5,}$ if any, are those above the 1-hour $PM_{2.5}$ Alberta Ambient Air Quality Guidelines (AAAQG).

2.1 LAGOON STATION

Table 2-1 Lagoon station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of AAAQO or AAAQG	Maximum Concentration	Exceedances of AAAQO
NO_2 (ppb)	100.0	23.7	0	15.3	-
SO_2 (ppb)	100.0	2.5	0	0.9	0
$PM_{2.5}$ (µg/m^3)	100.0	27.1	0[1]	18.0	0
PM_{10} (µg/m^3)	100.0	196.8	-	51.5	-
TSP (µg/m^3)	100.0	257.2	-	73.4	0
Temperature (°C)	100.0	10.4	-	5.8	-
Wind Speed (km/hr) /Direction (Degrees)	100.0	46.4/W	-	32.9/WSW	-
Precipitation (mm)	100.0	0.5[2]	-	1.5[3]	-

[1] Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m^3.

[2] Maximum Daily Total Accumulation of Precipitation (mm) – freezing temperatures can impact the precipitation totals in winter months

[3] Monthly Total Accumulation of Precipitation (mm) - freezing temperatures can impact the precipitation totals in winter months

Data Quality Notes:

- There were no exceedances of the 24-hour $PM_{2.5}$ AAAQO.
- There were no exceedances of the 1-hour $PM_{2.5}$ AAAQG.
- There were no exceedances of the 24-hour TSP AAAQO.

Calibration/Maintenance Notes:

- At the Lagoon station, NO_2 and SO_2 analyzers recorded 100% uptime for the month of December.
- The TSP, PM_{10} and $PM_{2.5}$ analyzer recorded 100% uptime for the month of December.
- The meteorological sensors recorded 100% uptime for the month of December.

2.2 WINDRIDGE STATION

Table 2-2 Windridge station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of AAAQG	Maximum Concentration	Exceedances of AAAQO
$PM_{2.5}$ (µg/m^3)	100.0	30.0	0*	14.0	0
PM_{10} (µg/m^3)	100.0	485.0	-	108.3	-
TSP (µg/m^3)	100.0	985.0	-	192.3	1

* Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m^3.

Data Quality Notes:

- There were no exceedances of the 24-hour $PM_{2.5}$ AAAQO.
- There were no exceedances of the 1-hour $PM_{2.5}$ AAAQG.
- There was 1 day exceeding the 24-hour TSP AAAQO.

Calibration/Maintenance Notes:

- At the Windridge station, the TSP, PM_{10} and $PM_{2.5}$ analyzers recorded 100% uptime for the month of December.

2.3 WEST GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their Fugitive Dust Control Best Management Practices – Program (FDCBMP-P). The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Calibration/Maintenance Notes:

- The analyzer had 0% uptime for the month of December due to an instrument error currently being resolved.

2.4 BERM GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Table 2-3 Berm station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ ($\mu g/m^3$)	100.0	145.4	2*	32.3	1
PM_{10} ($\mu g/m^3$)	100.0	1006.0	-	187.0	-
TSP ($\mu g/m^3$)	100.0	3226.5	-	656.6	10

* Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 $\mu g/m^3$.

Data Quality Notes:

- There was 1 day exceeding of the 24-hour $PM_{2.5}$ Guidelines.
- There were 2 hours exceeding of the 1-hour $PM_{2.5}$ Guidelines.
- There were 10 days exceeding of the 24-hour TSP Guidelines.

Calibration/Maintenance Notes:

- The analyzer had 100% uptime for the month of December.

2.5 ENTRANCE GRIMM

The GRIMM monitors are Industrial Ambient Monitors meant to aid Lafarge in assessing the performance of their FDCBMP-P. The AAAQO are used as Guidelines to evaluate the performance of the FDCBMP-P; however, these Industrial monitors are not Alberta Air Monitoring Directive (AMD) compliant and not required to show compliance with the AAAQO.

Calibration/Maintenance Notes:

The analyzer had 0% uptime for the month of December due to an instrument error currently being resolved.

3 LAGOON STATION

The Lagoon trailer contains NO_x, SO_2, TSP, PM_{10}, and $PM_{2.5}$ analyzers as well as meteorological sensors, and is shown in Figure 3-1. An ambient air quality station has been at this location since 2002, providing a long-term data record for air quality in the Exshaw area.

This section provides a summary of the monitoring activities for the Lagoon ambient air quality station, including: a table of instrumentation (Table 3-1), a data summary table (Table 3-2), a table of recorded exceedances (**Error! Reference source not found.**), site visit notes and tables and graphs illustrating the monitoring results for December 2024.

All of the monitors comply with Alberta Environment and Parks Air Monitoring Directive (2016).

3.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 3-1.

Table 3-1 Instrumentation List at the Lagoon Station

Parameter Measured	Equipment Description	Notes
$PM_{2.5}$ Concentrations	MetOne BAM-1020 FRM Continuous Particulate Monitor	The $PM_{2.5}$ monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.
PM_{10} Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The PM_{10} monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.
TSP Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The TSP monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.
Oxides of Nitrogen	TEI 42C	The NO_x monitor was calibrated on December 17th. The monitor had 100% uptime for the month of December.
Sulphur Dioxide	Teledyne API 102A	The SO_2 monitor was calibrated on December 17th. The monitor had 100% uptime for the month of December.
Precipitation	MetOne 130 Rain/Snow Gauge	The monitor had 100% uptime for the month of December.
Wind Speed	MetOne Wind Sensor	The monitor had 100% uptime for the month of December.
Wind Direction		

Ambient Temperature	MetOne Ambient Temperature Sensor	The monitor had 100% uptime for the month of December.

Figure 3-1 Inlets on the top of WSP's Lagoon monitor

3.2 MONITORING RESULTS AND TRENDS

Table 3-2 summarizes the hourly and daily concentrations recorded in December 2024. Figure 3-2 graphically illustrates the time series for hourly concentrations as well as wind speed and direction, while Figure 3-8 shows daily average concentrations recorded during December 2024 for the pollutants listed in Table 3-2. Additionally, Figure 3-3 to Figure 3-7 show the histograms of the hourly concentrations of NO_2, SO_2, $PM_{2.5}$, PM_{10}, and TSP measured at the Lagoon station.

There were no exceedances of the 24-hour TSP AAAQO (100 µg/m^3). There were no exceedances the 24-hour $PM_{2.5}$ AAAQO (29 µg/m^3). Further, there were no exceedances of the 1-hour $PM_{2.5}$ AAAQG (80 µg/m^3) at the station this month.

Historically in December, the average number of 24-hour TSP AAAQO exceedances and 24-hour $PM_{2.5}$ AAAQO exceedances were both 0. The maximum number of 24-hour TSP AAAQO exceedances recorded in December were 3 days in 2023. The 24-hour $PM_{2.5}$ AAAQO has not been exceeded in the data record from 2010 to 2023.

At the Lagoon station strong wind gusting that typically occurs in the area contributes to increased particulate levels that December arise from multiple sources including the Lafarge Plant, Exshaw Creek, dry sections of the Bow River, highway and rail traffic moving past the station and fugitive emissions from open areas.

Table 3-2 Summary of December 2024 data at Lagoon

Parameter	Guideline / Objectives		Station	Exceedances		Monthly		1-hour					24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration/ Meteorological Variable	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration/ Meteorological Variable	Day	
NO_2 (ppb)	159	-	Lagoon	0	-	0.8	6.2	23.7	20	3	5.5	62.8	15.3	17	100.0
SO_2 (ppb)	172	48	Lagoon	0	0	0.0	0.3	2.5	19	4	5.4	68.2	0.9	29	100.0
$PM_{2.5}$ ($\mu g/m^3$)	80	29	Lagoon	0	0	0.0	3.1	27.1	17	2	14.3	71.9	18.0	17	100.0
PM_{10} ($\mu g/m^3$)	-	-	Lagoon	-	-	0.0	18.4	196.8	20	7	29.3	238.7	51.5	18	100.0
TSP ($\mu g/m^3$)	-	100	Lagoon	-	0	1.2	28.9	257.2	20	7	29.3	238.7	73.4	18	100.0
Temperature (°C)	-	-	Lagoon	-	-	-17.8	-0.5	10.4	6	23	35.8	243.3	5.8	6	100.0
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	0.5	18.3	46.4/W	20	6	46.4	234.5	32.9/WSW	25	100.0
Precipitation (mm)	-	-	Lagoon	-	-	0.0	0.0	0.5[1]	22	3	17.9	253.3	1.5[2]	-	100.0

[1] Maximum Daily Total Accumulation of Precipitation (mm) - freezing temperatures can impact the precipitation totals in winter months
[2] Monthly Total Accumulation of Precipitation (mm) - freezing temperatures can impact the precipitation totals in winter months

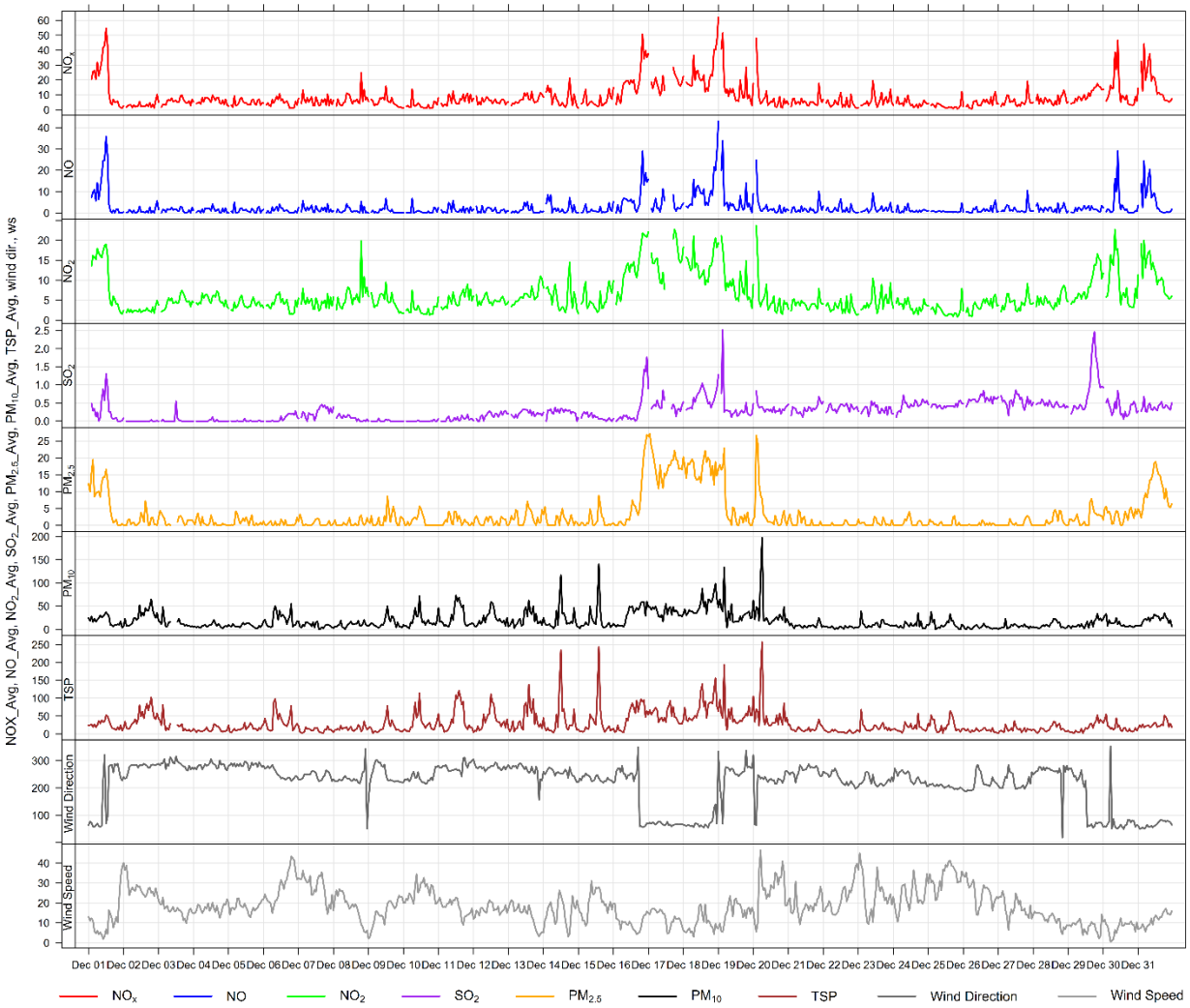


Figure 3-2 **1-hour concentrations of NO_x, SO_2, particulate matter, wind direction and wind speed at the Lagoon station**

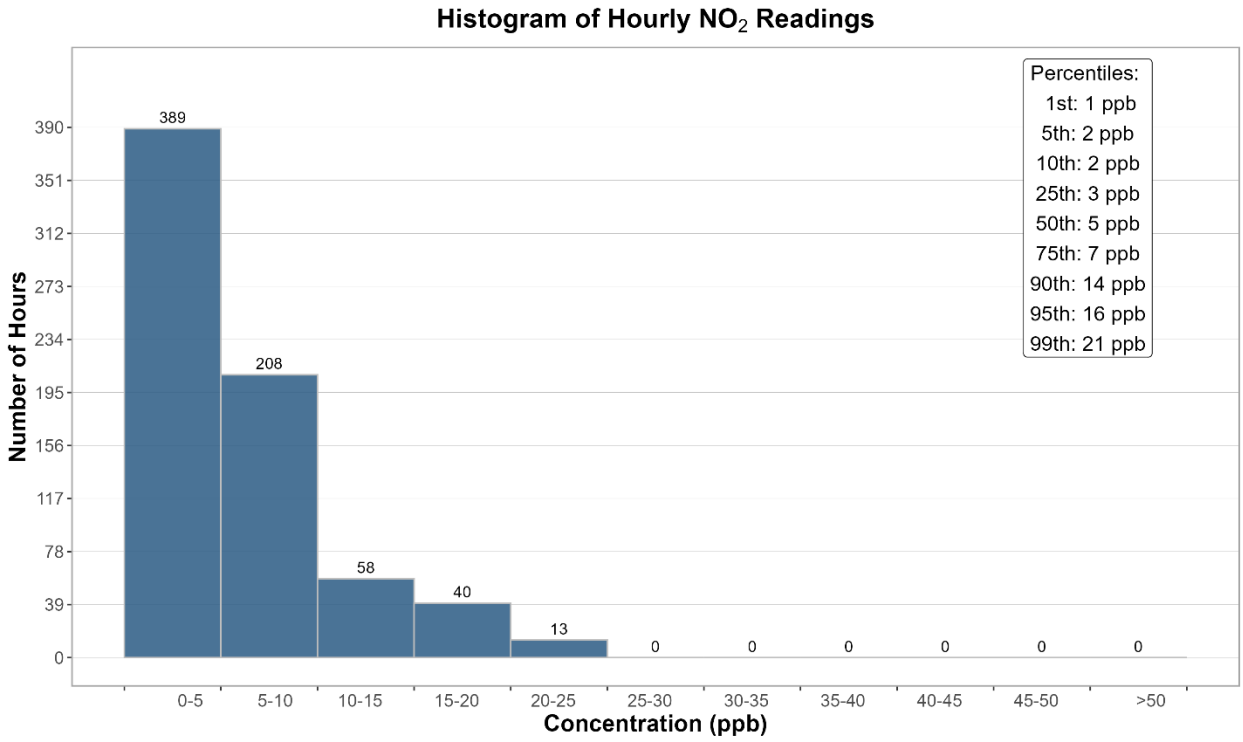


Figure 3-3 Histogram of hourly NO_2 concentrations at the Lagoon station

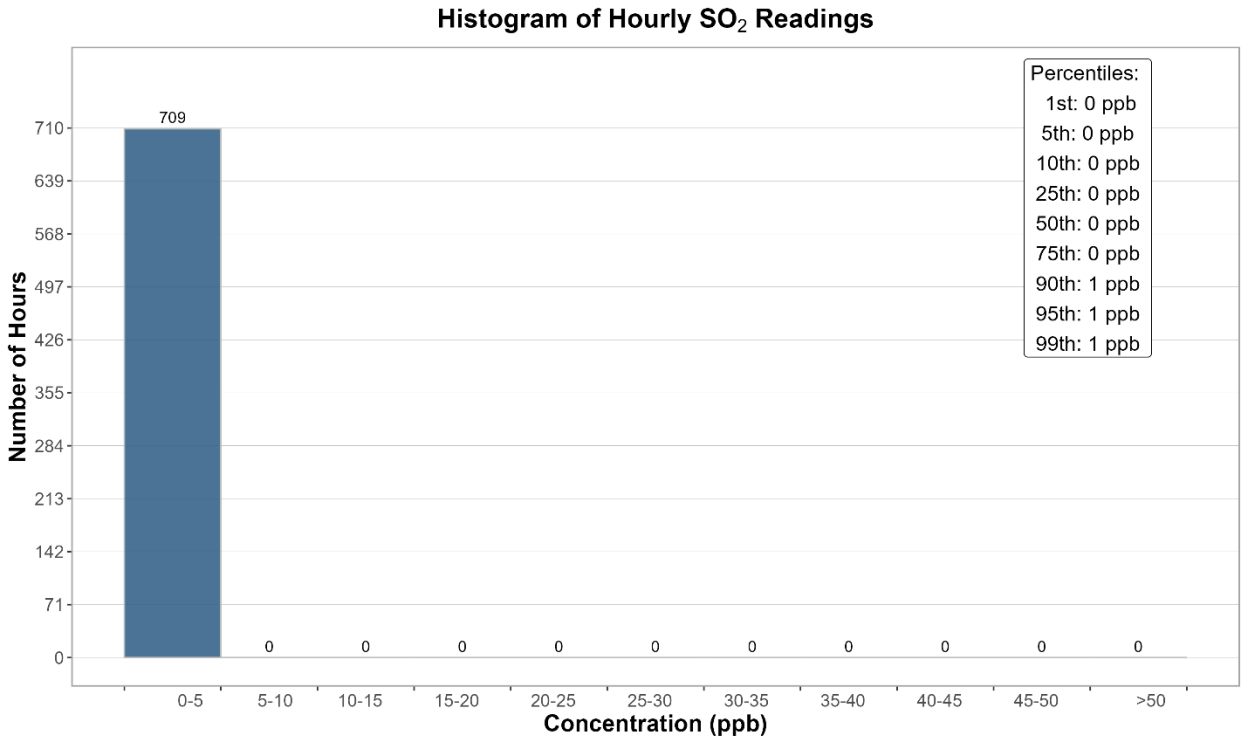


Figure 3-4 Histogram of hourly SO_2 concentrations at the Lagoon station

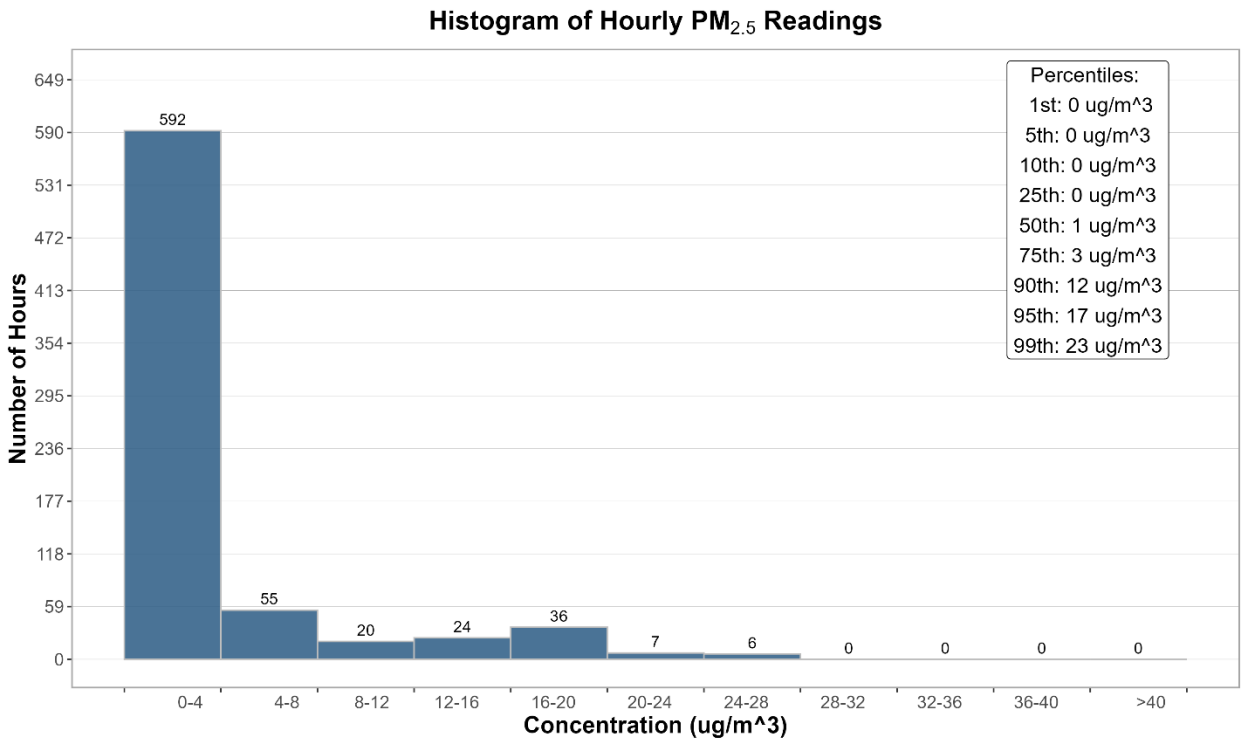


Figure 3-5 **Histogram of hourly $PM_{2.5}$ concentrations at the Lagoon station**

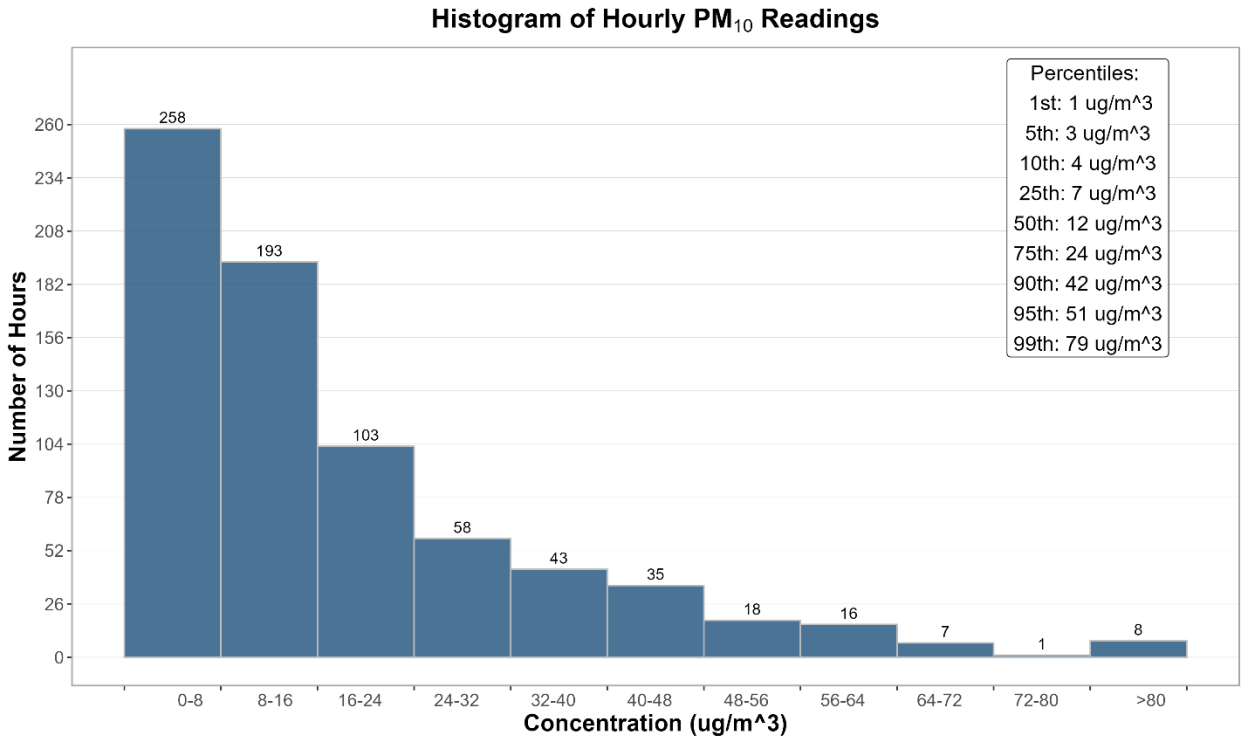


Figure 3-6 **Histogram of hourly PM_{10} concentrations at the Lagoon station**

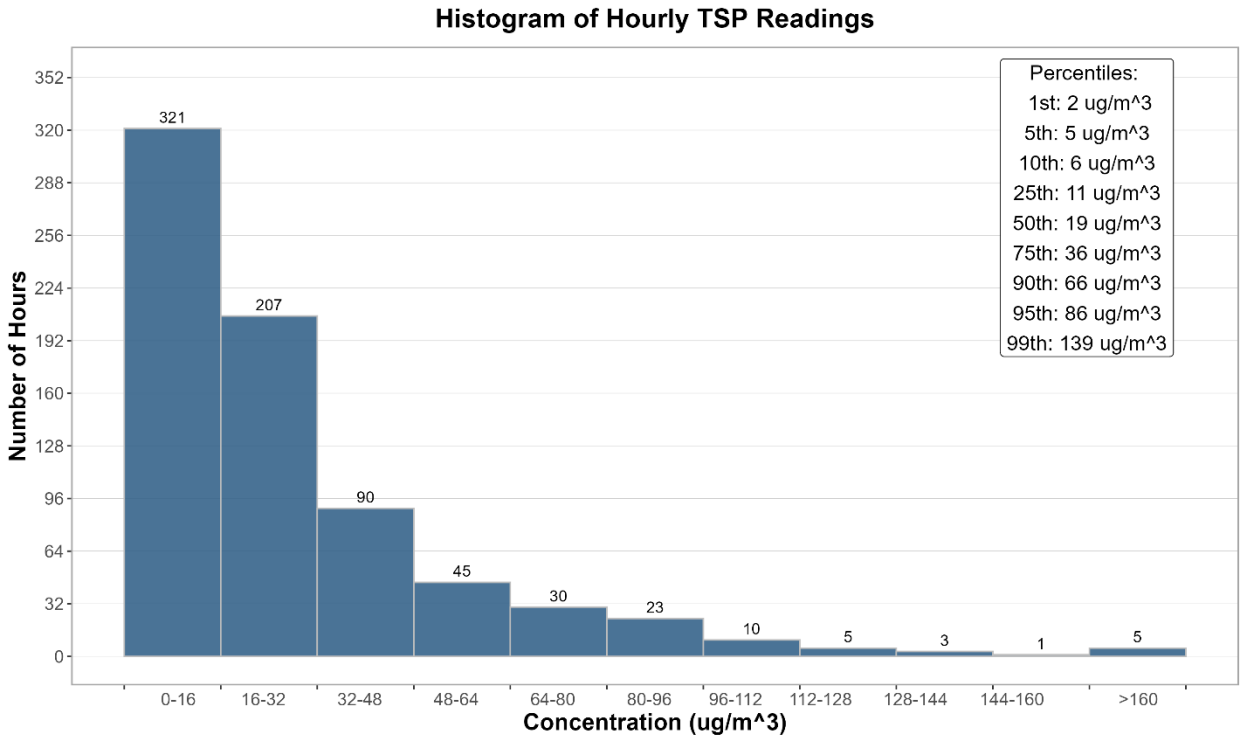


Figure 3-7 Histogram of hourly TSP concentrations at the Lagoon station

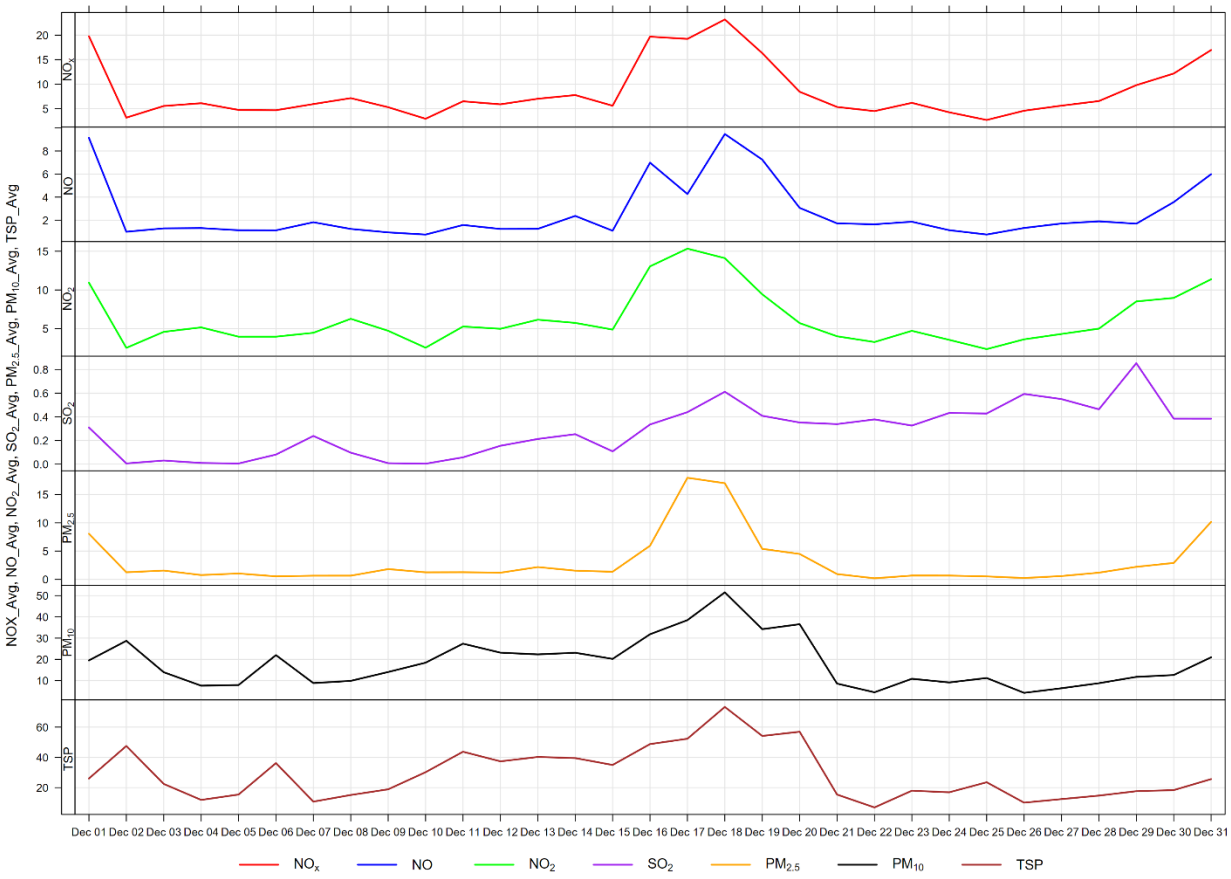


Figure 3-8 24-hour concentrations of NO_x, SO_2, and particulate matter at the Lagoon monitor

Figure 3-9 through Figure 3-11 show the variation in concentrations over various time averaging periods for PM, SO_2 and NO_x. The particulate matter plot in Figure 3-9 typically shows that PM_{10} and TSP concentrations have a diurnal pattern associated with Lafarge operations, daytime emissions from traffic and other airshed activities. The diurnal patterns also typically follow the diurnal pattern of higher wind speeds during the daytime hours.

Figure 3-10 shows the variation of SO_2 over various time periods. SO_2 concentrations patterns are dependent on the timing of the highest SO_2 concentrations recorded in the month because in general SO_2 concentrations are very low. Figure 3-11 shows the variation of NO_x, NO and NO_2, with the peak of all three pollutants occurring in the early morning. This December be indicative of a peak in traffic.

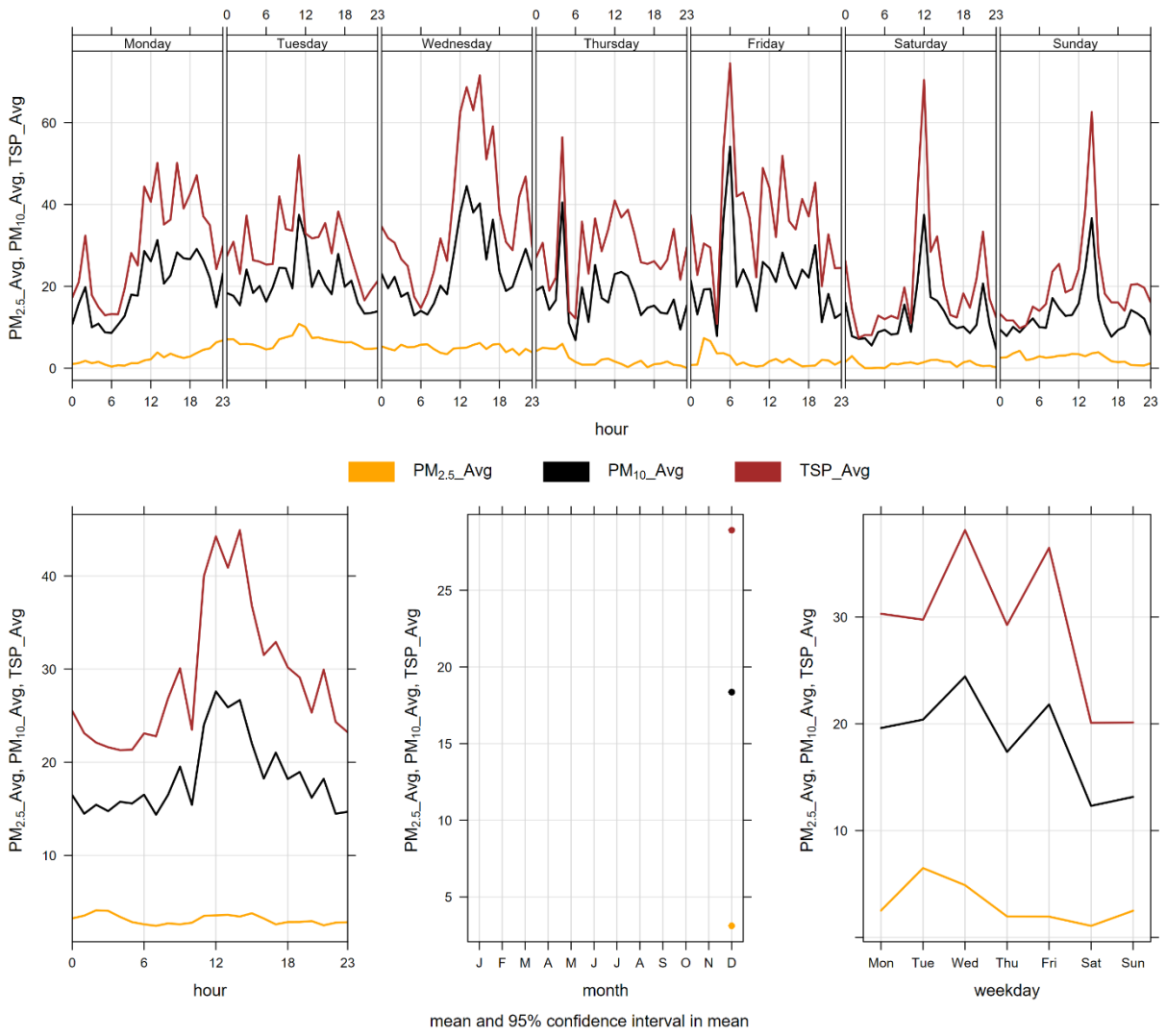


Figure 3-9 Lagoon monitor particulate matter time variation

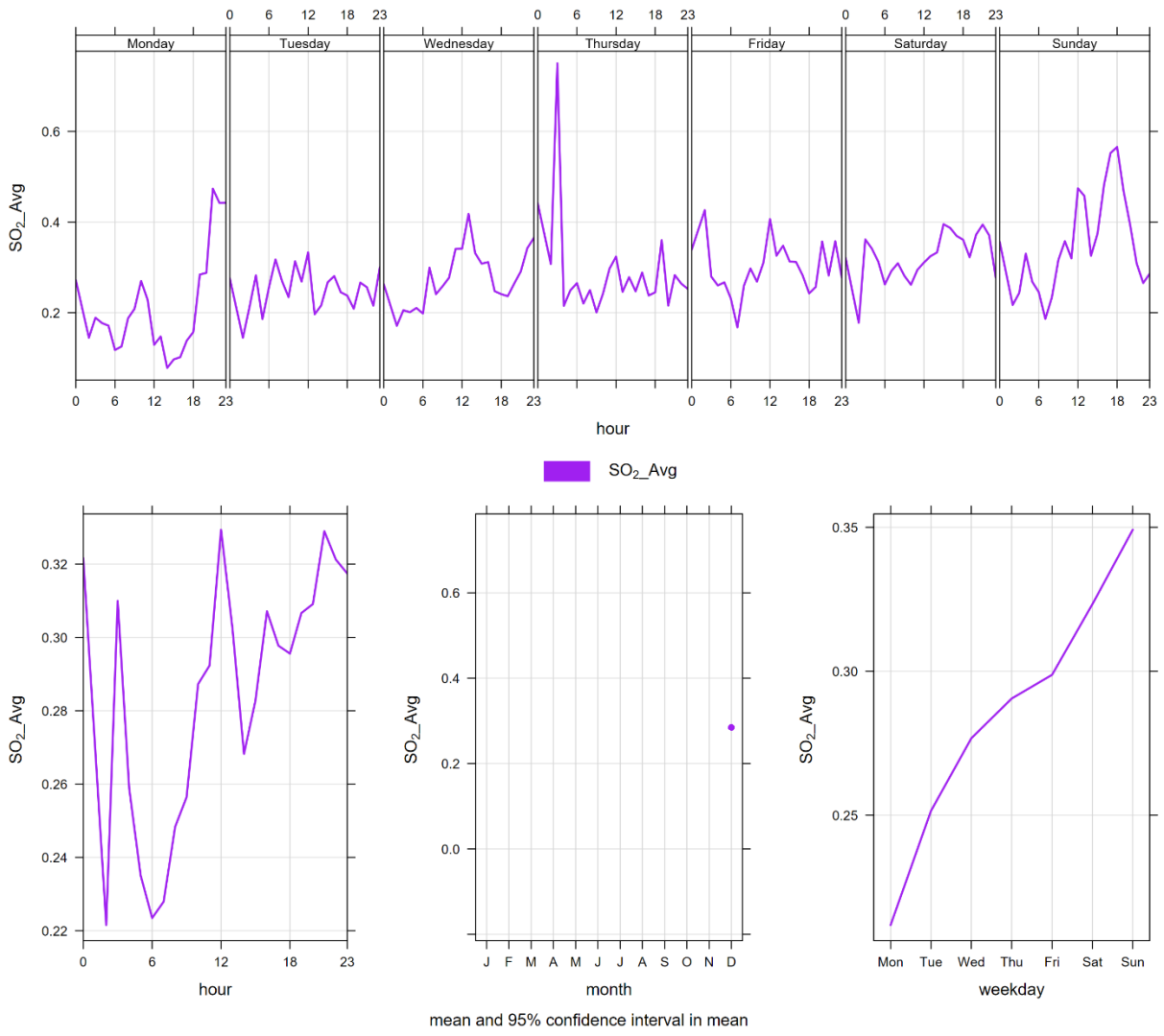


Figure 3-10 Lagoon monitor SO_2 time variation

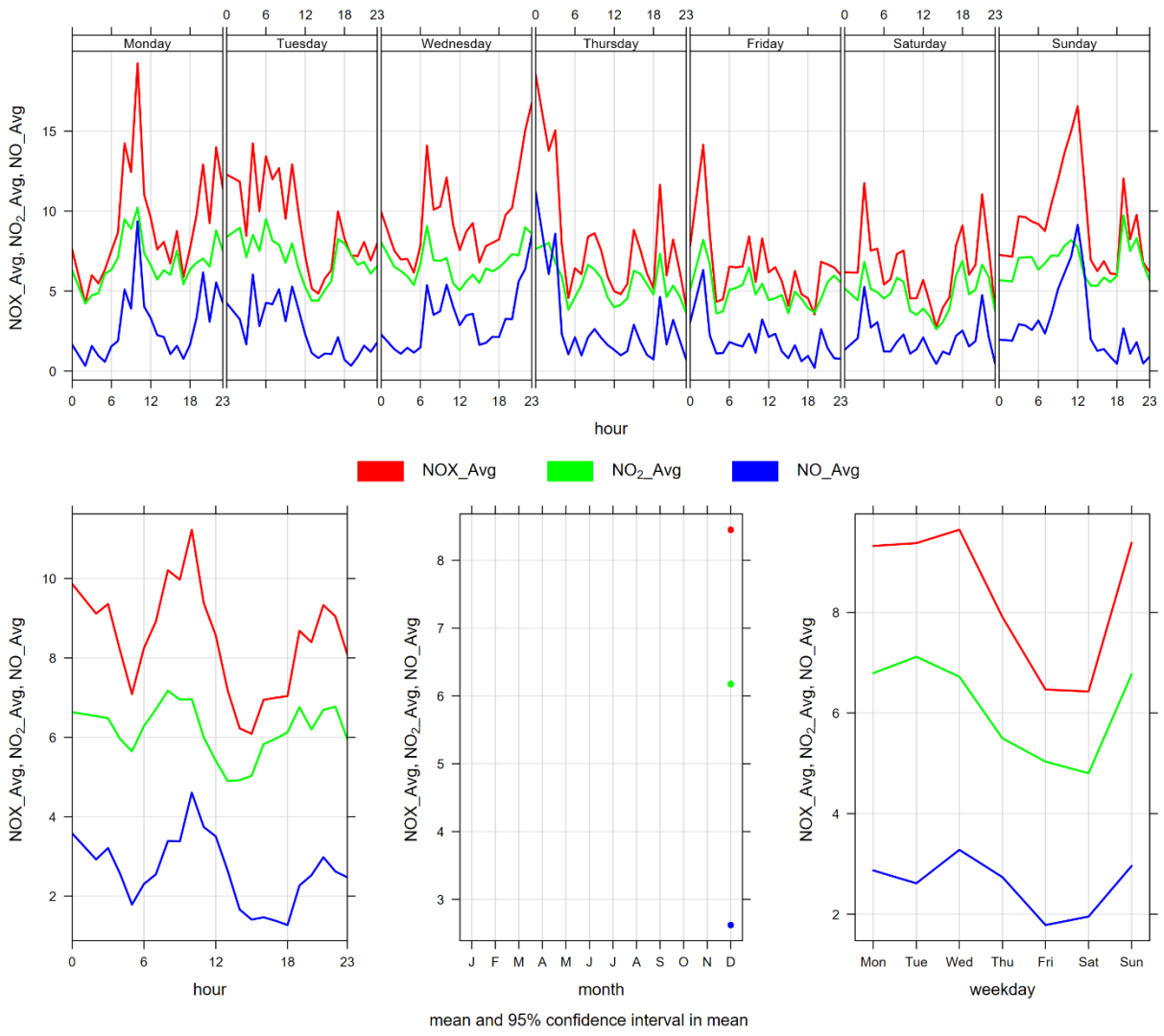


Figure 3-11 Lagoon monitor NO_x time variation

4 WINDRIDGE STATION

The Windridge station contains TSP, PM_{10}, and $PM_{2.5}$ analyzers only. This section provides a summary of the monitoring activities for the Windridge ambient air quality station, including: a table of instrumentation (Table 4-1), a data summary table (Table 4-2), a table of recorded exceedances (Table 4-3), site visit notes, and graphs illustrating the monitoring results for December 2024.

All of the monitors comply with Alberta Environment and Parks Air Monitoring Directive (2016).

4.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 4-1.

Table 4-1 Instrumentation List at the Windridge monitoring location

Parameter Measured	Equipment Description	Notes
$PM_{2.5}$ Concentrations	MetOne BAM-1020 FRM Continuous Particulate Monitor	The $PM_{2.5}$ monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.
PM_{10} Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The PM_{10} monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.
TSP Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	The TSP monitor was calibrated on December 3rd. The monitor had 100% uptime for the month of December.

4.2 MONITORING RESULTS AND TRENDS

Table 4-2 summarizes the hourly and daily concentrations recorded in December 2024, and Table 4-3 the recorded exceedances. Figure 4-1 illustrates the time series for hourly PM, Figure 4-2 to Figure 4-4 illustrates the histograms for hourly PM, Figure 4-5 illustrates the time series for daily PM, Figure 4-6 displays the wind rose for the 24-hour TSP and Figure 4-7 illustrates the time series for hourly PM over different time periods.

There were no exceedance of the 24-hour $PM_{2.5}$ AAAQO. There was no exceedance of the 1-hour $PM_{2.5}$ AAAQG, and 1 exceedance of the 24-hour TSP AAAQO.

Historically in December, the average number of 24-hour TSP AAAQO exceedances and 24-hour PM2.5 AAAQO exceedances were 8 and 0 days. The maximum number of 24-hour TSP AAAQO exceedances recorded in December were 16 days in 2018. The 24-hour $PM_{2.5}$ AAAQO has not been exceeded in the station data record from 2017 to 2023.

Due to flood mitigation construction at Exshaw creek the Windridge monitoring station was taken out of operation and removed from the site on April 8th, 2019. The flood mitigation work was completed in August 2020. The Windridge station was reinstalled for September 1st, 2020. As per the photo presented in section 1.1 the flood mitigation work has left an exposed creek bed area immediately west of the Windridge monitor that may contribute to an increase in TSP levels. Further, the strong wind gusting that occurred in May would have contributed to increased particulate levels that may have arisen from multiple sources: Lafarge Plant, Exshaw Creek, dry sections of the Bow River, and open areas.

Table 4-2 Summary of December 2024 data at the Windridge Station

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ ($\mu g/m^3$)	80	29	Windridge	0	0	0.0	2.2	30.0	20	5	37.0	244.7	14.0	17	100.0
PM_{10} ($\mu g/m^3$)	-	-	Windridge	-	-	0.0	27.9	485.0	20	5	37.0	244.7	108.3	20	100.0
TSP ($\mu g/m^3$)	-	100	Windridge	-	1	0.0	42.6	985.0	20	5	37.0	244.7	192.3	20	100.0

Table 4-3 Days exceeding the TSP AAAQO or $PM_{2.5}$ AAAQO at the Windridge Station

Date	TSP (ug/m^3)	$PM_{2.5}$ (ug/m^3)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Windridge						
2024-12-20	192.3	-	233.1	26.6	51.6	High wind event
Total # of Exceedances	**1**	**0**				
Maximum # of Exceedances (December)	**16 (2018)**	**0 (2017, 2018, 2020, 2021, 2022, 2023)**				
Average # of Exceedances (December)	**8**	**0**				
Minimum # of Exceedances (December)	**3 (2022)**	**0 (2017, 2018, 2020, 2021, 2022, 2023)**				

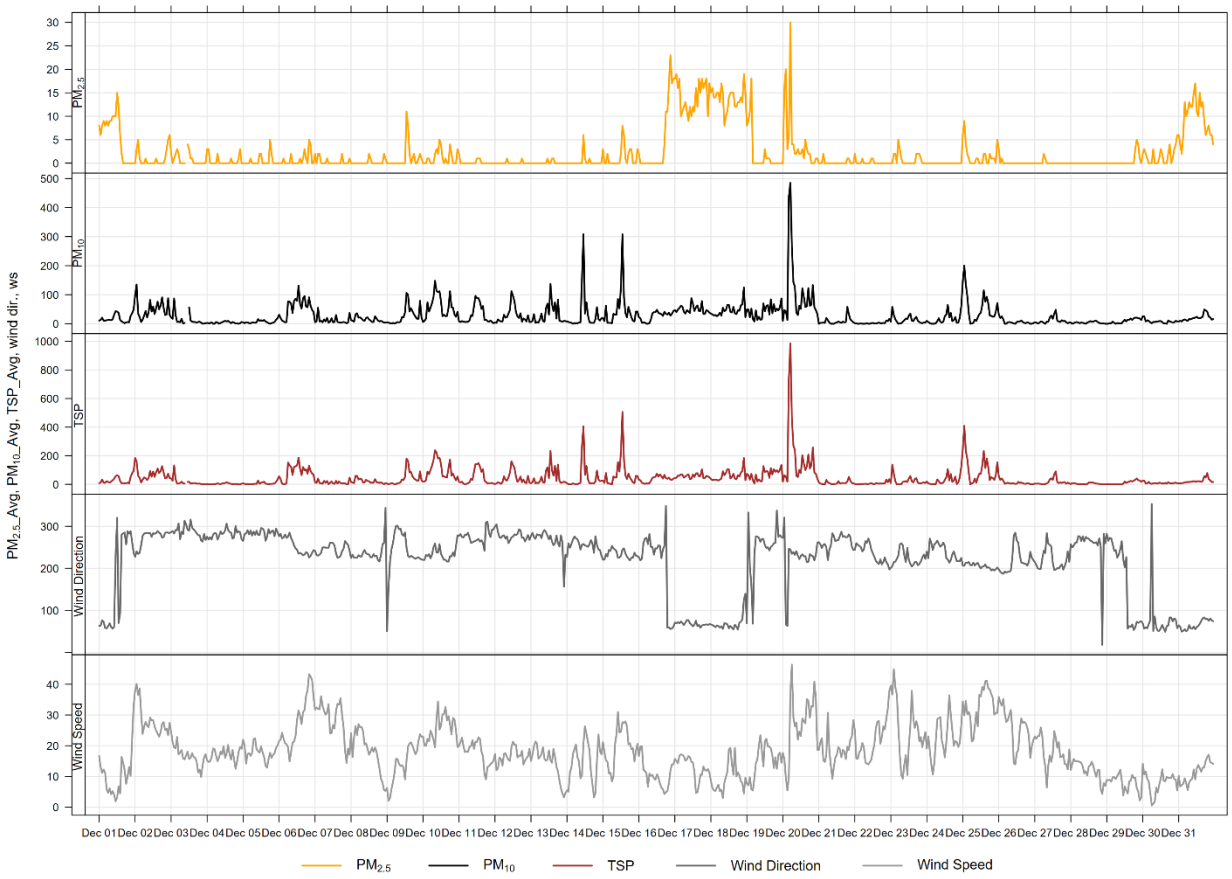


Figure 4-1 1-hour particulate matter concentrations recorded at the Windridge monitor

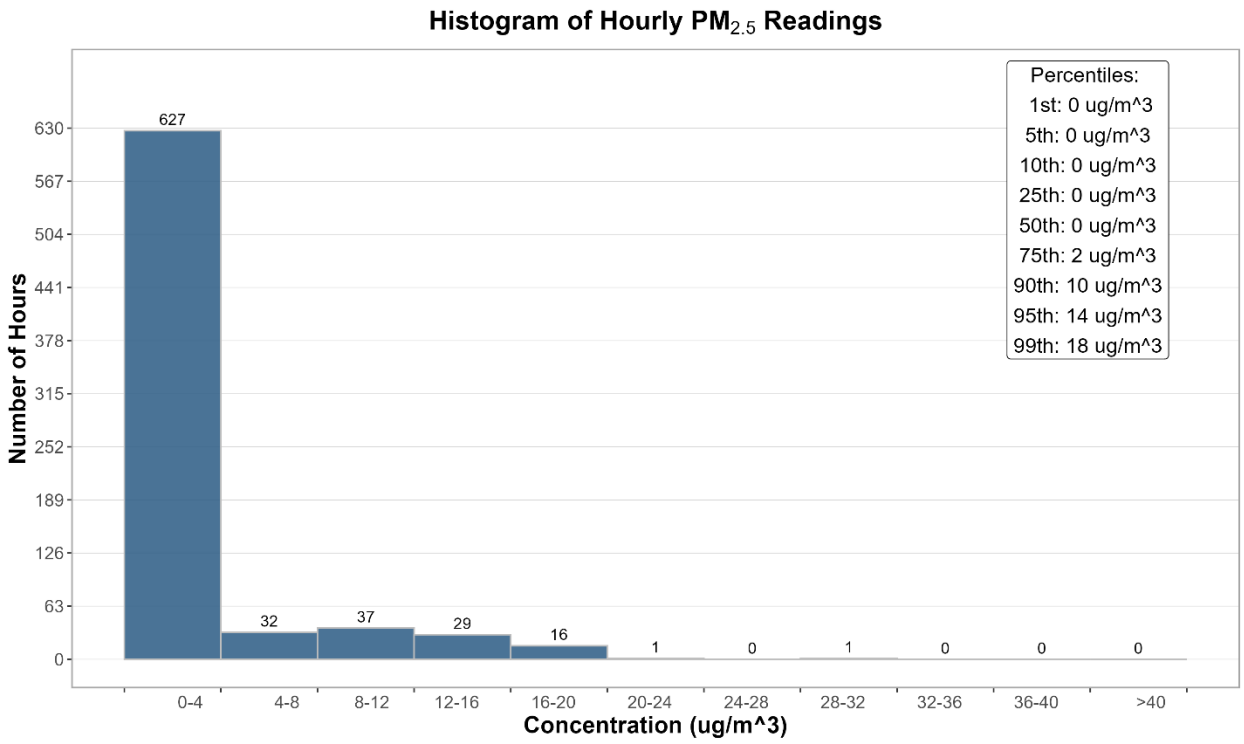


Figure 4-2 **Histogram of hourly $PM_{2.5}$ concentrations at the Windridge station**

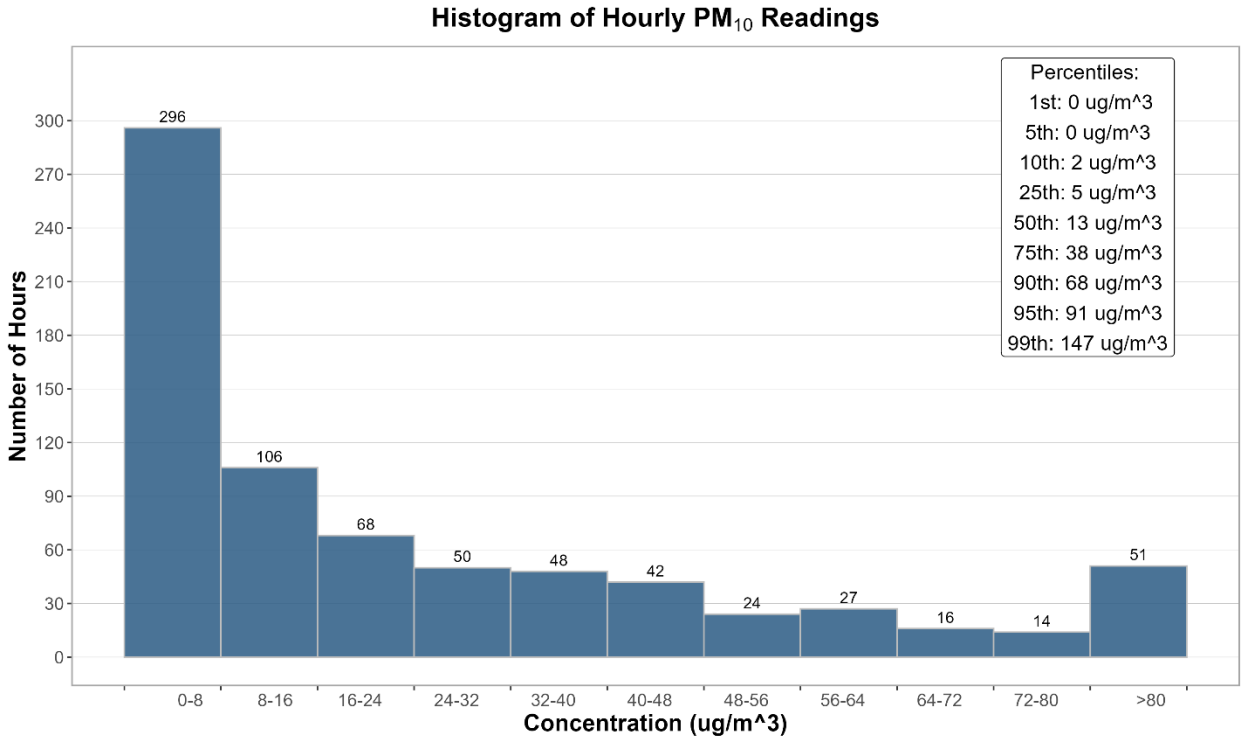


Figure 4-3 **Histogram of hourly PM_{10} concentrations at the Windridge station**

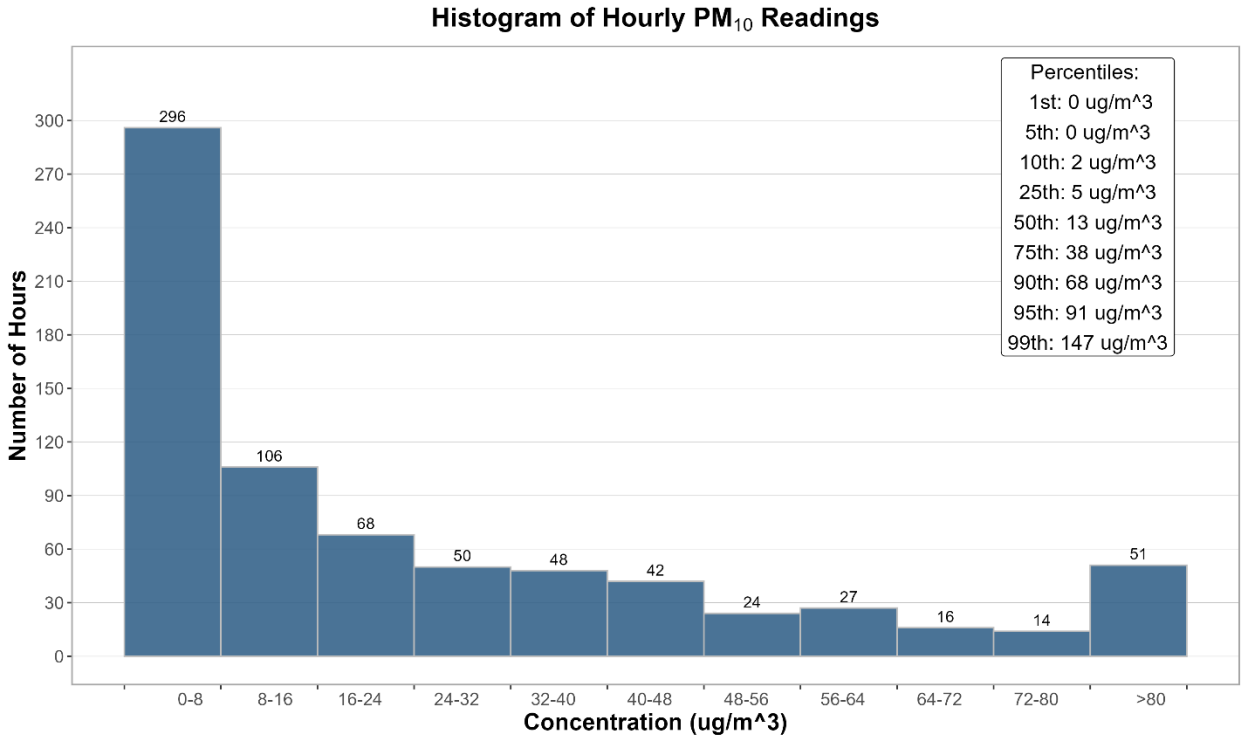


Figure 4-4 Histogram of hourly TSP concentrations at the Windridge station

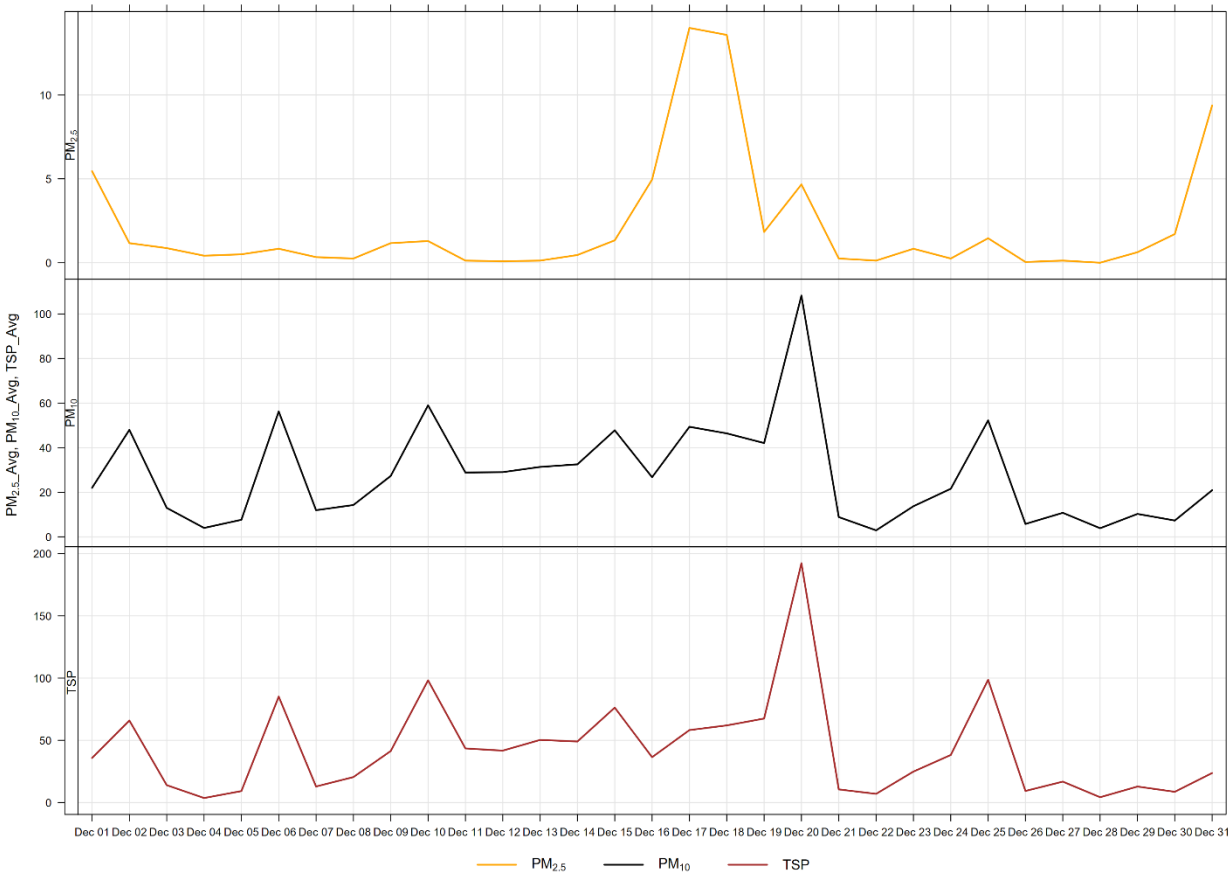


Figure 4-5 24-hour particulate matter concentrations at the Windridge monitor

Figure 4-6 shows the wind rose for the one day of TSP exceedance in December. The wind rose shows that the winds predominately came from the southwest, in high wind speed conditions (>20 km/h). This wind direction is slightly shifted (south) from months where it is suggested that the impacts are from windblown dust from the direction of the Lafarge Facility, which may indicate influence from other sources in December (i.e road dust from winter traction material).

Figure 4-7 illustrates the hourly PM concentrations recorded at the Windridge monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 4-7 is based on data collected during December 2024. The data shows a diurnal pattern potentially associated with Lafarge daytime operations, daytime emissions from traffic and other airshed activities. The PM concentrations also follow the diurnal pattern of higher wind speeds during the daytime hours.

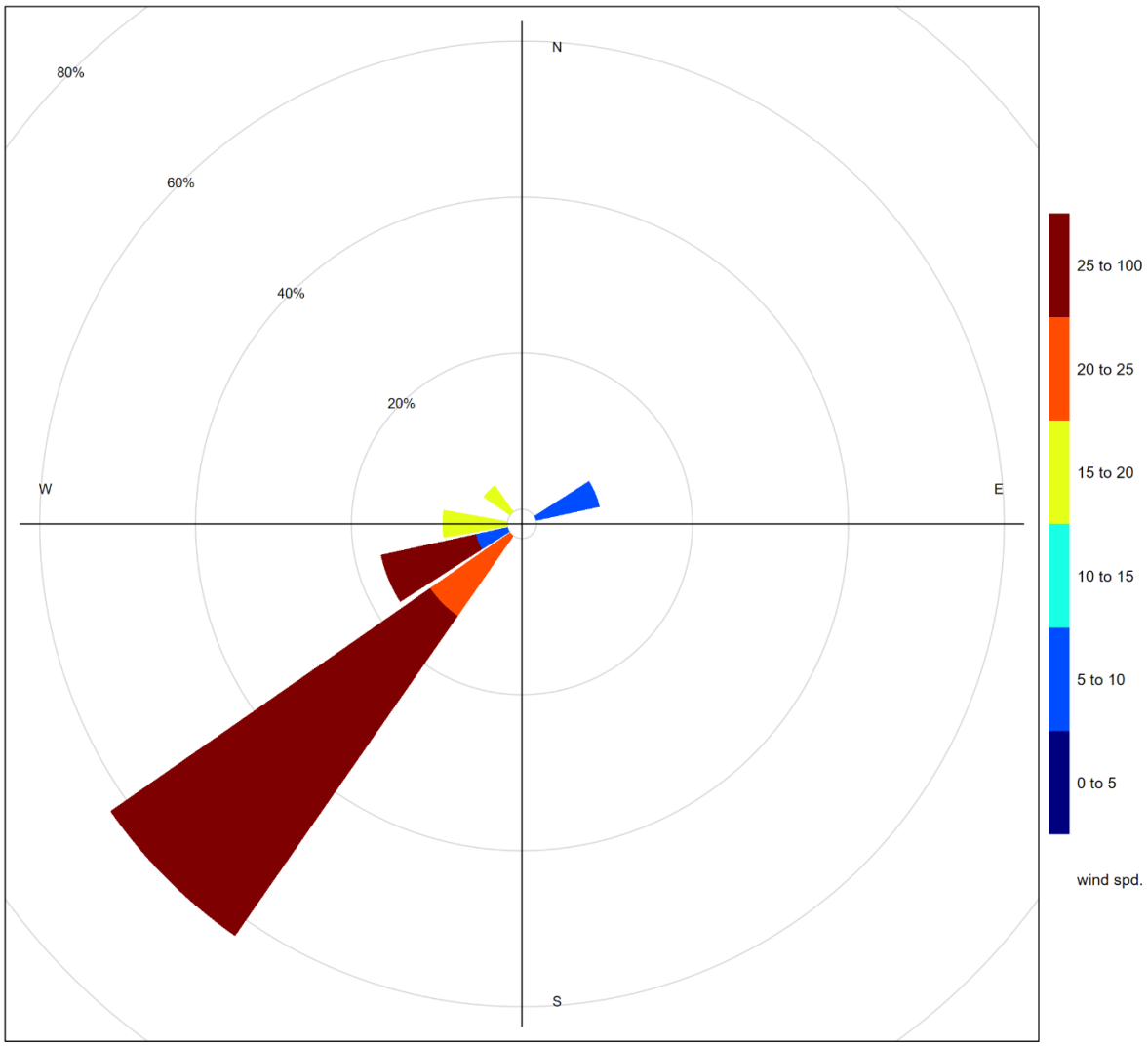


Figure 4-6 Wind rose for TSP exceedance days recorded at the Windridge Station

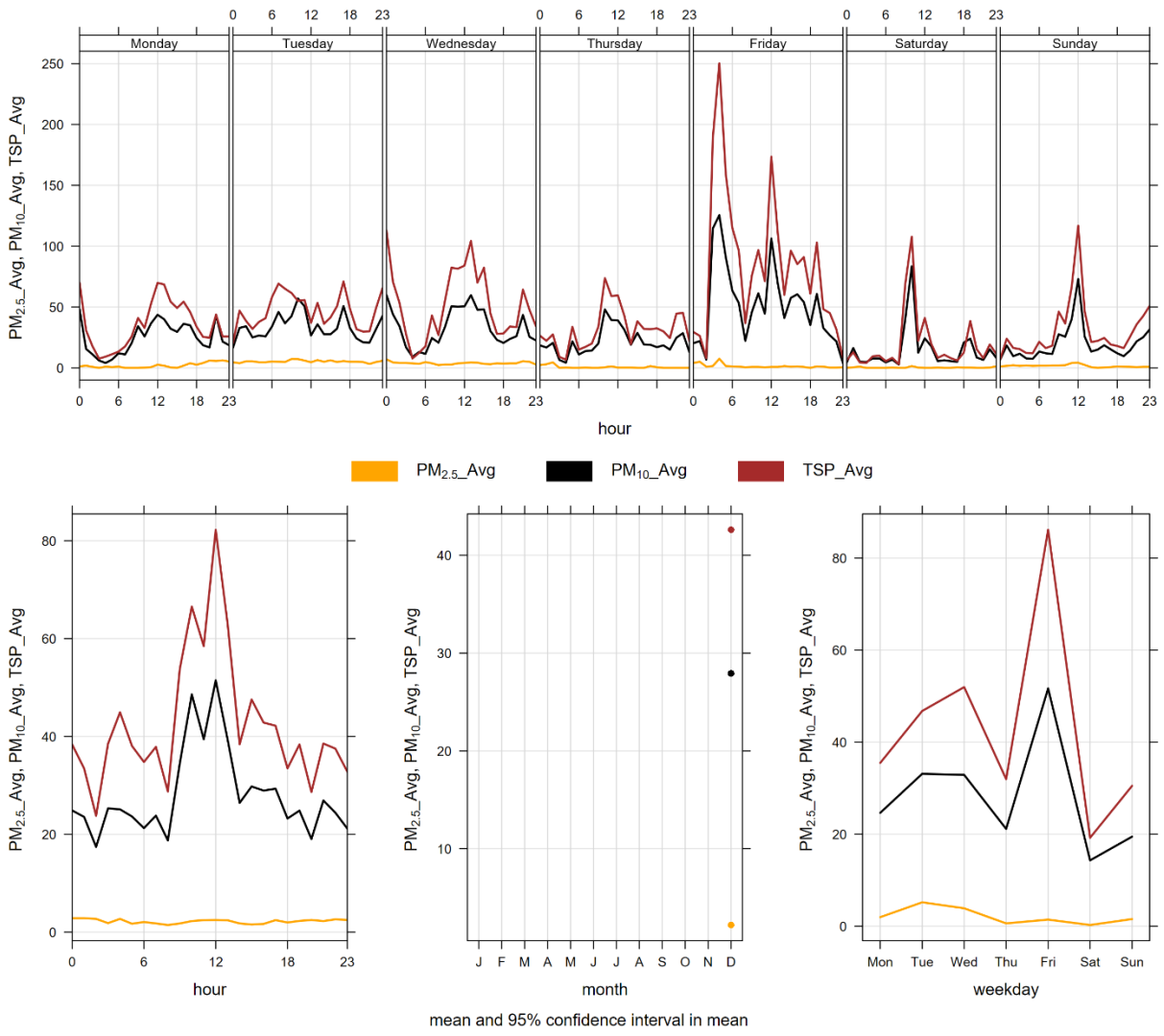


Figure 4-7 Windridge particulate matter time variation

5 BERM INDUSTRIAL GRIMM

5.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 5-1.

Table 5-1 Instrumentation List at the West monitoring location

Parameter Measured	Equipment Description	Notes
$PM_{2.5}$, PM_{10}, TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	The analyzer had 100% uptime for the month of December.

5.2 MONITORING RESULTS AND TRENDS

The Berm monitor was placed at its current location as a result of the dispersion modelling conducted for the facility. Figure 5-1 and Figure 5-2 show the hourly and daily $PM_{2.5}$, PM_{10}, and TSP concentrations recorded over the month. Table 5-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month, and Table 5-3 summarizes the recorded exceedances. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

There were 10 exceedances of the 24-hour TSP Guideline (100 µg/m^3). There was 1 exceedance of the 24-hour $PM_{2.5}$ (29µg/m^3) and 2 hours exceeding the 1-hour $PM_{2.5}$ Guideline.

Historically during the month of December, the Berm monitor records an average of 15 and 1 exceedances of the 24-hour TSP and $PM_{2.5}$ guidelines, respectively. The maximum number of TSP exceedances recorded during December occurred in 2011 where there were 15 days that exceeded the guideline. On the other hand, the maximum number of $PM_{2.5}$ exceedances in December was 5 days in 2014.

It should also be noted that the GRIMM monitors become more conservative in the reported PM concentrations as the size fraction increases. The $PM_{2.5}$ size fraction has been shown to match other regulatory approved $PM_{2.5}$ monitors, but the TSP concentrations recorded by the GRIMM tend to be higher than regulatory approved monitors (Levelton, 2015).

The Berm monitor is located along a ridge at the edge of the Lafarge property and is in an area where on-site trucks drive through site, which can create fugitive dust. Quarry blasting also has the potential to impact short term PM immediately following a blast. The strong wind gusting that occurred in July would have also contributed to increased particulate levels that may have arisen from multiple sources: Lafarge Plant, Exshaw Creek, dry sections of the Bow River, and open areas.

Table 5-2 Summary of December 2024 data at the Berm GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ ($\mu g/m^3$)	80	29	Berm	2	1	0.1	7.4	145.4	20	6	46.4	234.5	32.3	20	100.0
PM_{10} ($\mu g/m^3$)	-	-	Berm	-	-	0.1	28.9	1006.0	20	6	46.4	234.5	187.0	20	100.0
TSP ($\mu g/m^3$)	-	100	Berm	-	10	0.1	98.6	3226.5	20	6	46.4	234.5	656.6	20	100.0

Table 5-3 Days exceeding the Guideline for TSP or $PM_{2.5}$ at the Berm Monitor

Date	TSP (ug/m^3)	$PM_{2.5}$ (ug/m^3)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Berm						
2024-12-02	221.0	-	273.7	27.7	57.9	High wind event
2024-12-06	208.7	-	247.0	28.2	51.4	High wind event
2024-12-10	326.5	-	234.9	25.5	45.3	High wind event
2024-12-11	107.0	-	274.9	17.8	59.8	
2024-12-13	111.2	-	272.3	14.0	65.3	
2024-12-14	154.4	-	254.4	15.4	55.9	
2024-12-15	227.1	-	232.6	19.6	37.2	
2024-12-19	125.1	-	265.2	14.9	60.8	
2024-12-20	656.6	32.3	233.1	26.6	51.6	High wind event
2024-12-25	297.5	-	204.6	32.9	34.7	High wind event
Total # of Exceedances	**10**	**1**				
Maximum # of Exceedances (December)	**24 (2011)**	**5 (2014)**				
Average # of Exceedances (December)	**15**	**1**				
Minimum # of Exceedances (December)	**0 (2023)**	**0 (2011, 2012, 2013, 2015, 2016, 2019, 2020, 2021, 2022, 2023)**				

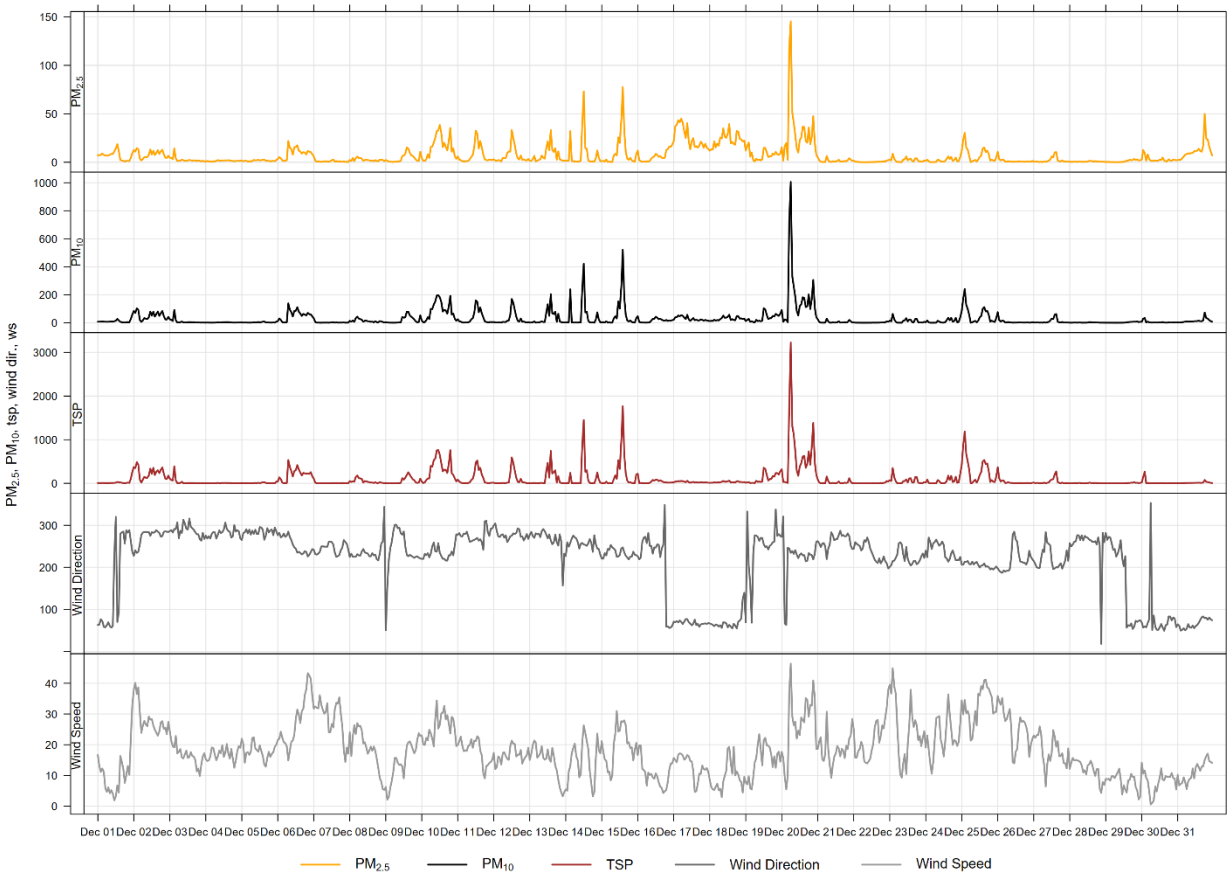


Figure 5-1 1-hour particulate matter concentrations at the Berm monitor

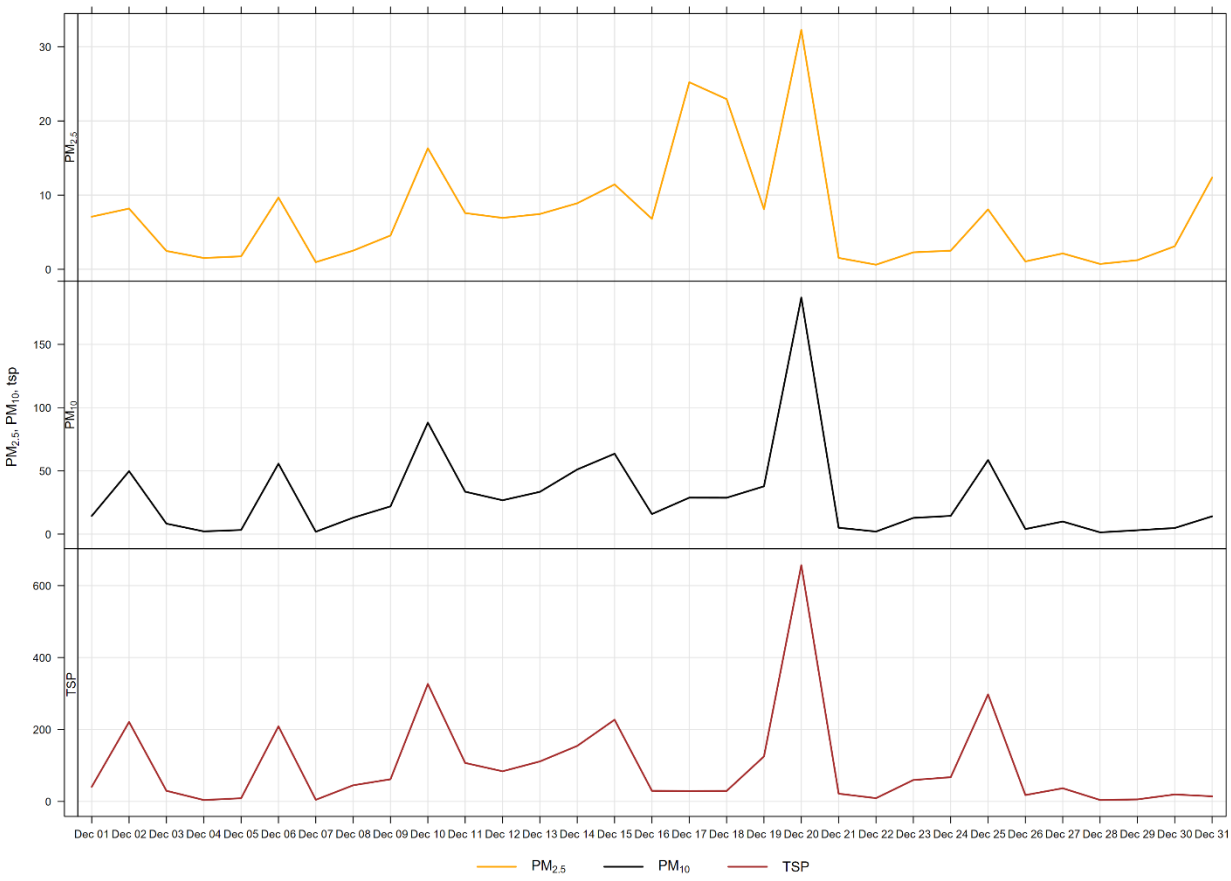


Figure 5-2 24-hour particulate matter concentrations at the Berm monitor

Figure 5-3 shows the wind rose for the 10 days of TSP exceedances, and shows that the wind predominately came from the west to south-southwest direction, in high wind speed (>20 km/h), suggesting impacts of windblown dust from the direction of the Lafarge Facility. Figure 5-4 shows the wind rose for the 1 day of PM2.5 exceedances, and shows that the wind predominately came from the southwest direction, in high wind speed (>20 km/h).

Figure 5-5 shows the variation of PM recorded at the Berm monitor over various time averaging periods. The Berm monitor diurnal pattern, similar to the Lagoon station, and is associated with Lafarge operations, but also daytime emissions from other activities and sources in Exshaw.

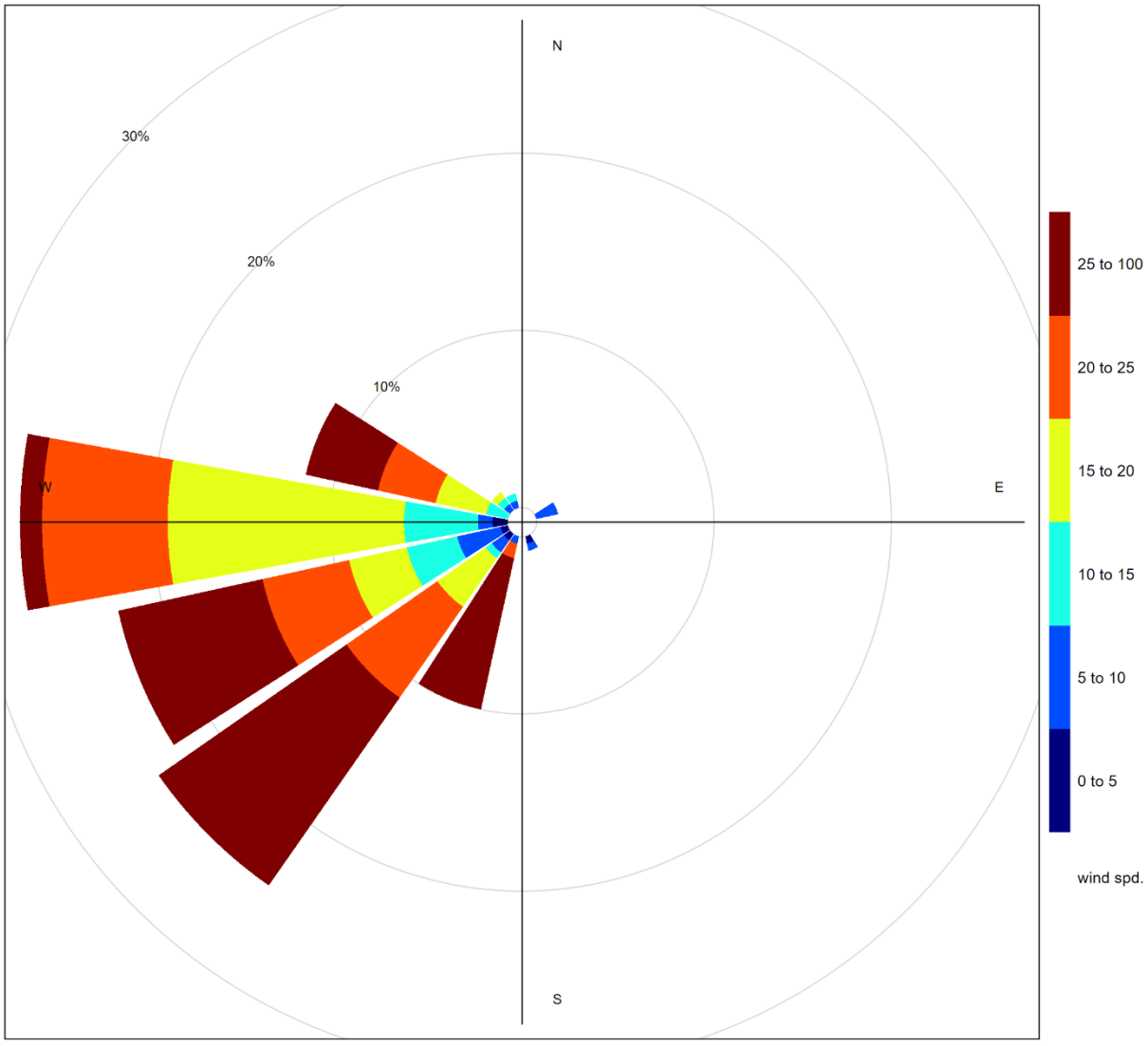


Figure 5-3 Windrose for TSP exceedance days recorded at the Berm GRIMM

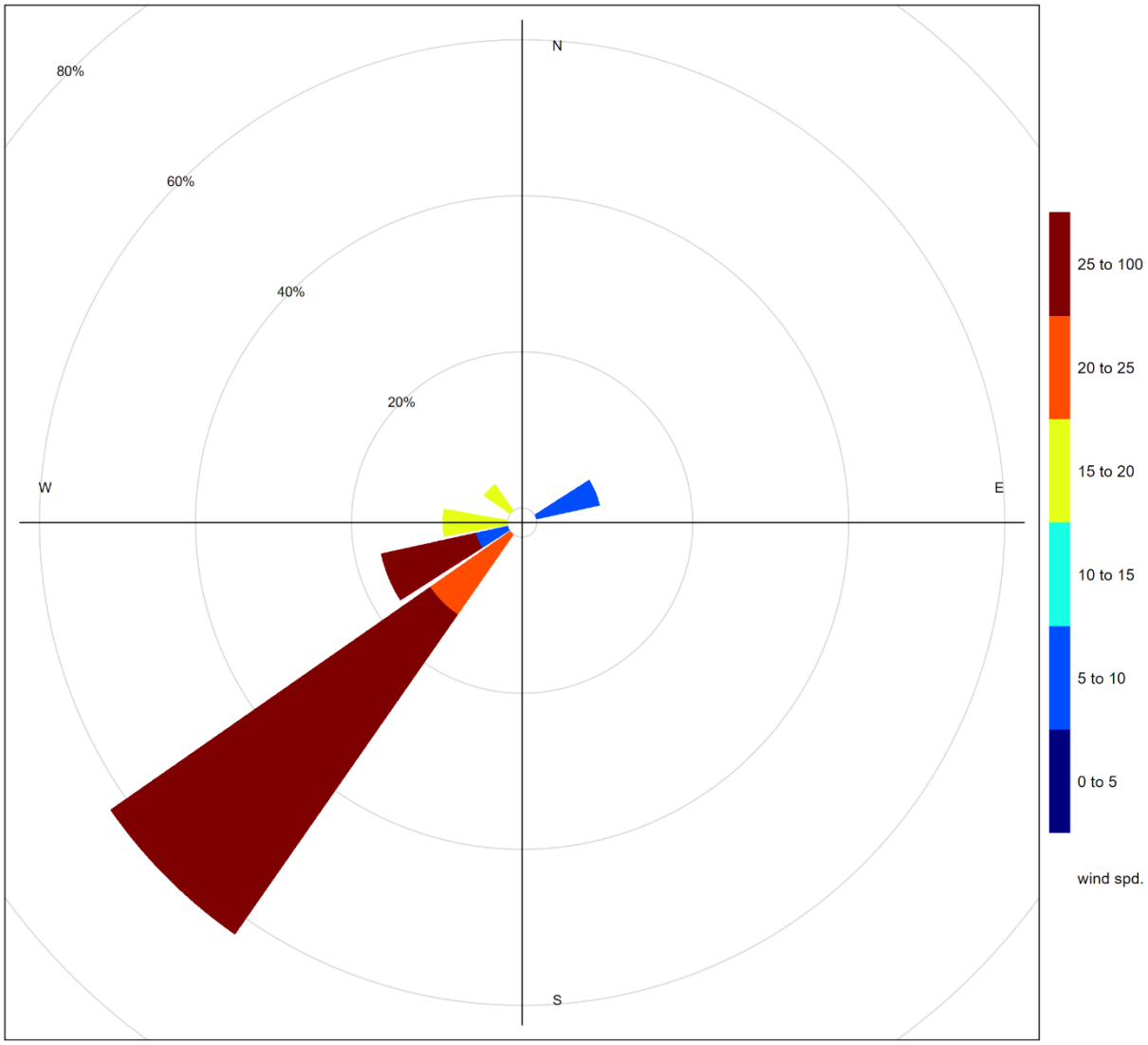


Figure 5-4 Windrose for $PM_{2.5}$ exceedance days recorded at the Berm GRIMM

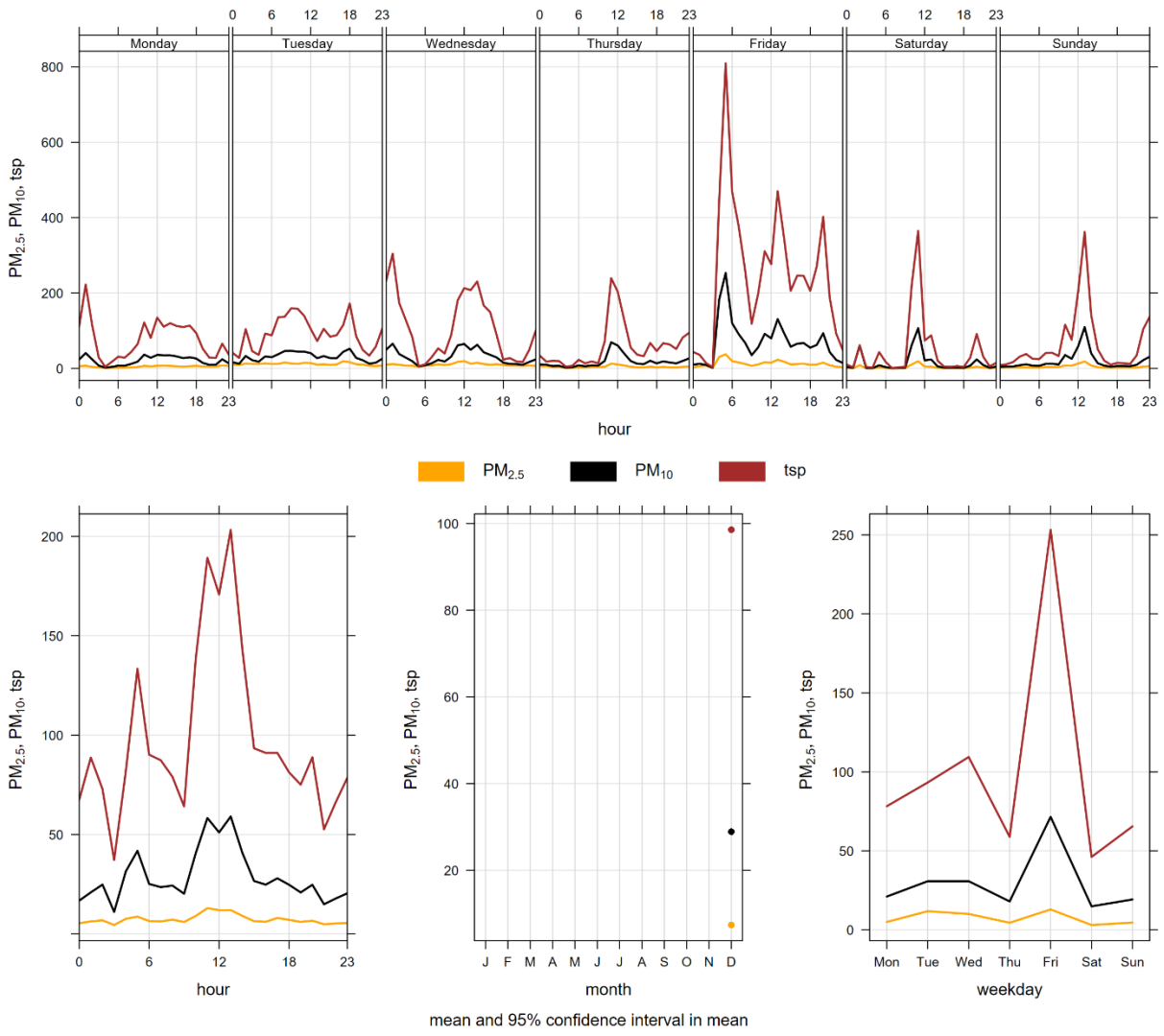


Figure 5-5 Berm monitor particulate matter time variation

6 BIBLIOGRAPHY

- Alberta Environment and Parks. (2016, June). Alberta Ambient Air Quality Objectives and Guidelines Summary. Alberta, Canada.
- Alberta Environment and Parks. (2016, April). Air Monitoring Directive. Alberta, Canada.
- Carslaw, D.C. and K. Ropkins, (2012). Openair — an R package for air quality data analysis. Environmental Modelling & Software. Volume 27–28, 52–61.
- Levelton Consultants Ltd. (2015, June 15). Comparison of GRIMM and E-BAM Data. Alberta, Can

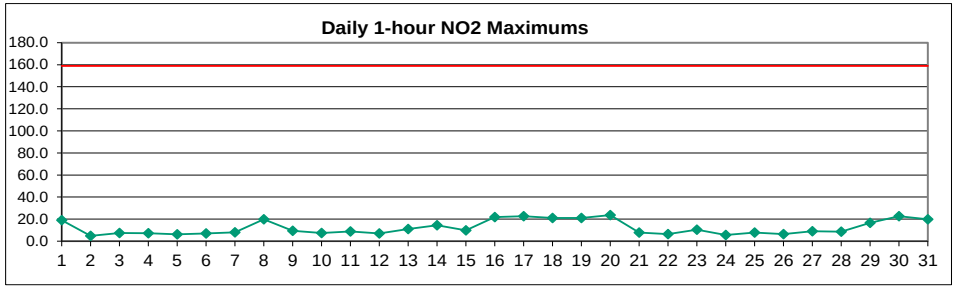
APPENDIX

A DATA & CALIBRATION REPORTS

APPENDIX

Lagoon NO_2 (ppb) – December 2024

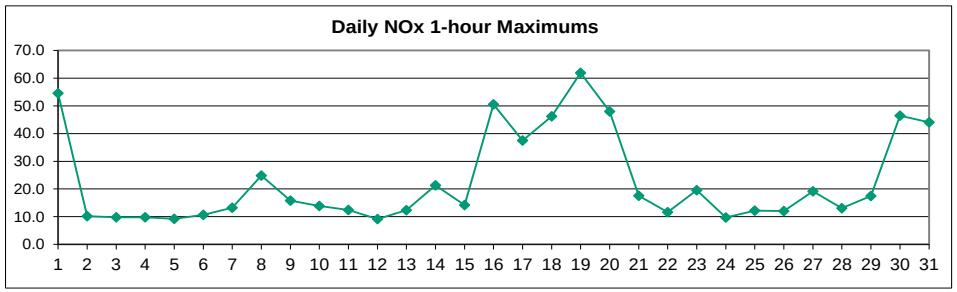
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	12.2	S	13.6	16.2	15.8	15.2	17.9	16.8	16.1	15.7	17.3	18.7	19.0	16.3	7.5	4.2	3.7	6.0	5.1	4.0	4.0	2.7	1.8	1.6	10.9	19.0
2	2.4	S	2.0	2.8	2.0	2.6	1.9	2.3	2.4	2.3	2.1	2.7	2.0	2.2	2.5	2.3	3.1	2.4	2.3	2.0	3.2	1.8	3.6	4.9	2.5	4.9
3	3.8	S	2.1	2.4	2.5	3.2	4.7	5.5	4.9	5.5	4.2	4.4	4.7	4.2	4.5	6.7	7.4	6.7	5.8	4.8	4.6	4.8	3.4	4.7	4.6	7.4
4	4.4	S	4.4	3.8	4.4	4.1	6.7	5.5	6.3	6.5	5.8	4.7	4.3	6.0	6.2	5.8	7.3	6.8	4.9	4.4	4.5	3.5	5.0	3.4	5.2	7.3
5	2.9	S	2.5	2.3	4.5	3.1	3.4	4.3	5.7	6.2	4.5	3.5	3.4	3.1	3.4	3.5	4.8	5.8	4.4	3.6	4.4	4.6	3.5	3.8	4.0	6.2
6	3.1	S	3.6	3.9	3.2	2.9	4.4	3.9	5.1	6.5	6.3	7.0	4.4	5.4	4.0	4.3	5.1	3.4	1.5	1.7	1.5	1.8	4.9	3.3	4.0	7.0
7	5.5	S	4.0	8.0	4.7	4.0	5.7	4.2	4.8	5.4	2.7	2.7	5.5	4.5	2.3	2.8	4.7	4.2	4.9	3.0	6.6	3.0	5.7	3.6	4.5	8.0
8	5.8	S	2.6	5.7	3.8	3.1	2.8	4.2	4.4	7.2	8.3	7.8	6.1	3.9	5.6	5.3	6.5	4.9	4.5	19.8	5.8	10.9	6.8	8.2	6.3	19.8
9	5.9	S	6.8	4.9	3.2	3.6	3.7	5.1	6.4	6.6	6.4	5.2	9.5	4.9	4.4	4.6	6.9	4.6	4.1	3.3	2.7	1.8	2.1	1.8	4.7	9.5
10	1.7	S	2.5	2.8	2.0	1.9	7.5	3.2	2.5	2.6	3.6	2.8	1.8	1.7	1.5	1.5	1.4	2.9	1.3	1.6	1.5	3.4	3.4	3.3	2.5	7.5
11	5.8	S	3.2	2.7	3.2	3.5	2.9	6.1	5.3	4.1	7.0	5.4	4.0	3.6	3.8	6.0	6.7	7.7	5.8	7.8	8.9	5.1	7.8	4.8	5.3	8.9
12	6.1	S	6.4	3.7	4.8	3.8	4.9	5.3	6.6	7.0	5.4	4.3	4.5	3.7	4.7	5.1	4.7	4.8	4.6	5.5	6.0	5.1	3.8	4.1	5.0	7.0
13	4.7	S	3.4	3.9	3.9	4.7	4.7	5.0	5.7	5.8	5.5	6.7	6.7	6.5	5.9	5.7	8.5	6.8	5.1	5.6	6.0	9.6	11.0	10.4	6.2	11.0
14	8.1	S	8.0	8.3	6.7	6.4	3.9	6.8	9.0	6.6	3.6	2.3	2.8	3.3	2.9	1.9	3.4	10.1	14.5	5.6	3.0	7.0	5.3	2.5	5.7	14.5
15	1.6	S	4.1	4.6	8.1	9.6	2.9	3.5	4.8	4.3	4.1	3.2	2.8	2.0	2.3	7.2	3.0	3.1	4.5	4.4	7.5	9.8	7.9	6.7	4.9	9.8
16	9.9	S	3.9	7.1	5.8	4.8	7.4	11.3	12.0	13.6	14.3	12.1	14.0	13.6	14.6	11.7	10.7	13.2	16.3	18.7	21.8	21.5	21.0	20.8	13.0	21.8
17	22.1	S	16.8	14.3	14.2	15.2	15.5	12.2	9.4	9.1	12.0	7.8	C	C	C	C	C	20.4	22.7	21.6	18.2	15.2	14.3	15.0	15.3	22.7
18	18.3	S	15.8	15.2	13.7	12.4	13.1	21.1	13.1	14.3	13.6	10.4	10.9	11.6	12.5	8.8	10.1	9.5	13.6	13.6	15.0	19.0	20.6	18.2	14.1	21.1
19	19.3	S	21.1	18.0	13.2	7.4	9.3	8.3	9.8	8.5	10.3	7.9	5.1	5.6	4.8	12.2	9.3	6.9	6.5	14.8	5.1	5.8	4.9	3.0	9.4	21.1
20	9.0	S	23.7	15.3	4.7	3.5	4.7	5.3	6.4	9.0	2.5	3.1	4.1	4.3	6.0	2.2	1.8	3.7	5.5	1.8	1.6	4.9	4.0	4.4	5.7	23.7
21	2.8	S	2.3	5.1	5.3	3.6	4.4	4.6	3.6	4.9	4.4	4.2	3.7	2.6	2.6	3.3	4.0	4.0	4.1	3.4	2.8	7.9	4.6	4.0	4.0	7.9
22	4.1	S	3.7	4.3	3.3	2.0	2.6	2.5	4.4	3.4	2.9	4.2	5.4	1.8	2.8	1.8	6.0	2.3	1.8	6.5	3.5	2.7	1.8	1.3	3.3	6.5
23	1.5	S	2.6	2.8	3.6	3.0	4.3	3.1	4.0	4.5	10.5	8.0	3.9	1.7	3.2	5.7	8.9	2.8	5.6	6.5	4.2	4.3	9.3	4.6	4.7	10.5
24	3.0	S	4.3	5.6	3.9	4.2	4.0	2.8	5.3	3.9	5.7	4.1	2.7	2.8	1.5	2.1	3.1	1.4	3.2	2.2	2.9	5.3	3.9	3.7	3.5	5.7
25	3.6	S	2.7	3.3	2.4	1.5	4.2	3.6	3.1	2.6	1.8	1.4	1.1	1.2	1.6	1.5	1.6	1.0	1.7	1.7	0.8	1.4	2.6	7.9	2.4	7.9
26	2.3	S	2.0	3.1	1.1	1.1	0.9	3.7	4.5	3.7	3.0	2.8	2.9	4.3	5.3	4.3	5.5	4.3	3.7	5.4	3.1	5.9	6.5	3.7	3.6	6.5
27	3.7	S	2.1	3.6	2.6	3.9	6.5	6.6	4.5	4.6	4.8	5.0	2.5	2.1	3.1	2.3	4.5	4.1	3.7	5.5	9.1	6.1	4.1	4.1	4.3	9.1
28	4.2	S	3.4	6.0	3.9	5.7	4.2	3.8	6.0	5.4	4.3	4.8	3.7	3.2	2.7	4.2	3.5	5.5	4.1	7.1	8.0	8.7	8.0	4.8	5.0	8.7
29	4.7	S	4.1	4.7	4.5	5.6	5.5	6.7	6.5	5.4	6.5	7.1	5.4	5.8	8.4	8.2	10.0	11.5	13.9	13.8	16.6	15.5	15.0	10.4	8.5	16.6
30	11.8	S	5.8	6.1	9.7	16.4	14.4	13.8	22.6	17.5	17.8	8.8	3.9	6.2	6.9	5.7	8.1	4.2	3.5	3.3	3.3	3.3	7.9	5.5	9.0	22.6
31	11.3	S	19.1	10.5	19.9	13.1	15.8	17.0	17.4	12.8	14.4	12.9	11.9	8.9	10.1	10.0	10.6	9.9	6.8	6.3	6.1	5.3	5.5	6.0	11.4	19.9
NO.	31	-	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	708	100.0%
MEAN	6.6	-	6.5	6.5	6.0	5.6	6.3	6.7	7.2	6.9	7.0	6.0	5.4	4.9	4.9	5.0	5.8	6.0	6.1	6.8	6.2	6.7	6.8	6.0		
MAX	22.1	-	23.7	18.0	19.9	16.4	17.9	21.1	22.6	17.5	17.8	18.7	19.0	16.3	14.6	12.2	10.7	20.4	22.7	21.6	21.8	21.5	21.0	20.8		



Number of 1HR Exceedences	0		
Number of Non-Zero Readings	708		
Maximum 1-HR Average	23.7 PPB		
Maximum 24-HR Average	15.3 PPB		
		Operational Time	744 HRS
Monthly Calibration	5	Operational Uptime	100.0 %
Standard Deviation	4.5	Monthly Average	6.2 PPB

Lagoon NOx (ppb) – December 2024

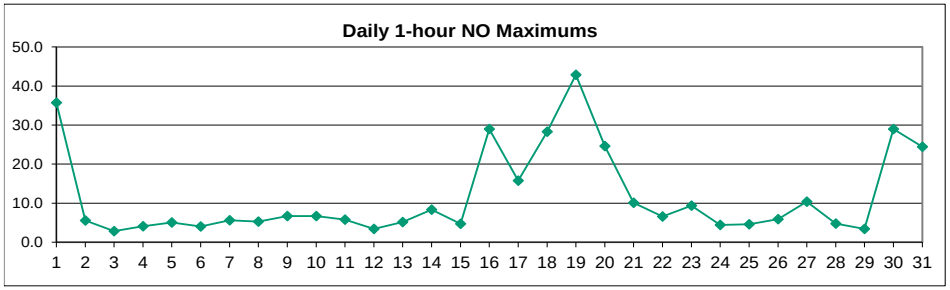
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	16.6	S	20.5	25.5	26.3	20.6	31.8	22.9	27.4	32.8	41.7	43.1	54.6	43.6	11.4	4.9	3.4	7.0	4.9	5.4	5.6	2.4	1.5	1.2	19.8	54.6
2	2.6	S	1.9	2.8	3.2	3.2	1.4	3.2	2.0	2.2	2.5	5.5	2.2	2.4	2.5	2.3	3.6	2.3	4.7	1.7	3.7	1.3	6.2	10.2	3.2	10.2
3	5.2	S	1.7	3.7	3.6	3.2	6.3	6.7	6.2	7.7	5.4	6.0	6.2	5.0	5.1	9.1	9.8	7.1	5.5	4.4	4.6	5.9	2.9	6.9	5.6	9.8
4	5.3	S	4.3	4.5	5.1	3.8	8.2	5.4	8.1	8.3	7.6	6.6	5.0	9.8	8.0	6.3	8.2	8.2	4.5	3.9	6.4	3.6	7.0	3.1	6.1	9.8
5	2.5	S	2.9	1.9	9.2	2.7	3.2	4.4	7.4	8.1	5.4	4.4	4.7	3.6	3.8	3.4	6.5	6.9	4.1	3.2	6.3	7.2	3.1	4.6	4.8	9.2
6	4.4	S	3.2	4.6	2.8	2.5	6.8	4.5	6.5	8.9	7.0	10.6	6.3	7.2	4.5	5.0	6.0	3.8	1.0	1.4	1.0	1.5	5.6	3.1	4.7	10.6
7	7.6	S	4.3	13.3	6.7	4.7	8.0	5.3	6.7	8.6	2.8	2.7	8.5	5.7	2.7	3.2	6.8	5.1	7.2	3.1	10.5	3.0	7.0	3.7	6.0	13.3
8	6.5	S	2.6	7.2	4.0	3.1	2.8	4.8	5.2	11.1	10.6	10.1	6.6	4.0	6.1	5.6	7.0	4.9	4.3	24.8	5.5	13.4	6.6	8.2	7.2	24.8
9	5.6	S	6.9	5.8	2.8	3.8	3.3	5.0	7.9	7.5	8.3	6.6	15.8	6.4	5.2	4.9	8.2	4.6	3.8	3.1	2.4	1.5	1.8	1.3	5.3	15.8
10	1.3	S	2.3	2.7	1.9	1.6	13.9	3.0	2.5	3.0	4.4	3.5	1.9	1.7	1.2	1.4	1.1	3.4	0.9	1.2	1.2	5.6	5.2	3.4	3.0	13.9
11	7.9	S	4.3	2.3	3.4	3.3	2.6	10.5	8.7	4.3	12.5	7.1	4.4	3.9	4.0	7.5	6.7	10.3	5.5	9.5	10.8	4.7	10.2	5.5	6.5	12.5
12	7.4	S	9.2	3.4	5.1	3.4	8.0	5.4	6.5	8.6	7.7	6.3	6.4	4.2	5.6	7.2	4.6	4.7	4.2	6.5	7.1	6.5	3.6	4.8	5.9	9.2
13	5.4	S	2.9	4.3	3.8	5.4	4.5	4.9	6.5	6.7	6.8	11.2	9.3	11.2	6.9	6.6	12.3	6.7	4.8	5.2	5.7	9.1	11.5	10.3	7.0	12.3
14	8.5	S	11.9	16.3	11.8	14.4	3.5	8.2	10.7	7.1	5.6	2.6	3.2	4.8	2.9	1.6	3.5	11.2	21.3	8.8	3.0	10.6	5.6	2.2	7.8	21.3
15	1.2	S	4.0	4.6	9.7	13.5	2.8	3.8	5.1	5.6	4.6	3.6	3.2	2.3	2.4	9.9	2.9	3.1	4.4	4.4	8.0	14.2	9.0	7.1	5.6	14.2
16	14.8	S	3.6	10.6	6.5	4.3	12.5	17.6	18.3	19.6	19.4	17.2	20.0	18.0	19.9	12.8	10.7	15.2	20.0	32.1	50.6	34.3	39.7	35.1	19.7	50.6
17	37.5	S	18.5	14.4	17.9	21.5	17.3	14.2	9.5	12.7	22.8	13.1	C	C	C	C	C	28.5	24.4	22.1	20.3	17.0	16.0	18.2	19.2	37.5
18	22.4	S	18.5	17.3	16.7	16.1	16.2	36.5	20.0	25.9	26.1	21.2	19.6	20.1	23.3	11.9	14.6	12.7	21.1	23.6	22.9	40.3	40.2	46.2	23.2	46.2
19	61.9	S	40.8	51.5	16.2	11.2	13.8	9.0	14.1	11.4	14.1	9.9	6.0	6.5	5.6	19.8	12.3	7.9	8.3	28.4	7.5	10.0	6.4	2.9	16.3	61.9
20	17.7	S	48.0	20.9	7.9	4.2	5.1	7.0	8.1	12.5	3.1	4.1	5.6	5.3	7.7	2.2	1.7	4.2	8.8	1.7	1.4	7.3	4.3	6.0	8.5	48.0
21	3.7	S	2.1	7.3	7.7	3.8	4.7	5.5	3.7	7.7	4.8	5.9	5.1	2.9	2.6	5.4	4.9	5.2	3.9	3.3	3.0	17.5	8.2	4.9	5.4	17.5
22	6.9	S	4.6	6.6	3.8	2.0	2.7	3.4	6.5	4.3	3.4	8.2	11.6	1.8	3.5	1.9	8.2	2.4	1.7	10.4	4.6	3.1	1.6	1.0	4.5	11.6
23	1.4	S	2.9	3.2	4.1	3.9	6.0	2.9	4.5	5.9	19.6	11.7	4.8	1.7	4.1	7.0	11.6	3.2	6.5	8.7	4.7	5.9	13.7	4.8	6.2	19.6
24	3.0	S	4.4	8.8	3.7	3.9	4.5	2.6	7.8	4.9	9.7	4.9	2.9	3.5	1.5	2.1	3.8	1.3	4.0	2.2	3.6	6.5	4.8	4.2	4.3	9.7
25	4.1	S	3.0	3.8	2.8	1.4	4.4	4.0	3.6	2.7	2.3	1.7	1.2	1.1	1.7	1.5	1.7	0.9	1.8	2.0	0.7	1.4	2.8	12.2	2.7	12.2
26	2.3	S	2.2	3.5	1.1	0.9	0.7	5.5	5.6	6.3	3.0	2.9	2.9	5.1	6.9	4.9	6.8	4.9	4.0	8.4	3.0	9.2	12.0	3.9	4.6	12.0
27	4.0	S	2.4	4.4	2.9	5.9	9.7	9.6	5.0	5.6	5.4	7.2	3.5	2.3	3.4	2.5	5.0	4.4	3.6	5.7	19.1	8.8	4.6	4.6	5.6	19.1
28	4.9	S	6.3	10.2	4.0	7.7	5.4	4.0	8.2	6.8	4.9	7.1	6.0	3.6	2.8	5.7	3.3	9.9	3.9	8.9	10.1	13.1	10.0	4.6	6.6	13.1
29	5.2	S	4.0	4.5	4.4	7.6	5.9	8.9	8.3	6.0	8.0	10.0	6.8	7.9	11.3	9.0	12.8	13.0	15.1	15.1	17.5	15.7	15.2	13.4	9.8	17.5
30	13.6	S	6.0	7.6	10.8	16.3	14.4	14.5	38.4	27.0	46.5	14.1	5.2	9.5	8.7	6.7	9.6	4.1	3.3	3.2	3.1	3.2	8.6	5.9	12.2	46.5
31	14.4	S	32.3	12.6	44.1	19.7	25.2	33.4	37.4	19.4	22.2	21.8	17.8	10.5	11.5	10.4	10.5	9.6	6.6	6.2	6.1	5.3	5.6	7.3	17.0	44.1
NO.	31	-	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	708	100.0%
MEAN	9.9	-	9.1	9.4	8.2	7.1	8.2	8.9	10.2	10.0	11.2	9.4	8.6	7.2	6.2	6.1	6.9	7.0	7.0	8.7	8.4	9.3	9.0	8.1		
MAX	61.9	-	48.0	51.5	44.1	21.5	31.8	36.5	38.4	32.8	46.5	43.1	54.6	43.6	23.3	19.8	14.6	28.5	24.4	32.1	50.6	40.3	40.2	46.2		



Number of Non-Zero Readings	708		
Maximum 1-HR Average	61.9 PPB		
Maximum 24-HR Average	23.2 PPB		
		Operational Time	744 HRS
Monthly Calibration	5	Operational Uptime	100.0 %
Standard Deviation	8.463	Monthly Average	8.5 PPB

Lagoon NO (ppb) – December 2024

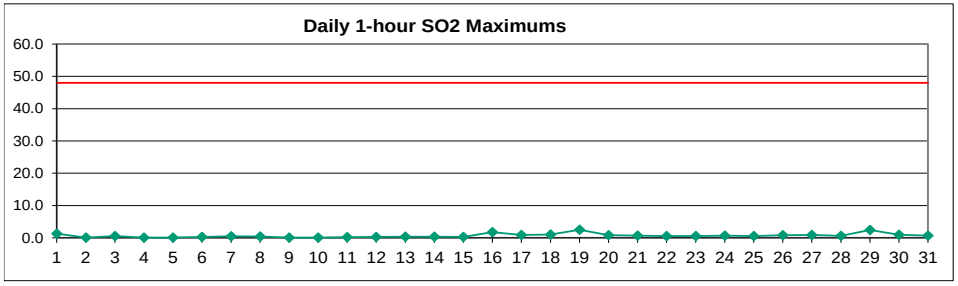
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	4.9	S	7.3	9.7	10.8	5.7	14.1	6.4	11.6	17.4	24.5	24.6	35.7	27.6	4.1	1.0	0.0	1.3	0.1	1.6	1.9	0.0	0.0	0.0	9.1	35.7
2	0.4	S	0.3	0.3	1.5	0.8	0.0	1.2	0.0	0.2	0.7	3.1	0.5	0.5	0.3	0.2	0.8	0.2	2.7	0.0	0.8	0.0	2.9	5.6	1.0	5.6
3	1.7	S	0.0	1.6	1.4	0.3	1.9	1.5	1.6	2.5	1.4	1.8	1.8	1.1	0.8	2.8	2.7	0.7	0.0	0.0	0.4	1.4	0.0	2.5	1.3	2.8
4	1.2	S	0.3	0.9	1.0	0.0	1.8	0.2	2.2	2.1	2.2	2.2	1.0	4.1	2.2	0.8	1.3	1.8	0.0	0.0	2.2	0.5	2.3	0.0	1.3	4.1
5	0.0	S	0.7	0.0	5.0	0.0	0.1	0.4	2.0	2.3	1.2	1.3	1.7	0.8	0.6	0.3	2.0	1.5	0.0	0.0	2.2	2.8	0.0	1.1	1.1	5.0
6	1.6	S	0.0	1.0	0.0	0.0	2.7	0.9	1.8	2.9	1.0	4.0	2.3	2.2	0.8	1.1	1.3	0.8	0.0	0.1	0.0	0.1	1.0	0.1	1.1	4.0
7	2.4	S	0.6	5.6	2.3	1.0	2.7	1.4	2.2	3.5	0.4	0.2	3.3	1.5	0.7	0.7	2.4	1.2	2.6	0.4	4.3	0.3	1.7	0.4	1.8	5.6
8	1.0	S	0.3	1.8	0.4	0.2	0.3	0.9	1.1	4.3	2.7	2.6	0.9	0.4	0.8	0.7	0.9	0.4	0.1	5.3	0.0	3.0	0.2	0.3	1.2	5.3
9	0.0	S	0.3	1.2	0.0	0.5	0.0	0.3	1.8	1.3	2.3	1.7	6.7	1.9	1.1	0.6	1.6	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.9	6.7
10	0.0	S	0.2	0.2	0.2	0.0	6.7	0.1	0.3	0.7	1.1	1.0	0.4	0.3	0.1	0.2	0.0	0.8	0.0	0.0	0.1	2.5	2.2	0.4	0.8	6.7
11	2.4	S	1.5	0.0	0.6	0.2	0.0	4.7	3.8	0.5	5.8	2.0	0.8	0.5	0.5	1.8	0.4	2.9	0.0	2.1	2.3	0.0	2.8	1.0	1.6	5.8
12	1.6	S	3.1	0.0	0.6	0.0	3.4	0.3	0.2	2.0	2.6	2.3	2.1	0.8	1.2	2.4	0.2	0.2	0.0	1.3	1.4	1.7	0.0	1.0	1.2	3.4
13	1.0	S	0.0	0.7	0.2	1.0	0.1	0.2	1.2	1.3	1.7	4.9	3.0	5.1	1.4	1.2	4.2	0.2	0.0	0.0	0.1	0.0	0.8	0.3	1.2	5.1
14	0.7	S	4.3	8.3	5.4	8.3	0.0	1.8	2.1	0.8	2.2	0.6	0.7	1.8	0.3	0.1	0.4	1.4	7.1	3.4	0.3	3.9	0.6	0.0	2.4	8.3
15	0.0	S	0.2	0.3	1.9	4.2	0.1	0.6	0.7	1.6	0.8	0.7	0.7	0.6	0.4	3.0	0.2	0.4	0.3	0.4	0.9	4.7	1.4	0.7	1.1	4.7
16	5.2	S	0.0	3.8	1.0	0.0	5.4	6.7	6.7	6.4	5.4	5.6	6.4	4.8	5.7	1.4	0.4	2.4	4.1	13.7	29.0	13.1	18.9	14.5	7.0	29.0
17	15.8	S	2.0	0.5	4.0	6.7	2.1	2.3	0.5	4.0	11.3	5.8	C	C	C	C	C	8.5	2.2	0.9	2.5	2.2	2.1	3.6	4.3	15.8
18	4.6	S	3.1	2.5	3.4	4.1	3.5	15.7	7.2	11.9	12.8	11.2	9.2	9.0	11.1	3.5	4.9	3.6	8.0	10.4	8.2	21.6	19.9	28.3	9.5	28.3
19	42.9	S	20.0	33.8	3.4	4.2	4.9	1.1	4.7	3.3	4.2	2.5	1.2	1.3	1.2	8.0	3.3	1.4	2.2	13.9	2.7	4.6	1.8	0.2	7.3	42.9
20	9.0	S	24.6	6.0	3.5	1.1	0.8	2.1	2.1	3.9	0.9	1.4	1.9	1.3	2.0	0.3	0.1	0.7	3.6	0.1	0.0	2.6	0.5	1.8	3.1	24.6
21	1.2	S	0.1	2.6	2.7	0.5	0.7	1.2	0.4	3.1	0.8	2.0	1.7	0.6	0.4	2.4	1.2	1.6	0.2	0.2	0.6	10.1	3.9	1.3	1.7	10.1
22	3.1	S	1.3	2.6	0.9	0.3	0.4	1.3	2.5	1.3	0.8	4.4	6.6	0.4	1.2	0.5	2.6	0.6	0.3	4.3	1.5	0.7	0.2	0.1	1.6	6.6
23	0.3	S	0.5	0.7	0.8	1.3	2.0	0.2	0.9	1.8	9.4	4.1	1.3	0.4	1.2	1.7	3.2	0.8	1.4	2.6	0.9	2.0	4.8	0.6	1.9	9.4
24	0.3	S	0.5	3.5	0.2	0.0	0.9	0.2	2.9	1.3	4.4	1.2	0.6	1.1	0.4	0.5	1.1	0.3	1.2	0.4	1.2	1.6	1.3	0.9	1.1	4.4
25	1.0	S	0.7	0.9	0.8	0.3	0.6	0.8	0.8	0.5	0.8	0.7	0.5	0.3	0.5	0.4	0.4	0.3	0.5	0.6	0.3	0.4	0.6	4.6	0.8	4.6
26	0.4	S	0.5	0.6	0.2	0.0	0.0	2.0	1.5	2.9	0.3	0.5	0.3	1.1	2.0	0.9	1.8	1.0	0.7	3.4	0.3	3.7	5.9	0.6	1.3	5.9
27	0.7	S	0.7	1.2	0.7	2.4	3.6	3.4	1.0	1.3	1.0	2.6	1.4	0.6	0.7	0.6	0.9	0.7	0.2	0.6	10.4	3.0	0.9	0.8	1.7	10.4
28	1.0	S	3.2	4.5	0.4	2.3	1.6	0.5	2.5	1.7	1.0	2.7	2.6	0.7	0.4	1.8	0.1	4.6	0.2	2.2	2.4	4.7	2.4	0.1	1.9	4.7
29	0.8	S	0.3	0.2	0.3	2.4	0.8	2.5	2.2	1.1	1.9	3.4	1.9	2.5	3.3	1.2	3.2	1.9	1.6	1.8	1.2	0.7	0.6	3.4	1.7	3.4
30	2.3	S	0.5	1.9	1.4	0.3	0.3	1.1	16.1	9.9	29.0	5.7	1.6	3.7	2.3	1.3	1.8	0.3	0.1	0.2	0.2	0.3	1.1	0.7	3.6	29.0
31	3.5	S	13.6	2.6	24.5	7.0	9.8	16.8	20.3	7.0	8.2	9.4	6.4	2.1	1.9	0.9	0.4	0.2	0.2	0.3	0.3	0.3	0.4	1.6	6.0	24.5
NO.	31	-	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	708	100.0%
MEAN	3.6	-	2.9	3.2	2.6	1.8	2.3	2.5	3.4	3.4	4.6	3.7	3.5	2.6	1.7	1.4	1.5	1.4	1.3	2.3	2.5	3.0	2.6	2.5		
MAX	42.9	-	24.6	33.8	24.5	8.3	14.1	16.8	20.3	17.4	29.0	24.6	35.7	27.6	11.1	8.0	4.9	8.5	8.0	13.9	29.0	21.6	19.9	28.3		



Number of Non-Zero Readings	657		
Maximum 1-HR Average	42.9 PPB		
Maximum 24-HR Average	9.5 PPB		
		Operational Time	744 HRS
Monthly Calibration	5	Operational Uptime	100.0 %
Standard Deviation	4.641	Monthly Average	2.6 PPB

Lagoon SO_2 (ppb) – December 2024

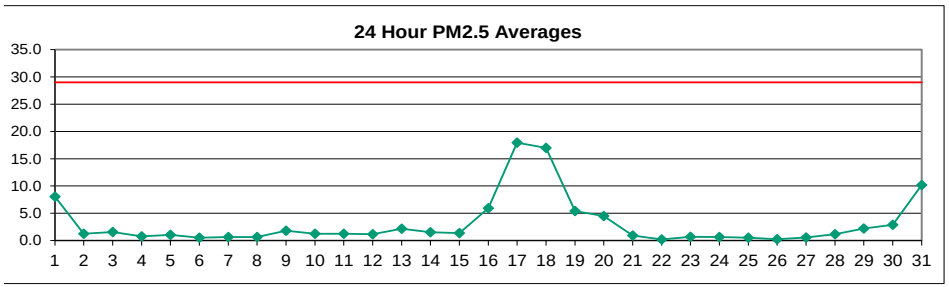
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	0.4	S	0.5	0.3	0.3	0.1	0.2	0.0	0.1	0.6	0.9	0.6	1.3	1.0	0.3	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.3	1.3
2	0.1	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
4	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
5	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.3
7	0.1	S	0.1	0.3	0.2	0.1	0.0	0.2	0.2	0.2	0.2	0.0	0.1	0.3	0.3	0.4	0.5	0.4	0.4	0.3	0.4	0.2	0.4	0.2	0.2	0.5
8	0.4	S	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4
9	0.0	S	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.1	S	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.2
12	0.0	S	0.1	0.0	0.0	0.1	0.2	0.0	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.3
13	0.2	S	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
14	0.2	S	0.0	0.3	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.2	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.0	0.3	0.4
15	0.1	S	0.1	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.3
16	0.1	S	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.2	0.3	0.5	0.8	1.4	1.4	1.8	0.3	1.8
17	0.9	S	0.3	0.4	0.5	0.4	0.6	0.4	0.4	0.4	0.8	0.6	C	C	C	C	0.3	0.5	0.4	0.1	0.3	0.3	0.3	0.4	0.4	0.9
18	0.5	S	0.3	0.4	0.4	0.4	0.3	0.7	0.5	0.7	0.8	0.8	0.9	1.0	0.9	0.8	0.6	0.5	0.5	0.4	0.5	0.6	0.7	0.9	0.6	1.0
19	1.3	S	0.8	2.5	0.3	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.3	0.2	0.2	0.5	0.2	0.2	0.1	0.2	0.4	2.5
20	0.5	S	0.8	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.8
21	0.5	S	0.2	0.4	0.4	0.3	0.2	0.2	0.3	0.2	0.1	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.7	0.6	0.5	0.3	0.7
22	0.5	S	0.2	0.3	0.4	0.5	0.3	0.3	0.3	0.2	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.4	0.3	0.5	0.4	0.3	0.4	0.4	0.4	0.5
23	0.3	S	0.2	0.3	0.3	0.4	0.4	0.1	0.3	0.5	0.4	0.5	0.4	0.4	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.4	0.4	0.2	0.3	0.5
24	0.2	S	0.1	0.2	0.3	0.3	0.5	0.7	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.6	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.6	0.4	0.7
25	0.5	S	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.6	0.6	0.5	0.4	0.6
26	0.5	S	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.7	0.7	0.8	0.5	0.7	0.6	0.6	0.7	0.5	0.7	0.6	0.6	0.6	0.8
27	0.7	S	0.7	0.5	0.6	0.5	0.4	0.2	0.6	0.6	0.4	0.6	0.9	0.7	0.7	0.6	0.7	0.4	0.3	0.5	0.7	0.5	0.6	0.4	0.5	0.9
28	0.5	S	0.5	0.5	0.5	0.5	0.6	0.5	0.4	0.5	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.6
29	0.4	S	0.2	0.3	0.4	0.4	0.3	0.4	0.5	0.4	0.3	0.3	0.4	0.7	0.8	1.0	1.8	2.2	2.5	1.8	1.6	1.1	0.9	1.0	0.9	2.5
30	0.9	S	0.5	0.6	0.5	0.3	0.2	0.3	0.5	0.3	0.8	0.5	0.2	0.2	0.1	0.3	0.1	0.2	0.2	0.5	0.5	0.5	0.5	0.2	0.4	0.9
31	0.3	S	0.3	0.4	0.7	0.3	0.3	0.4	0.5	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.4	0.7
NO.	31	-	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	709	100.0%
MEAN	0.3	-	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
MAX	1.3	-	0.8	2.5	0.7	0.6	0.6	0.7	0.6	0.7	0.9	0.8	1.3	1.0	0.9	1.0	1.8	2.2	2.5	1.8	1.6	1.4	1.4	1.8		



Number of 1HR Exceedences	0		
Number of Non-Zero Readings	567		
Maximum 1-HR Average	2.5 PPB		
Maximum 24-HR Average	0.9 PPB		
		Operational Time	744 HRS
Monthly Calibration	4	Operational Uptime	100.0 %
Standard Deviation	0.299	Monthly Average	0.3 PPB

Lagoon $PM_{2.5}$ ($\mu g/m^3$) – December 2024

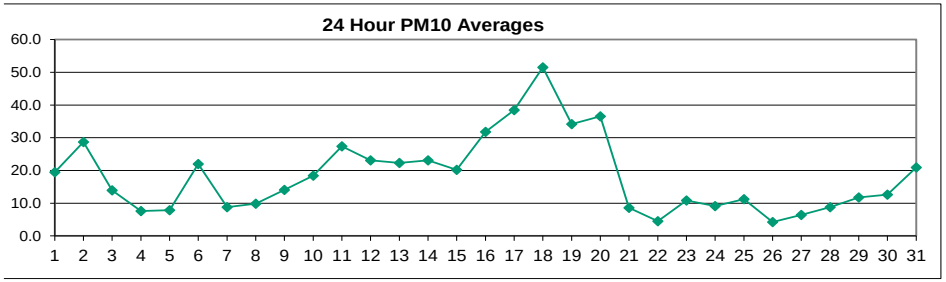
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	12.2	9.9	15.6	19.4	8.4	9.3	9.8	9.9	8.4	12.5	14.2	14.2	16.5	13.4	9.0	4.5	2.2	0.7	1.1	1.7	0.1	0.0	0.0	0.4	8.1	19.4
2	0.0	0.0	0.0	1.6	1.8	0.3	0.7	0.8	0.0	0.0	0.4	0.9	3.7	2.6	0.9	7.1	4.2	0.0	0.1	2.2	2.3	0.3	0.2	0.0	1.3	7.1
3	2.2	4.3	3.6	2.7	2.0	0.1	0.0	0.4	0.0	C	C	C	C	1.0	2.5	2.8	2.2	1.0	0.0	0.2	1.6	1.5	1.5	1.5	1.6	4.3
4	0.9	0.1	2.3	3.6	1.3	0.0	2.5	0.6	0.3	0.0	0.0	0.6	2.9	1.5	0.0	0.7	0.1	0.0	0.0	0.0	0.5	0.2	0.1	0.0	0.8	3.6
5	0.0	0.0	0.1	0.0	0.3	4.1	3.4	1.7	0.4	1.1	2.0	1.2	2.4	1.3	0.0	1.7	3.0	0.1	0.0	0.6	0.0	0.3	0.8	0.2	1.0	4.1
6	1.2	0.2	0.0	0.4	0.9	1.2	0.0	0.0	1.2	0.0	0.3	0.0	1.7	1.1	0.0	1.6	0.0	0.0	0.0	0.0	0.1	0.0	0.5	2.3	0.5	2.3
7	1.1	3.2	1.9	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.5	1.1	1.8	1.9	1.9	0.0	0.0	0.0	0.0	0.0	0.4	1.4	0.0	0.0	0.6	3.2
8	0.6	1.5	0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.0	1.0	2.2	0.0	0.0	0.0	0.5	0.0	0.0	2.5	2.9	0.7	0.0	0.5	2.2	0.6	2.9
9	1.0	0.6	2.8	0.0	0.0	0.0	0.5	2.3	0.0	0.0	0.0	2.7	1.1	8.6	4.5	0.9	3.4	5.5	3.8	0.9	0.0	0.0	2.5	2.3	1.8	8.6
10	1.6	0.0	0.0	1.0	0.0	0.5	1.6	2.1	2.4	1.7	2.9	5.7	4.9	3.4	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	5.7
11	0.0	0.0	0.0	0.0	0.8	1.6	1.0	4.1	3.2	0.6	0.1	4.1	4.1	1.3	2.9	1.8	0.0	0.6	1.7	0.9	0.9	0.0	0.0	0.8	1.3	4.1
12	0.0	2.1	2.7	1.8	0.5	0.0	0.0	0.0	1.5	2.4	1.1	2.5	2.5	1.3	0.0	0.3	1.3	0.0	0.0	2.6	2.1	1.8	1.8	0.0	1.2	2.7
13	0.0	0.8	2.8	1.7	1.6	4.5	4.2	0.0	0.0	0.0	0.0	1.2	3.5	7.1	5.2	4.7	3.8	1.8	0.7	0.0	2.4	0.8	0.8	4.5	2.2	7.1
14	3.2	5.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.5	0.0	3.1	4.9	2.5	1.8	1.0	0.0	1.3	3.1	1.4	0.0	1.1	0.8	1.5	5.4
15	0.0	0.0	0.7	0.6	0.0	0.0	0.7	0.5	4.9	2.8	0.0	0.0	0.6	1.2	8.8	6.1	2.6	2.2	0.0	0.0	0.0	0.3	0.0	0.4	1.3	8.8
16	0.7	0.0	0.0	0.0	1.1	1.1	0.4	0.0	0.1	1.8	1.7	1.6	3.9	7.4	6.0	5.6	4.1	3.1	4.8	10.2	16.4	21.8	24.3	26.8	5.9	26.8
17	26.4	27.1	23.5	21.6	18.9	16.2	13.1	10.9	17.8	13.5	11.0	15.4	14.7	16.2	17.9	17.7	19.3	19.3	22.1	19.5	19.1	16.7	16.8	16.5	18.0	27.1
18	20.2	17.4	14.1	18.3	18.0	18.8	19.5	18.6	14.4	13.5	13.6	14.4	12.6	17.3	19.9	22.1	18.7	20.0	19.2	14.7	17.6	12.0	18.7	14.7	17.0	22.1
19	16.7	17.9	16.4	17.2	22.8	6.1	2.7	1.7	1.5	0.0	5.3	4.9	1.6	0.0	0.0	2.6	2.5	0.7	3.1	1.2	3.9	0.7	0.0	0.0	5.4	22.8
20	1.8	2.5	26.6	24.2	11.9	8.9	7.8	3.1	2.6	1.9	1.0	1.0	0.9	0.8	0.2	2.9	1.3	0.0	0.0	0.3	2.7	4.3	1.1	0.0	4.5	26.6
21	1.9	3.2	1.0	0.0	0.0	0.0	0.0	4.4	3.8	0.6	2.1	2.5	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.9	4.4
22	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.6	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.6
23	1.7	0.6	0.6	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.1	0.6	0.6	0.0	0.0	2.4	1.2	0.0	0.3	0.0	0.0	1.6	0.7	2.6
24	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.8	1.4	2.8	4.0	1.9	0.0	0.0	0.0	0.0	1.1	1.4	1.1	0.0	0.0	0.0	0.0	0.7	4.0
25	0.2	1.7	1.0	1.0	0.3	0.4	0.0	0.0	0.7	1.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	2.4	2.7	0.1	0.0	0.8	0.0	0.0	0.5	2.7
26	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	1.5	1.0	0.0	0.5	0.0	0.7	0.0	0.6	0.4	0.0	0.0	0.2	1.5
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.9	0.3	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.5	2.3	2.8	2.4	1.1	0.0	0.6	2.8
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.7	0.3	1.0	1.1	3.8	4.6	3.4	1.2	4.3	4.1	1.6	0.6	0.1	0.0	1.2	4.6
29	0.0	1.9	1.8	1.2	1.4	2.0	3.3	1.5	0.0	0.0	0.4	1.1	0.0	0.0	0.0	6.8	7.9	5.2	3.7	3.4	3.0	3.2	2.8	2.7	2.2	7.9
30	1.6	5.0	5.5	3.7	4.1	3.0	0.4	0.5	3.0	4.2	4.0	1.7	0.0	0.0	1.3	4.1	2.9	1.5	4.4	5.3	3.5	2.1	4.7	3.3	2.9	5.5
31	4.8	4.0	2.2	4.4	7.9	9.4	8.1	10.6	13.4	13.6	15.4	18.3	18.8	16.5	15.0	14.8	12.6	11.0	7.9	10.8	7.4	5.5	5.3	6.3	10.2	18.8
NO.	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	740	100.0%
MEAN	3.2	3.5	4.1	4.0	3.4	2.8	2.6	2.4	2.7	2.6	2.8	3.5	3.6	3.6	3.4	3.8	3.2	2.6	2.8	2.8	2.9	2.5	2.8	2.8		
MAX	26.4	27.1	26.6	24.2	22.8	18.8	19.5	18.6	17.8	13.6	15.4	18.3	18.8	17.3	19.9	22.1	19.3	20.0	22.1	19.5	19.1	21.8	24.3	26.8		



Number of 24HR Exceedences	0		
Number of Non-Zero Readings	497		
Maximum 1-HR Average	27.1 UG/M3		
Maximum 24-HR Average	18.0 UG/M3		
		Operational Time	744 HRS
Monthly Calibration	4	Operational Uptime	100.0 %
Standard Deviation	5.382	Monthly Average	3.1 UG/M3

Lagoon PM_{10} ($\mu g/m^3$) – December 2024

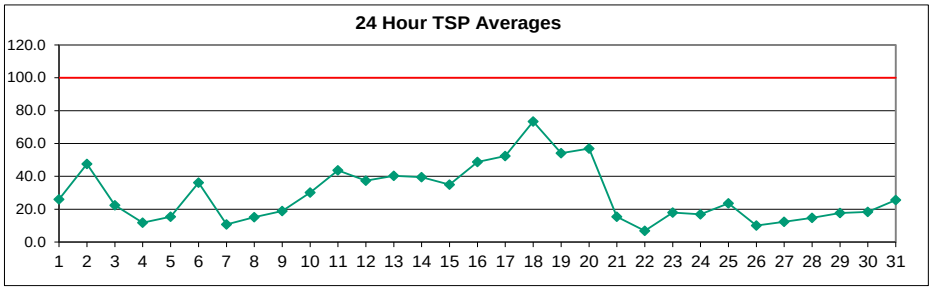
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	24.0	18.6	27.8	15.9	23.2	16.7	20.4	24.0	30.1	26.0	27.4	32.3	36.6	32.8	28.2	9.2	8.9	5.9	9.3	9.2	10.9	10.0	17.1	3.4	19.5	36.6
2	7.0	22.6	7.2	7.2	8.1	10.5	13.5	23.8	24.9	20.1	23.2	52.1	28.4	35.2	29.9	45.8	40.9	39.7	50.8	64.8	41.7	31.2	25.0	35.6	28.7	64.8
3	18.0	16.4	10.9	47.8	20.7	5.9	6.6	15.0	16.1	C	C	C	C	16.4	23.0	12.2	12.0	12.0	7.9	9.6	7.4	7.5	6.1	6.9	13.9	47.8
4	5.0	5.9	4.3	5.8	3.6	3.2	7.2	8.2	10.4	5.4	6.5	9.5	8.9	14.3	19.9	12.5	7.0	11.8	8.0	3.9	2.6	5.2	7.5	5.8	7.6	19.9
5	9.3	7.2	5.7	11.8	7.2	6.1	6.4	5.4	4.3	9.5	14.2	10.3	12.3	13.2	13.5	10.7	7.9	6.2	3.5	1.8	2.0	7.4	4.7	9.1	7.9	14.2
6	16.9	20.5	11.1	6.1	5.7	4.6	5.9	39.2	50.5	39.3	20.5	40.3	27.1	31.4	28.1	23.4	11.1	20.7	28.4	54.6	5.3	8.6	10.1	17.8	22.0	54.6
7	17.2	5.8	3.4	10.2	6.9	15.3	15.8	12.5	11.6	6.5	15.7	4.2	15.4	16.9	0.0	0.5	4.3	2.6	6.5	10.0	10.4	8.9	7.1	3.9	8.8	17.2
8	2.8	6.7	5.7	8.6	9.7	19.0	5.2	3.1	0.6	6.0	11.0	12.8	16.5	10.7	10.7	12.3	12.2	18.5	8.0	7.2	11.6	19.9	10.6	7.3	9.9	19.9
9	7.2	10.2	13.4	11.9	8.6	7.2	5.1	3.1	5.7	10.7	9.4	16.2	31.9	50.1	24.1	16.8	28.6	26.6	15.2	4.4	14.9	6.5	5.7	3.6	14.0	50.1
10	9.3	6.9	7.4	4.1	2.4	15.0	12.5	26.9	46.2	28.2	28.4	71.5	29.2	14.7	17.8	9.8	15.1	20.1	12.6	12.8	10.2	13.7	8.8	18.6	18.4	71.5
11	45.9	15.9	17.0	13.9	7.5	9.3	6.9	5.8	14.1	31.5	19.6	47.9	72.8	59.8	68.6	56.2	47.6	51.6	13.8	7.8	7.9	10.4	11.2	13.8	27.4	72.8
12	11.2	6.7	6.3	10.8	18.4	11.6	16.6	29.9	14.4	27.4	32.5	35.4	59.2	57.1	47.3	27.2	20.4	17.9	22.3	16.5	14.8	19.1	7.5	24.9	23.1	59.2
13	6.0	8.4	14.9	21.6	2.9	8.8	11.9	18.9	22.9	7.1	9.7	41.0	47.9	28.0	61.8	37.8	32.2	49.7	17.2	33.1	13.5	13.9	17.9	9.1	22.3	61.8
14	25.0	13.4	8.9	8.8	11.5	7.3	5.8	2.6	6.7	40.2	9.1	65.7	116.6	34.0	34.7	26.4	11.5	13.7	12.2	16.8	13.1	45.8	17.6	6.8	23.1	116.6
15	5.0	2.3	7.7	7.5	8.8	15.2	10.7	9.5	49.5	26.2	18.3	13.2	10.9	57.3	140.3	42.3	9.4	4.6	4.1	6.2	10.3	14.0	4.7	7.1	20.2	140.3
16	12.3	9.1	6.0	9.4	7.6	7.6	7.9	5.4	12.8	29.3	35.0	49.1	47.6	50.0	35.0	40.4	46.3	41.5	47.4	57.7	59.0	58.2	29.1	59.7	31.8	59.7
17	48.6	48.6	42.1	47.5	44.4	49.1	39.1	28.0	26.5	30.7	17.1	40.1	54.6	32.1	44.2	48.0	31.2	48.6	38.0	40.6	36.8	29.0	30.4	27.7	38.5	54.6
18	33.1	43.3	30.2	34.6	41.5	39.0	39.3	34.7	35.6	35.0	40.9	46.1	58.9	87.4	49.1	59.8	33.3	63.7	63.5	57.9	64.2	82.2	98.0	65.6	51.5	98.0
19	47.3	64.5	45.0	38.9	133.0	26.6	3.9	39.5	19.5	54.3	15.8	15.8	16.8	17.5	16.9	28.6	18.9	29.4	31.9	34.1	35.4	38.5	23.6	25.2	34.2	133.0
20	62.2	21.4	47.8	45.1	18.2	111.0	196.8	18.3	19.3	24.8	18.0	10.6	12.6	17.9	18.8	23.8	27.1	19.8	32.0	26.9	19.7	48.2	14.3	22.2	36.5	196.8
21	16.4	8.3	12.6	6.9	2.2	8.7	8.2	8.7	8.9	5.1	2.9	8.1	5.1	3.8	8.5	6.4	8.4	9.0	6.2	3.6	13.2	24.7	15.3	4.7	8.6	24.7
22	7.3	5.2	6.7	4.6	4.8	4.3	6.9	2.5	0.0	3.4	1.2	5.2	5.5	3.6	1.0	7.5	4.6	3.3	7.0	6.3	4.5	2.6	4.6	4.8	4.5	7.5
23	4.3	7.8	39.1	13.6	10.3	4.7	3.4	7.7	5.6	4.9	9.9	9.2	13.9	14.3	5.3	4.5	19.9	21.0	12.2	12.0	10.7	9.8	7.4	8.7	10.8	39.1
24	8.1	8.0	9.0	5.3	3.9	7.5	3.5	3.0	16.5	13.5	9.2	6.2	13.8	7.6	7.0	12.5	8.2	35.0	6.2	17.6	2.4	2.9	2.4	9.6	9.1	35.0
25	8.5	13.0	37.8	15.6	21.2	0.0	2.6	3.8	3.0	8.7	5.3	7.4	10.8	16.6	14.6	32.6	18.4	18.1	9.1	5.9	4.8	0.7	0.0	10.3	11.2	37.8
26	8.1	1.5	0.0	5.1	3.5	0.0	0.4	4.3	7.1	9.7	6.0	2.7	3.7	6.2	12.4	7.4	4.7	5.6	3.4	1.9	1.1	2.1	2.0	2.2	4.2	12.4
27	0.6	2.3	3.2	4.5	4.7	22.3	1.9	3.2	3.9	10.3	7.4	11.9	10.0	6.9	4.2	6.3	7.7	6.2	10.9	5.6	6.6	1.8	6.7	4.2	6.4	22.3
28	5.3	3.8	3.8	3.3	1.6	4.0	7.6	9.0	6.7	10.3	7.8	6.1	12.7	14.9	22.7	23.0	19.4	13.8	15.6	3.9	5.5	3.4	2.8	3.5	8.8	23.0
29	8.0	6.5	2.6	7.1	6.3	5.6	6.9	10.2	5.4	11.7	6.0	1.7	9.6	16.7	3.2	14.0	18.8	6.1	18.3	21.9	33.6	20.2	23.4	17.9	11.7	33.6
30	22.8	29.4	33.2	7.9	19.9	13.7	13.4	13.2	14.6	24.9	11.1	16.6	8.8	6.9	9.1	5.9	5.8	5.4	7.7	6.7	5.0	4.9	7.4	8.3	12.6	33.2
31	7.7	8.5	7.5	15.9	20.5	23.0	19.6	25.8	17.4	25.2	23.4	32.1	29.8	28.4	27.2	19.3	24.0	23.9	34.8	26.4	22.6	13.5	19.7	6.6	21.0	34.8
NO.	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	740	100.0%
MEAN	16.5	14.5	15.4	14.7	15.8	15.6	16.5	14.4	16.5	19.5	15.4	24.0	27.6	25.9	26.7	22.0	18.3	21.0	18.2	19.0	16.2	18.2	14.5	14.7		
MAX	62.2	64.5	47.8	47.8	133.0	111.0	196.8	39.5	50.5	54.3	40.9	71.5	116.6	87.4	140.3	59.8	47.6	63.7	63.5	64.8	64.2	82.2	98.0	65.6		



Number of Non-Zero Readings	735		
Maximum 1-HR Average	196.8 UG/M3		
Maximum 24-HR Average	51.5 UG/M3		
		Operational Time	744 HRS
Monthly Calibration	4	Operational Uptime	100.0 %
Standard Deviation	18.71	Monthly Average	18.4 UG/M3

Lagoon TSP (µg/m^3) – December 2024

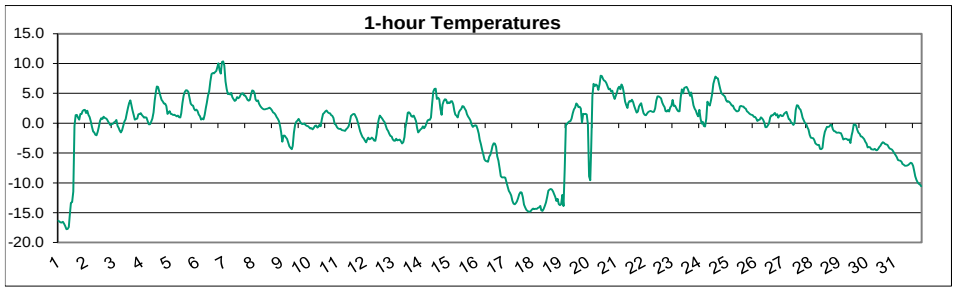
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	24.2	24.7	26.5	19.7	27.0	18.8	24.3	36.6	29.2	38.2	33.5	34.8	52.3	49.9	38.2	26.5	17.5	14.8	13.8	10.6	18.7	11.9	23.9	9.1	26.0	52.3
2	16.4	34.5	16.8	14.0	14.6	22.2	29.4	32.2	41.1	29.1	41.5	80.0	48.8	62.1	43.8	68.6	84.4	66.4	82.8	102.4	66.8	44.5	41.4	57.4	47.5	102.4
3	43.2	36.8	24.4	81.6	31.7	9.6	17.2	11.7	28.0	C	C	C	C	24.9	20.6	22.8	27.2	8.6	13.7	9.7	8.6	11.9	7.5	8.8	22.4	81.6
4	14.4	10.4	4.6	10.2	9.1	6.5	7.2	9.0	11.9	18.2	10.2	7.2	7.6	11.5	27.5	25.4	20.3	20.7	14.9	7.2	5.8	7.0	7.8	10.2	11.9	27.5
5	24.4	5.1	3.7	9.1	14.2	9.0	10.5	12.3	10.8	15.0	15.8	31.5	12.1	17.4	21.9	30.3	24.8	13.8	13.5	13.7	8.7	17.8	12.9	21.8	15.4	31.5
6	27.8	42.6	27.9	12.0	10.2	8.2	10.3	88.6	98.4	64.0	40.6	56.9	43.8	34.4	26.8	24.2	21.7	30.9	47.3	78.0	9.9	13.9	23.1	28.1	36.2	98.4
7	22.5	5.5	3.1	3.4	6.0	19.0	14.0	14.3	12.4	8.7	8.6	16.1	15.5	15.9	6.0	3.8	3.5	2.1	11.7	10.9	21.9	11.7	11.9	9.1	10.7	22.5
8	4.9	11.0	10.8	14.7	10.4	23.1	13.3	16.3	17.1	18.7	10.3	15.6	20.4	9.7	7.8	12.0	13.9	25.1	19.8	7.3	12.6	34.8	20.4	12.5	15.1	34.8
9	15.4	19.5	15.3	1.6	7.2	6.5	4.6	6.3	11.7	12.0	14.0	31.1	45.6	77.9	31.4	20.9	38.9	27.5	19.6	10.7	11.7	10.9	6.5	6.0	18.9	77.9
10	10.6	13.2	8.0	8.4	6.2	18.3	17.9	48.5	88.5	45.2	53.9	114.2	39.4	30.1	24.8	16.2	22.8	27.0	31.8	15.3	13.0	11.4	23.4	36.9	30.2	114.2
11	55.8	21.1	26.3	20.0	5.5	8.2	8.1	14.9	23.5	40.1	30.3	73.5	108.3	98.9	121.1	105.2	81.9	89.7	25.8	18.4	12.7	24.6	17.8	17.8	43.7	121.1
12	4.6	9.0	8.0	21.1	10.2	11.8	16.5	55.4	31.3	42.0	54.1	56.8	111.1	88.8	83.9	47.7	35.0	33.8	32.3	20.2	30.0	35.0	17.5	40.9	37.4	111.1
13	15.1	7.1	15.2	36.3	6.1	14.5	15.6	32.1	36.2	16.9	11.4	79.9	87.1	49.4	138.1	72.9	58.6	98.1	27.2	56.6	29.0	20.0	28.2	15.3	40.3	138.1
14	44.3	16.9	9.3	16.2	8.9	9.9	6.2	3.4	13.7	54.2	18.3	138.8	234.7	63.7	70.1	37.0	16.6	11.0	24.5	24.5	24.0	68.9	22.8	10.7	39.5	234.7
15	12.9	7.2	7.7	5.6	7.9	18.5	14.2	13.2	54.3	46.7	41.8	31.0	25.7	115.4	243.7	71.5	30.4	16.5	5.6	10.6	16.4	21.9	9.5	11.5	35.0	243.7
16	15.1	5.1	7.0	23.9	10.2	9.4	5.8	4.4	20.9	43.5	38.3	63.6	75.4	86.4	71.9	58.0	93.4	62.2	83.2	97.1	90.7	94.1	47.6	64.0	48.8	97.1
17	53.8	66.7	54.0	61.0	67.7	73.0	66.3	32.2	41.2	45.9	35.7	44.8	32.9	69.5	78.8	92.4	50.0	75.3	47.5	45.4	37.1	28.6	27.9	28.3	52.3	92.4
18	39.2	73.4	39.7	35.7	44.7	40.5	38.5	44.0	51.0	45.5	62.1	72.2	121.3	139.1	76.7	91.4	45.2	81.4	88.2	88.7	84.6	124.2	156.1	77.4	73.4	156.1
19	63.9	96.1	55.6	44.9	193.4	30.8	11.2	68.4	41.7	73.3	33.9	40.0	31.6	29.5	32.7	37.3	35.0	43.9	47.7	56.8	50.8	78.1	51.6	52.1	54.2	193.4
20	105.1	33.9	69.6	62.9	22.7	166.5	257.2	39.1	26.1	49.5	28.6	22.8	22.9	30.2	30.6	31.7	51.7	26.5	57.2	40.8	26.2	85.7	34.5	45.0	57.0	257.2
21	24.8	25.5	12.7	10.5	10.9	6.4	12.4	20.0	14.2	10.0	8.0	7.1	10.8	10.6	18.2	6.4	12.7	12.0	8.6	13.0	26.2	40.3	25.6	22.6	15.4	40.3
22	15.2	10.0	8.0	5.3	5.6	5.9	12.2	7.9	11.7	8.7	4.8	5.6	5.8	4.8	5.0	2.1	1.2	7.1	11.6	6.0	1.4	3.6	4.7	11.0	6.9	15.2
23	9.1	5.4	67.8	27.1	21.9	12.7	9.8	10.7	8.1	12.3	13.3	24.2	23.2	17.1	12.6	16.5	25.6	31.5	13.6	18.5	10.4	17.2	9.6	12.7	18.0	67.8
24	13.0	13.7	11.2	8.3	8.5	6.9	2.7	10.4	33.4	25.1	19.9	18.5	28.2	14.6	15.0	23.6	13.3	56.8	19.1	18.3	13.0	11.5	8.1	12.8	16.9	56.8
25	29.3	22.3	52.0	40.9	40.4	14.6	4.8	4.9	8.2	22.9	2.4	16.8	12.7	25.2	26.8	64.3	56.7	44.7	23.7	9.1	12.2	11.4	5.7	12.8	23.5	64.3
26	15.3	12.5	8.6	13.5	7.9	4.0	10.5	7.1	8.6	16.0	10.5	7.5	9.3	11.6	16.4	16.0	8.8	10.5	10.9	6.0	16.4	5.3	4.6	3.3	10.0	16.4
27	1.7	7.5	9.2	6.7	4.4	26.0	15.0	8.0	11.1	16.0	8.3	36.1	22.4	14.2	12.1	15.1	3.7	9.9	16.6	5.9	15.0	11.2	12.0	9.6	12.4	36.1
28	12.9	9.9	4.5	2.4	6.4	16.1	15.3	13.5	8.2	6.1	9.2	10.7	20.8	23.5	34.5	33.6	19.2	24.5	28.4	10.8	15.0	12.4	7.5	7.3	14.7	34.5
29	9.1	5.3	5.3	3.5	1.5	9.0	6.0	4.4	5.7	15.1	2.2	9.6	16.8	14.1	18.3	27.9	27.7	17.1	29.5	35.6	53.0	30.6	39.8	36.3	17.6	53.0
30	30.1	40.8	55.1	22.5	20.7	13.8	16.6	12.3	15.3	43.9	18.4	23.1	10.5	7.4	15.8	17.5	8.5	7.6	13.9	7.0	6.1	8.1	16.0	9.1	18.3	55.1
31	16.5	24.1	17.8	27.0	17.9	22.3	22.5	24.4	18.9	19.9	24.9	30.6	31.1	19.6	21.3	22.3	26.8	23.7	51.9	46.9	37.5	19.5	28.5	19.5	25.6	51.9
NO.	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	740	100.0%
MEAN	25.5	23.1	22.1	21.6	21.3	21.3	23.1	22.8	26.8	30.1	23.5	40.0	44.3	40.9	44.9	36.8	31.5	32.9	30.2	29.1	25.3	29.9	24.3	23.2		
MAX	105.1	96.1	69.6	81.6	193.4	166.5	257.2	88.6	98.4	73.3	62.1	138.8	234.7	139.1	243.7	105.2	93.4	98.1	88.2	102.4	90.7	124.2	156.1	77.4		



Number of 24HR Exceedences	0		
Number of Non-Zero Readings	740		
Maximum 1-HR Average	257.2	UG/M3	
Maximum 24-HR Average	73.4	UG/M3	
		Operational time	744 HRS
Monthly Calibration	4	Operational Uptime	100.0 %
Standard Deviation	29.6	Monthly Average	28.9 UG/M3

Lagoon Temperature (°C) – December 2024

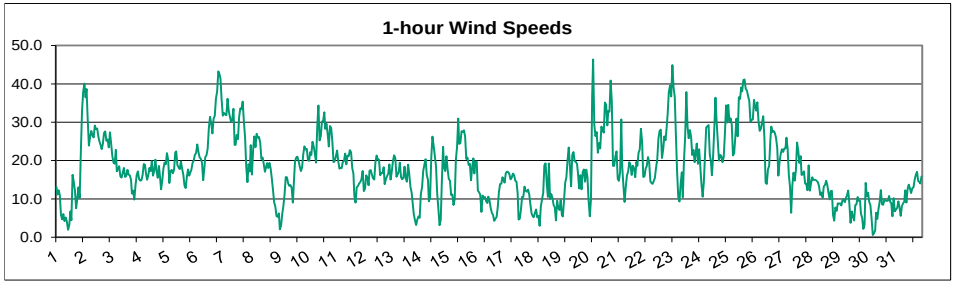
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	-16.3	-16.5	-16.6	-16.7	-16.5	-16.8	-17.3	-17.8	-17.7	-17.4	-15.5	-13.3	-13.2	-11.5	-0.5	1.4	1.4	0.9	0.6	1.5	1.5	2.0	2.2	2.2	-8.7	2.2
2	1.7	2.1	1.4	1.0	0.3	-0.6	-1.4	-1.5	-1.9	-2.0	-1.4	-0.6	0.4	0.8	0.7	1.1	0.9	0.8	0.6	0.3	-0.1	-0.3	-0.2	-0.1	0.1	2.1
3	0.2	0.3	0.5	-0.4	-0.8	-1.2	-1.6	-1.2	-0.4	0.3	0.7	1.7	2.6	3.4	3.8	3.1	2.2	1.4	0.6	0.7	0.8	1.5	1.5	1.7	0.9	3.8
4	1.4	1.2	0.9	1.0	0.9	0.4	-0.2	-0.2	0.2	0.8	1.8	3.8	5.3	6.2	6.1	5.3	4.6	3.9	3.7	3.3	3.3	2.9	1.6	1.8	2.5	6.2
5	2.0	1.5	1.5	1.4	1.4	1.3	1.1	1.3	1.0	1.0	1.6	3.4	4.6	5.2	5.5	5.5	5.2	4.3	3.3	3.0	2.9	2.4	2.1	2.3	2.7	5.5
6	2.0	1.4	1.2	0.6	0.8	0.6	1.4	2.6	3.4	4.6	5.3	7.0	8.2	8.4	8.3	8.6	8.7	9.4	10.0	8.9	8.3	10.3	10.4	9.7	5.8	10.4
7	7.0	5.7	4.9	5.0	4.8	5.1	4.4	4.0	3.7	3.9	4.4	4.2	4.4	4.7	5.0	5.0	4.7	4.6	4.3	3.9	3.8	3.9	4.8	5.5	4.6	7.0
8	5.4	5.0	4.0	3.7	3.8	3.2	2.9	2.6	2.4	2.3	2.3	2.4	2.4	2.5	2.6	2.4	2.2	1.8	1.7	1.4	1.0	0.7	0.3	-0.6	2.4	5.4
9	-1.5	-3.1	-2.1	-2.1	-2.4	-2.6	-3.3	-3.9	-4.1	-4.4	-3.8	-1.6	-0.3	0.3	0.4	0.7	0.3	0.0	-0.2	-0.1	-0.1	-0.3	-0.4	-0.5	-1.5	0.7
10	-0.7	-0.9	-0.8	-1.0	-0.8	-0.4	-0.4	-0.7	-0.6	-0.3	-0.5	0.6	1.5	1.7	2.0	2.1	1.8	1.7	1.7	1.4	1.3	0.9	-0.1	-0.2	0.4	2.1
11	-0.7	-0.9	-1.0	-0.9	-1.2	-1.2	-1.2	-1.3	-1.0	-0.8	-0.5	0.2	1.2	1.4	1.5	1.5	1.2	0.8	0.2	-0.6	-1.4	-1.9	-2.3	-2.6	-0.5	1.5
12	-2.9	-3.2	-2.7	-2.4	-2.7	-2.6	-2.4	-2.6	-2.9	-3.0	-1.9	-0.2	0.7	1.3	1.0	0.8	0.4	0.2	-0.4	-1.0	-1.3	-1.8	-2.1	-2.2	-1.4	1.3
13	-2.7	-2.9	-3.0	-2.6	-2.9	-2.8	-2.8	-3.1	-3.4	-3.2	-2.3	-0.7	0.3	1.7	1.8	1.6	1.2	1.1	1.3	0.8	0.3	-0.7	-1.5	-1.3	-1.1	1.8
14	-1.0	-0.9	-0.5	-0.8	-0.5	-0.1	0.5	0.6	0.6	0.9	3.3	5.3	5.8	5.8	4.0	4.3	4.0	2.4	1.4	3.1	3.7	4.0	4.0	3.3	2.2	5.8
15	3.5	3.3	3.7	3.7	3.2	2.0	1.4	1.2	0.9	1.9	2.2	2.4	2.9	2.8	2.4	2.1	1.5	1.1	0.8	0.4	-0.2	-0.6	-0.4	-0.3	1.7	3.7
16	-0.4	-1.0	-1.8	-2.8	-3.5	-4.4	-5.2	-6.1	-6.3	-6.4	-6.5	-5.6	-5.3	-4.5	-3.8	-3.4	-3.4	-4.0	-5.5	-6.3	-7.5	-8.9	-9.1	-9.1	-5.0	-0.4
17	-9.1	-9.1	-9.9	-10.6	-11.3	-11.7	-12.1	-13.0	-13.5	-13.6	-13.4	-13.1	-12.6	-11.9	-11.6	-11.6	-12.4	-13.6	-14.1	-14.5	-14.7	-14.8	-14.8	-14.7	-12.6	-9.1
18	-14.4	-14.3	-14.4	-14.3	-14.4	-14.2	-14.1	-13.9	-14.6	-14.7	-14.4	-13.9	-13.3	-12.3	-11.3	-11.1	-11.0	-11.1	-11.5	-11.9	-12.3	-13.0	-12.7	-13.6	-13.2	-11.0
19	-13.8	-13.6	-12.0	-13.9	-7.8	-0.2	-0.2	0.1	0.3	0.3	0.8	1.7	2.3	2.6	3.3	3.1	2.7	2.7	2.5	0.1	1.6	1.5	1.6	1.5	-1.4	3.3
20	-0.2	-8.9	-9.6	-4.1	4.5	6.6	6.2	6.5	6.3	5.6	6.5	8.0	7.9	7.4	7.2	7.1	6.7	6.2	5.7	5.8	5.3	5.5	4.6	4.1	4.2	8.0
21	4.6	5.1	5.8	6.1	5.7	6.5	6.1	5.0	3.6	3.0	2.6	3.4	3.7	3.6	4.0	3.5	2.8	2.3	1.8	1.9	2.8	3.2	3.4	2.5	3.9	6.5
22	1.7	1.4	1.3	1.6	1.9	2.0	2.1	1.9	1.9	1.9	2.5	3.8	4.5	4.5	4.3	4.1	3.5	3.0	2.7	2.0	1.9	2.2	2.0	2.7	2.6	4.5
23	2.9	3.9	2.9	3.0	2.5	2.2	2.0	2.0	4.3	5.7	5.0	5.9	6.0	6.1	5.7	5.1	4.6	5.2	4.1	3.0	2.4	2.1	1.5	1.1	3.7	6.1
24	2.2	0.7	-0.1	0.3	-0.5	-0.6	0.7	3.6	3.2	2.9	3.8	4.9	6.6	7.4	7.8	7.6	7.5	6.6	5.8	5.0	4.8	4.6	4.5	3.8	3.9	7.8
25	3.6	3.7	3.5	3.3	2.9	3.0	2.4	2.2	2.0	2.0	2.1	2.8	2.9	2.8	2.8	2.6	2.4	2.0	1.8	1.6	1.5	1.4	1.4	1.1	2.4	3.7
26	1.0	0.8	0.4	0.6	0.6	1.0	0.8	0.5	0.0	-0.7	-0.7	-0.4	-0.1	0.9	1.3	1.3	1.5	1.7	1.3	1.5	0.9	1.3	1.4	1.2	0.8	1.7
27	1.2	1.6	1.8	1.9	1.3	0.7	0.6	0.2	0.0	-0.3	0.0	2.2	3.0	3.0	2.5	2.3	1.6	0.9	0.5	0.0	-0.1	-0.7	-1.1	-2.0	0.9	3.0
28	-2.4	-2.5	-2.5	-2.9	-3.4	-3.5	-3.7	-3.6	-4.3	-4.3	-4.1	-2.5	-1.5	-1.0	-0.6	-0.6	-0.6	-0.3	-0.3	-1.0	-1.3	-1.4	-1.6	-1.6	-2.1	-0.3
29	-1.5	-1.6	-1.7	-2.1	-2.7	-2.6	-2.6	-2.7	-2.8	-2.7	-3.3	-2.1	-1.4	-0.2	-0.2	-0.4	-1.1	-1.6	-1.8	-2.2	-2.3	-2.5	-2.7	-3.1	-2.0	-0.2
30	-3.4	-4.1	-4.0	-4.0	-4.4	-4.4	-4.4	-4.3	-4.5	-4.5	-4.3	-4.0	-3.8	-3.4	-3.2	-3.3	-3.5	-3.6	-3.7	-4.0	-4.3	-4.3	-4.5	-4.7	-4.0	-3.2
31	-5.1	-5.3	-5.7	-6.2	-6.3	-6.3	-6.5	-6.8	-6.9	-7.1	-7.2	-7.1	-7.0	-6.8	-6.6	-6.7	-7.2	-7.9	-8.9	-9.5	-9.9	-10.1	-10.3	-10.6	-7.4	-5.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100.0%
MEAN	-1.2	-1.7	-1.8	-1.8	-1.5	-1.4	-1.5	-1.6	-1.7	-1.6	-1.1	0.0	0.6	1.1	1.5	1.5	1.1	0.7	0.3	0.0	-0.2	-0.4	-0.5	-0.7		
MAX	7.0	5.7	5.8	6.1	5.7	6.6	6.2	6.5	6.3	5.7	6.5	8.0	8.2	8.4	8.3	8.6	8.7	9.4	10.0	8.9	8.3	10.3	10.4	9.7		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	10.4 C		
Maximum 24-HR Average	5.8 C		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	5.319	Monthly Average	-0.5 C

Lagoon Wind Speed (km/hr) – December 2024

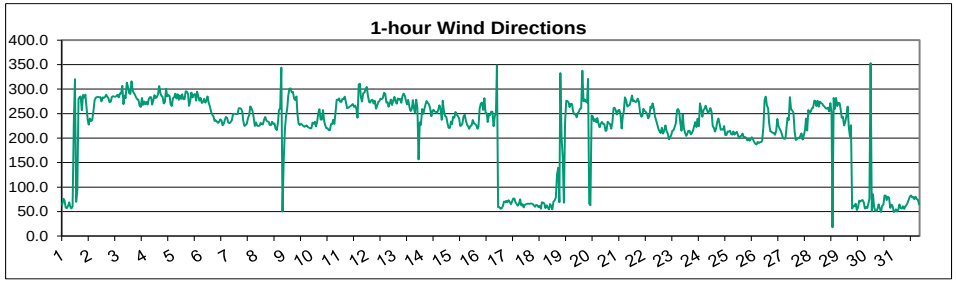
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	13.1	11.1	12.2	11.1	5.9	4.6	6.1	4.2	5.2	4.0	1.9	3.2	6.7	4.4	16.3	14.4	12.1	7.6	10.1	13.1	10.2	22.3	33.0	38.0	11.3	38.0
2	40.1	36.5	38.6	30.7	23.9	26.2	27.7	26.6	26.0	29.1	28.2	28.3	26.3	24.9	23.9	23.0	24.3	27.2	27.6	25.1	25.5	23.4	27.4	24.5	27.7	40.1
3	21.2	19.4	19.2	22.8	17.2	17.7	18.6	15.9	15.5	16.8	18.1	15.7	16.0	17.6	16.3	16.1	15.0	11.3	12.2	9.8	13.6	16.2	17.2	15.2	16.4	22.8
4	14.7	14.9	16.2	19.1	18.9	16.7	15.0	16.1	18.1	17.2	19.8	16.0	17.4	20.2	17.2	15.5	18.6	15.5	12.5	14.8	17.9	19.5	19.0	21.9	17.2	21.9
5	20.2	14.1	17.3	17.6	16.7	17.6	22.1	22.4	18.8	18.3	17.7	19.8	17.9	16.4	13.5	12.8	15.7	17.7	16.0	17.0	17.6	19.3	20.0	21.5	17.8	22.4
6	21.9	24.2	22.2	20.8	20.5	19.5	14.9	18.0	20.9	21.4	23.2	28.4	31.4	29.8	27.0	30.9	31.7	36.2	38.0	43.3	42.5	41.4	35.8	31.7	28.2	43.3
7	32.4	32.0	31.8	36.1	33.0	31.4	30.1	30.7	33.5	24.1	24.1	26.7	25.6	31.4	33.6	33.3	35.4	30.1	26.1	18.4	14.4	19.1	17.1	24.1	28.1	36.1
8	16.3	22.7	26.3	23.5	27.0	26.0	26.1	24.7	20.4	20.8	19.1	17.0	18.0	19.4	18.0	19.4	18.0	15.4	12.4	9.1	8.0	5.5	5.3	6.2	17.7	27.0
9	2.1	3.0	6.0	8.2	11.2	15.7	15.7	14.1	13.4	13.6	12.9	9.0	15.1	19.7	20.7	21.1	20.0	18.5	17.2	18.2	21.7	23.7	22.9	23.0	15.3	23.7
10	20.0	19.9	22.2	21.5	24.9	23.7	21.9	19.4	28.7	34.4	25.2	26.4	30.2	30.4	32.6	28.2	29.6	27.0	23.7	29.0	28.5	24.9	19.6	19.9	25.5	34.4
11	21.1	22.6	19.7	17.9	18.2	18.0	19.6	19.8	21.8	19.0	21.3	21.2	22.7	22.2	18.0	16.5	10.7	9.0	13.1	13.3	14.0	14.4	15.1	17.3	17.8	22.7
12	12.0	12.7	16.2	15.5	13.5	17.3	17.5	16.3	15.4	15.1	19.6	21.3	20.3	20.2	16.2	16.8	16.7	18.3	13.9	15.1	15.9	16.6	19.0	15.0	16.5	21.3
13	17.1	19.9	21.4	20.7	15.8	16.4	17.2	19.5	15.7	15.1	15.5	18.5	15.3	14.4	18.9	16.5	13.1	11.7	8.6	6.1	4.4	3.2	4.6	5.5	14.0	21.4
14	5.0	11.3	13.0	17.3	18.9	20.3	16.2	15.0	9.4	10.3	20.7	26.3	23.9	21.2	18.6	11.4	7.5	3.2	4.5	15.1	23.6	18.2	17.2	21.2	15.4	26.3
15	17.7	15.2	14.8	11.0	11.2	8.4	9.9	20.3	23.6	31.0	24.3	24.6	27.6	27.4	27.9	26.3	20.4	20.8	18.8	19.1	14.8	18.3	20.6	16.6	19.6	31.0
16	19.8	19.7	12.1	11.8	11.0	6.6	10.9	10.1	10.5	9.3	8.9	10.6	9.6	7.7	6.4	5.8	4.2	4.9	5.3	7.8	11.9	13.9	13.9	15.7	10.4	19.8
17	15.1	14.3	16.8	17.1	17.0	16.5	15.1	15.5	16.6	16.2	14.7	14.5	11.5	4.6	4.8	7.2	10.6	10.5	13.2	12.1	11.8	12.4	11.2	8.5	12.8	17.1
18	6.2	5.5	5.3	6.3	7.3	5.2	5.6	2.9	8.0	9.9	11.5	18.8	19.3	14.1	10.5	19.3	10.0	11.3	10.3	8.4	7.8	4.4	9.5	7.6	9.4	19.3
19	7.1	9.7	5.8	5.4	9.5	14.2	15.6	20.1	23.4	18.4	13.3	21.5	22.2	19.8	19.7	19.1	16.8	12.7	16.2	12.5	17.0	17.7	14.5	17.6	15.4	23.4
20	15.7	9.5	5.5	10.0	37.0	46.4	29.3	26.4	27.4	22.0	24.5	23.2	28.9	27.9	27.3	35.2	34.6	29.1	32.9	32.7	40.9	35.3	18.6	18.6	26.6	46.4
21	21.1	22.4	15.2	14.7	16.9	30.7	18.4	13.5	9.2	13.1	16.1	17.1	19.5	18.8	16.2	18.7	18.0	15.6	19.6	18.6	22.0	22.9	28.3	25.0	18.8	30.7
22	15.7	15.8	17.9	18.6	20.9	19.5	14.6	14.1	13.9	14.6	15.5	18.2	20.3	25.7	27.7	28.1	20.7	22.8	26.3	25.3	28.8	32.1	37.9	39.5	22.3	39.5
23	36.7	44.9	39.1	36.6	26.4	16.9	10.4	9.3	14.0	16.9	10.4	19.9	26.2	37.9	28.9	25.8	28.0	26.3	21.4	22.8	19.5	22.2	24.4	19.1	24.3	44.9
24	23.0	18.5	13.8	10.6	14.4	21.6	28.6	29.0	29.3	21.7	19.7	16.2	21.0	28.1	36.4	30.1	25.0	19.9	21.5	21.2	19.6	21.0	27.0	34.4	23.0	36.4
25	29.9	34.5	30.2	31.0	29.3	21.3	21.8	26.2	31.0	26.3	36.5	36.0	39.1	38.1	41.0	41.2	38.7	38.3	36.8	35.5	30.1	30.7	30.7	35.8	32.9	41.2
26	34.1	33.0	35.2	30.3	27.7	28.3	29.9	31.6	25.8	14.2	13.9	17.7	18.6	25.3	28.9	27.4	27.7	27.2	25.9	23.4	16.0	19.7	21.8	23.0	25.3	35.2
27	22.2	23.1	23.1	25.9	23.2	16.4	13.2	6.4	13.5	16.8	14.7	17.4	24.7	22.6	19.3	21.1	16.2	16.4	17.2	14.0	14.0	12.3	18.8	12.2	17.7	25.9
28	14.1	15.7	14.9	15.0	14.9	14.7	14.4	13.2	11.0	11.7	10.3	13.3	13.6	14.8	13.6	11.5	9.9	12.0	12.1	5.8	4.3	7.8	6.8	8.8	11.8	15.7
29	8.8	8.9	8.3	9.7	9.8	9.1	10.1	11.0	12.2	8.7	3.8	6.8	5.4	4.4	8.4	8.5	10.5	9.5	9.5	6.2	5.1	2.2	3.1	14.2	8.1	14.2
30	10.6	11.6	9.2	8.4	4.8	0.5	1.1	1.8	6.4	4.8	7.3	9.2	12.3	8.6	8.4	9.8	9.5	9.5	9.5	10.8	9.2	8.9	5.4	10.2	7.8	12.3
31	6.8	7.2	7.6	9.4	7.8	5.6	8.1	8.8	9.2	12.3	9.0	12.5	13.7	12.7	11.5	12.8	13.0	15.0	16.3	17.1	14.6	14.4	14.0	15.9	11.5	17.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100.0%
MEAN	18.1	18.5	18.0	17.9	17.9	17.8	17.0	16.9	17.7	17.0	16.8	18.6	20.0	20.3	20.3	20.1	18.8	17.8	17.7	17.4	17.6	18.2	18.7	19.6		
MAX	40.1	44.9	39.1	36.6	37.0	46.4	30.1	31.6	33.5	34.4	36.5	36.0	39.1	38.1	41.0	41.2	38.7	38.3	38.0	43.3	42.5	41.4	37.9	39.5		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	46.4 KM/HR		
Maximum 24-HR Average	32.9 KM/HR		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	8.542	Monthly Average	18.3 KM/HR

Lagoon Wind Direction (°) – December 2024

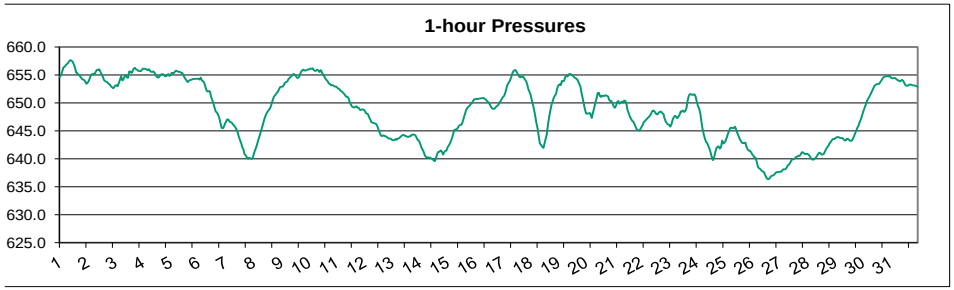
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	63.6	76.3	72.0	58.1	57.3	62.1	69.1	60.2	56.4	60.8	228.5	320.3	70.0	93.5	279.9	283.2	285.1	256.8	288.3	282.7	288.6	262.1	236.8	227.3	274.0	320.3
2	240.4	234.4	237.1	254.7	277.2	282.7	283.9	284.3	283.6	284.0	274.9	283.5	282.2	283.8	288.7	284.9	282.0	273.2	274.3	284.5	285.5	284.8	284.2	286.2	273.7	288.7
3	288.7	282.9	291.3	291.0	306.8	269.3	287.1	281.6	313.2	304.6	292.0	289.9	316.1	296.7	292.8	289.3	283.5	278.8	278.6	266.6	263.6	282.0	267.7	275.2	287.8	316.1
4	268.8	274.2	268.6	280.1	284.0	283.2	268.5	277.0	287.8	281.5	283.7	290.1	306.4	291.6	286.6	284.7	270.7	273.9	300.7	285.1	288.4	285.7	269.1	265.2	281.3	306.4
5	281.3	283.5	290.7	280.8	289.7	278.1	287.3	279.8	289.4	279.5	279.6	295.7	294.9	289.5	265.7	275.4	293.2	283.0	288.5	289.9	276.5	294.8	285.6	276.5	284.7	295.7
6	282.0	271.5	273.5	280.5	272.4	275.7	285.0	272.5	265.0	254.4	247.5	244.4	235.0	236.7	234.6	230.8	232.9	238.4	236.4	225.9	229.5	236.6	243.3	241.6	247.0	285.0
7	231.4	230.4	232.6	236.8	249.5	249.9	249.3	248.9	249.0	260.7	261.4	260.1	254.2	235.5	224.8	226.6	229.3	240.5	246.7	264.9	260.4	255.8	242.4	224.6	242.8	264.9
8	232.4	225.3	224.9	225.1	231.2	228.4	228.0	237.6	243.4	235.9	233.8	232.9	226.3	226.3	233.6	228.6	230.1	219.2	216.5	232.8	257.4	260.6	344.0	49.9	231.4	344.0
9	153.7	216.7	245.7	260.6	285.5	301.2	301.5	293.0	294.4	280.9	277.9	285.3	249.9	229.7	226.4	229.7	227.5	224.9	222.8	225.1	226.2	222.9	221.2	220.0	244.6	301.5
10	220.1	232.0	229.2	233.5	223.9	232.5	250.3	259.0	237.8	237.4	257.6	234.7	226.9	220.3	220.3	216.2	216.1	228.6	228.6	237.6	228.6	253.0	278.5	277.5	234.9	278.5
11	281.3	274.2	273.7	280.5	279.4	284.7	273.3	260.7	261.9	263.9	265.4	267.4	269.9	263.7	266.8	260.2	241.7	309.3	311.0	283.9	274.5	291.8	292.8	299.9	274.9	311.0
12	304.6	286.3	273.8	272.2	277.3	278.5	270.7	276.2	260.0	266.1	274.0	275.2	280.9	279.4	281.9	292.7	290.4	272.4	273.4	264.0	270.6	279.2	267.7	277.3	276.5	304.6
13	284.4	274.3	270.2	281.0	278.6	280.2	271.9	286.2	291.1	286.0	277.9	269.0	278.2	264.1	255.1	258.9	277.9	259.7	251.8	278.5	260.6	156.5	232.4	226.8	272.3	291.1
14	259.6	249.3	258.2	268.6	275.7	271.5	268.7	260.1	244.7	256.1	257.9	254.4	253.3	251.3	257.2	267.2	258.6	236.9	276.3	255.6	244.9	243.5	230.3	220.6	254.4	276.3
15	220.7	233.8	228.3	243.7	241.5	253.4	247.5	244.9	240.8	224.9	225.8	229.4	244.8	247.5	235.5	227.5	223.5	218.8	225.2	225.4	237.1	230.2	228.9	226.1	232.6	253.4
16	219.0	223.2	260.3	270.6	272.7	257.5	281.6	251.2	250.9	232.5	247.5	246.9	254.3	253.7	224.4	244.7	253.6	348.9	58.8	59.3	55.7	56.5	60.9	70.7	254.9	348.9
17	69.2	71.9	68.9	73.4	69.8	65.0	70.7	76.8	76.5	69.3	65.8	62.0	65.5	75.3	62.5	65.3	58.4	63.9	65.2	65.7	66.5	65.3	67.0	66.4	68.2	76.8
18	65.0	62.9	59.9	63.7	62.7	58.9	62.0	55.8	69.1	68.5	66.7	57.2	62.9	58.5	54.5	65.6	61.3	54.4	70.4	73.1	78.7	125.8	139.4	69.1	67.0	139.4
19	332.8	203.6	160.5	68.2	232.6	276.2	275.5	272.7	263.0	270.1	269.7	254.9	248.3	250.0	242.6	251.1	254.0	259.7	260.8	337.6	274.9	278.9	274.7	272.4	263.2	337.6
20	320.9	66.2	62.8	246.5	244.7	234.5	238.7	232.1	241.0	230.1	222.0	229.7	233.2	228.7	228.8	214.6	215.5	233.7	230.6	228.9	218.8	232.1	261.3	262.1	233.1	320.9
21	257.1	248.3	256.3	257.7	249.9	219.6	244.4	254.3	283.3	276.9	264.6	266.6	267.4	276.8	287.1	275.1	276.7	273.8	274.3	280.8	274.0	251.7	243.5	244.4	260.3	287.1
22	259.9	255.8	253.3	250.5	240.3	244.8	264.6	260.8	271.0	260.6	244.3	235.9	227.1	218.1	213.2	210.2	221.1	209.5	215.2	225.9	214.5	209.4	197.4	201.0	226.9	271.0
23	205.3	215.0	215.9	222.4	230.5	256.8	259.8	254.7	230.6	214.9	248.7	220.5	210.6	204.4	208.0	215.1	215.2	207.4	210.4	216.3	225.4	232.8	222.5	239.6	219.7	259.8
24	224.2	270.9	260.5	243.5	257.2	260.3	266.0	258.2	251.5	254.9	261.3	253.5	224.0	221.1	213.4	219.6	233.4	240.0	228.7	216.9	217.7	217.4	224.7	206.2	236.2	270.9
25	206.4	213.6	213.1	214.9	207.8	207.1	213.5	206.9	211.1	212.7	205.4	199.5	203.9	204.9	209.3	201.6	202.3	200.7	195.0	197.4	194.8	197.8	201.8	197.5	204.6	214.9
26	192.0	188.7	187.0	192.4	190.0	191.8	191.5	194.8	223.0	277.9	284.8	266.4	260.9	231.6	213.7	213.4	210.7	210.7	206.5	214.9	239.4	225.5	219.8	215.0	211.3	284.8
27	208.2	199.9	198.7	198.9	222.8	241.7	236.6	283.8	258.9	255.9	252.1	213.3	196.0	197.3	200.5	199.5	204.8	209.6	196.9	206.0	216.6	240.3	215.3	257.5	215.6	283.8
28	250.0	254.2	260.7	261.7	276.4	276.2	265.2	276.2	264.1	274.8	271.5	270.4	266.0	264.4	261.0	260.2	262.2	254.5	271.4	252.1	17.7	282.1	259.7	282.0	266.6	282.1
29	265.5	272.5	271.3	257.0	241.5	243.5	225.6	232.6	245.3	264.6	221.7	202.7	226.6	56.3	62.2	60.6	66.4	53.3	58.8	72.7	70.1	72.7	73.8	69.0	251.7	272.5
30	56.4	59.1	57.3	67.2	76.4	353.1	50.5	85.3	58.7	51.5	51.0	57.0	65.0	56.5	49.0	62.1	64.0	82.9	82.7	73.6	80.5	78.2	57.6	64.4	64.7	353.1
31	61.0	49.3	51.1	55.0	49.9	53.9	64.7	56.9	56.1	61.1	55.2	60.1	62.7	67.7	74.5	81.0	83.0	78.9	79.9	75.2	80.4	75.8	74.2	64.5	67.9	83.0
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100.0%
MEAN	219.5	209.7	209.9	215.8	224.4	234.6	227.5	228.2	228.1	227.5	231.3	230.0	221.4	212.1	214.7	216.0	216.9	219.2	213.7	216.1	207.0	215.5	216.7	205.7		
MAX	332.8	286.3	291.3	291.0	306.8	353.1	301.5	293.0	313.2	304.6	292.0	320.3	316.1	296.7	292.8	292.7	293.2	348.9	311.0	337.6	288.6	294.8	344.0	299.9		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	353 degrees		
Maximum 24-HR Average	288 degrees		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	75.61	Monthly Average	219.2 degrees

Lagoon Pressure (mmHg) – December 2024

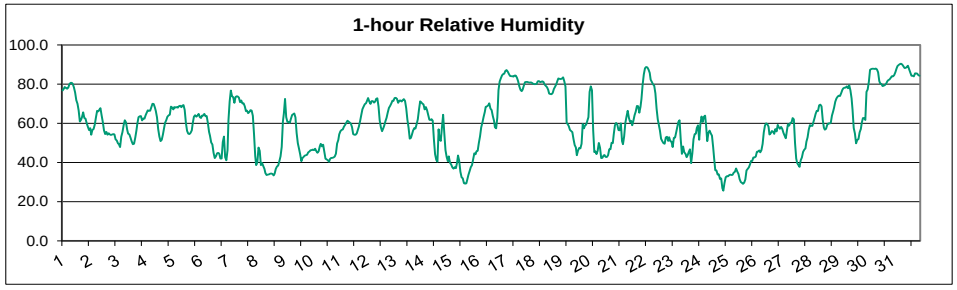
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	654.6	655.0	655.7	656.4	656.5	656.8	657.0	657.1	657.5	657.7	657.6	657.4	656.9	656.3	655.4	655.4	655.1	654.9	654.6	654.4	654.2	654.1	653.8	653.4	655.7	657.7
2	653.6	654.0	654.5	655.0	655.2	655.3	655.2	655.5	655.9	655.9	656.0	655.6	655.1	654.7	654.2	654.0	653.8	653.7	653.5	653.4	653.0	652.8	652.6	652.8	654.4	656.0
3	653.2	653.2	653.0	653.5	654.2	654.8	654.0	654.2	654.7	655.0	654.6	654.5	655.7	655.6	655.4	655.7	656.2	656.3	656.0	655.9	655.7	655.7	655.7	655.9	654.9	656.3
4	656.1	656.1	656.1	656.1	655.9	656.0	655.8	655.6	655.6	655.6	655.4	655.0	654.7	654.6	654.7	654.9	655.1	655.2	655.0	654.8	654.8	655.0	655.2	654.8	655.3	656.1
5	655.0	655.4	655.3	655.4	655.7	655.8	655.6	655.6	655.6	655.4	655.4	655.0	654.5	654.2	653.9	653.7	654.0	654.1	654.1	654.3	654.3	654.3	654.3	654.3	654.8	655.8
6	654.3	654.2	654.6	654.0	653.9	653.6	652.9	652.3	652.0	652.1	652.0	651.1	650.5	649.9	649.3	648.5	648.3	647.9	647.4	646.5	645.6	645.4	645.7	646.3	650.3	654.6
7	646.7	647.1	647.0	646.6	646.6	646.4	646.2	646.0	645.7	645.3	644.7	644.0	643.3	642.8	642.2	641.7	640.9	640.6	640.3	640.0	640.2	640.1	640.0	640.1	643.5	647.1
8	640.8	641.5	642.0	642.8	643.5	644.1	644.7	645.5	646.2	647.0	647.7	648.2	648.5	648.8	649.0	649.5	650.2	650.9	651.3	651.5	651.8	652.1	652.5	652.9	647.6	652.9
9	652.9	652.9	653.2	653.6	653.7	653.9	654.2	654.5	654.7	654.9	655.2	655.2	654.9	654.6	654.5	654.6	655.1	655.6	655.9	656.0	655.8	655.8	655.9	656.0	654.7	656.0
10	656.0	656.2	656.1	656.2	655.9	655.7	655.8	656.0	655.8	655.5	655.9	655.5	655.1	654.8	654.4	654.2	653.9	653.5	653.4	653.2	653.2	653.1	652.9	652.9	654.8	656.2
11	652.8	652.6	652.5	652.2	652.1	651.9	651.7	651.5	651.1	651.1	650.9	650.2	649.7	649.4	649.3	649.2	649.3	649.4	649.1	649.1	648.8	648.8	648.9	648.8	650.4	652.8
12	648.7	648.2	648.1	648.0	647.4	647.0	646.6	646.5	646.4	646.4	646.2	645.9	645.3	644.8	644.3	644.1	644.2	644.1	644.1	643.9	643.8	643.6	643.7	643.6	645.6	648.7
13	643.3	643.3	643.4	643.6	643.4	643.6	643.7	643.9	644.1	644.3	644.3	644.1	644.1	643.9	643.9	644.0	644.1	644.3	644.3	644.3	644.2	643.9	643.4	643.3	643.9	644.3
14	642.9	642.2	641.8	641.4	640.7	640.4	640.3	640.2	640.2	640.2	640.0	639.9	639.7	639.6	640.2	640.9	641.3	641.3	641.5	641.3	640.8	641.2	641.4	641.5	640.9	642.9
15	642.1	642.4	642.8	643.3	643.9	644.6	645.2	645.3	645.3	645.6	646.0	646.1	646.1	646.5	647.3	648.0	648.7	649.1	649.4	649.5	649.8	650.0	650.3	650.7	646.6	650.7
16	650.7	650.8	650.7	650.8	650.8	650.9	650.9	650.9	650.7	650.7	650.4	650.2	649.9	649.6	649.2	649.0	648.9	649.1	649.3	649.5	649.7	650.1	650.4	650.7	650.2	650.9
17	651.1	651.3	651.9	652.7	653.3	653.6	654.0	654.5	655.2	655.7	655.9	655.8	655.4	655.1	654.8	654.6	654.7	654.8	654.6	654.2	653.9	653.3	652.5	652.0	654.0	655.9
18	651.4	650.5	649.6	648.7	647.5	646.5	645.5	644.0	642.8	642.5	642.2	641.9	642.7	643.6	644.4	646.1	647.5	648.6	649.7	650.3	650.9	651.3	651.6	652.6	647.2	652.6
19	653.1	653.4	653.2	654.0	653.9	654.0	654.6	654.9	654.8	655.1	655.2	655.1	655.0	654.8	654.5	654.4	654.3	654.0	653.4	652.9	652.0	651.0	649.9	648.9	653.6	655.2
20	648.1	648.1	648.1	648.2	648.0	647.3	648.2	649.1	650.1	650.8	651.8	651.8	651.3	651.1	651.3	651.2	651.3	651.4	651.3	651.1	650.6	650.4	650.4	649.9	650.0	651.8
21	649.4	649.1	649.6	650.2	650.4	649.9	650.1	650.2	650.0	650.4	650.4	649.7	648.8	648.2	647.6	647.2	646.8	646.6	646.2	645.7	645.3	645.1	645.0	645.3	648.2	650.4
22	645.7	646.1	646.6	646.8	647.0	647.2	647.4	647.6	648.0	648.4	648.7	648.6	648.3	648.0	648.0	648.3	648.4	648.5	648.2	648.0	647.3	646.7	646.4	646.2	647.5	648.7
23	646.1	645.8	646.2	647.1	647.4	647.7	647.6	647.3	647.5	647.9	648.5	648.5	648.7	648.4	648.5	649.1	650.4	651.3	651.6	651.6	651.5	651.5	651.6	651.1	648.9	651.6
24	650.2	649.4	649.0	648.0	646.8	645.4	644.4	643.6	643.0	642.8	642.2	641.7	641.2	640.3	639.8	640.3	641.2	642.0	642.2	642.2	641.9	642.1	643.3	642.8	643.6	650.2
25	642.9	643.3	643.9	644.5	645.0	645.5	645.6	645.5	645.5	645.8	645.3	644.7	644.2	643.7	643.3	642.9	642.8	642.9	642.9	642.3	641.7	641.5	641.5	641.2	643.7	645.8
26	640.8	640.6	640.2	640.2	639.5	638.6	638.3	638.2	637.9	637.8	637.7	637.2	636.8	636.4	636.4	636.5	636.8	637.0	637.0	637.1	637.4	637.6	637.6	637.7	638.0	640.8
27	637.7	637.7	637.9	638.2	638.1	638.2	638.5	638.9	639.0	639.4	639.8	640.0	639.9	640.1	640.3	640.4	640.6	640.5	640.8	641.2	641.2	641.0	640.8	640.9	639.6	641.2
28	640.9	640.7	640.5	640.1	639.9	639.9	640.0	640.2	640.5	640.9	641.1	641.1	640.8	640.8	640.9	641.3	641.8	642.1	642.4	642.7	643.0	643.3	643.6	643.6	641.3	643.6
29	643.7	643.9	643.9	643.9	643.7	643.8	643.7	643.6	643.3	643.3	643.6	643.6	643.4	643.2	643.2	643.5	643.9	644.5	645.0	645.5	645.9	646.4	647.0	647.6	644.3	647.6
30	648.4	648.9	649.5	650.1	650.6	650.9	651.3	651.8	652.2	652.7	653.1	653.3	653.3	653.4	653.4	653.7	654.1	654.4	654.6	654.7	654.8	654.8	654.8	654.9	652.7	654.9
31	654.6	654.4	654.4	654.5	654.5	654.3	654.1	654.0	653.9	654.0	654.2	653.9	653.5	653.2	653.1	653.1	653.3	653.3	653.3	653.2	653.2	653.1	653.1	652.9	653.7	654.6
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100.0%
MEAN	648.6	648.7	648.7	648.9	648.9	648.8	648.8	648.8	648.9	649.0	649.1	648.9	648.6	648.4	648.3	648.4	648.6	648.8	648.8	648.7	648.6	648.6	648.6	648.6		
MAX	656.1	656.2	656.1	656.4	656.5	656.8	657.0	657.1	657.5	657.7	657.6	657.4	656.9	656.3	655.4	655.7	656.2	656.3	656.0	656.0	655.8	655.8	655.9	656.0		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	658	MMHg	
Maximum 24-HR Average	656	MMHg	
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	5.476	Monthly Average	648.7 MMHg

Lagoon Relative Humidity (%) – December 2024

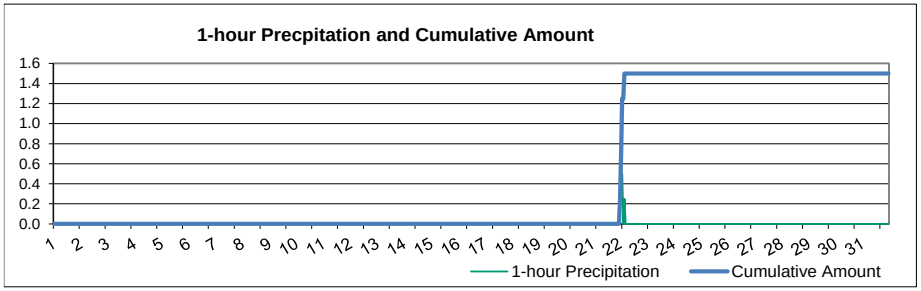
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	76.7	77.4	78.5	78.0	77.7	78.2	80.1	80.7	80.7	80.1	78.3	75.8	71.8	70.0	66.5	60.9	61.8	63.2	65.6	62.7	62.4	60.1	58.3	56.5	70.9	80.7
2	57.5	54.2	56.7	57.1	59.3	63.0	66.4	66.0	67.1	67.7	64.1	60.7	56.4	54.5	55.6	54.2	55.0	54.4	54.0	54.3	54.5	54.3	51.8	51.3	57.9	67.7
3	49.8	49.3	47.9	53.1	55.5	59.0	61.6	60.5	56.8	54.7	54.4	52.7	50.8	49.3	49.5	52.6	56.3	59.9	63.1	63.6	63.7	61.4	62.4	62.3	56.3	63.7
4	64.2	65.3	66.7	66.4	66.4	68.2	70.0	69.9	68.0	66.3	63.1	57.1	53.3	50.9	51.6	54.2	57.7	60.3	61.6	63.4	64.0	64.4	68.6	68.0	62.9	70.0
5	67.1	68.3	68.0	68.3	68.0	68.8	69.0	68.2	69.1	69.4	66.9	60.3	56.1	54.7	54.5	55.2	56.4	60.0	63.4	64.2	63.4	63.9	64.8	63.2	63.8	69.4
6	62.7	63.9	63.9	64.8	63.6	63.7	60.1	55.6	53.6	50.2	49.2	45.0	42.3	43.1	44.8	45.0	44.5	42.1	42.0	50.5	53.3	42.8	41.2	46.3	51.4	64.8
7	61.6	71.1	76.7	73.8	73.3	70.5	73.5	73.9	73.7	73.1	70.8	71.7	70.2	70.2	68.7	66.2	66.5	65.1	65.8	66.7	66.5	63.9	54.4	43.4	68.0	76.7
8	38.6	40.0	47.6	45.9	38.6	39.8	38.3	36.7	34.7	33.6	33.9	34.0	34.3	34.4	34.1	33.4	34.3	36.8	38.0	38.4	40.7	43.1	48.0	60.9	39.1	60.9
9	65.0	72.4	63.1	60.6	60.8	60.3	62.3	64.3	64.6	65.0	63.0	55.1	49.9	47.1	44.2	40.7	42.2	42.8	43.5	43.7	43.9	45.2	45.7	46.3	53.8	72.4
10	46.3	46.6	46.3	47.0	45.9	44.9	45.8	48.3	49.6	48.2	49.1	45.5	42.0	41.6	41.1	40.4	41.8	42.4	42.4	42.6	43.0	44.5	49.7	51.5	45.3	51.5
11	54.4	56.0	56.7	56.8	58.3	59.2	60.3	61.4	60.9	60.4	59.9	58.1	54.4	54.1	54.2	54.9	56.4	58.4	61.0	64.2	67.2	68.5	69.8	70.3	59.8	70.3
12	71.3	72.9	71.1	69.9	71.3	71.3	70.5	71.2	72.5	72.9	68.6	61.5	58.0	56.0	57.4	58.8	61.1	62.9	65.5	67.9	68.8	70.2	71.6	71.4	67.3	72.9
13	72.9	73.1	72.4	70.5	71.5	71.6	71.2	71.8	72.4	71.4	67.7	61.9	57.7	52.2	52.6	54.2	56.3	57.5	57.3	59.6	62.0	66.9	71.2	70.8	65.3	73.1
14	70.1	69.7	67.1	68.3	66.7	64.3	61.8	61.7	62.2	61.4	51.9	44.3	41.4	40.4	57.0	51.8	51.1	57.8	64.4	55.0	46.3	42.8	40.7	43.2	55.9	70.1
15	39.9	39.0	37.5	36.8	37.7	37.0	40.0	43.6	40.8	35.3	32.5	31.9	29.4	29.2	29.3	31.2	33.7	35.6	37.7	38.6	41.6	44.7	44.2	45.7	37.2	45.7
16	45.9	50.0	53.4	58.0	60.4	63.3	65.8	68.5	68.7	69.1	70.3	67.5	66.7	63.7	61.3	58.0	57.4	62.9	77.0	81.4	83.1	84.5	85.2	85.3	67.0	85.3
17	86.8	87.2	86.4	85.2	84.1	84.0	84.1	83.8	84.4	84.4	83.3	81.5	78.9	77.0	76.4	77.2	79.2	81.0	81.1	81.2	80.9	80.8	80.9	80.7	82.1	87.2
18	80.2	79.9	80.0	80.2	81.5	81.5	81.0	81.2	81.4	81.1	79.8	79.2	78.5	77.1	75.2	74.9	74.9	75.5	77.5	78.6	79.8	81.7	82.9	82.7	79.4	82.9
19	82.6	82.8	83.5	81.4	78.7	60.1	59.7	58.6	56.6	56.0	55.5	51.9	48.8	47.6	43.7	46.1	47.4	47.2	49.5	59.7	57.4	59.0	59.3	61.1	59.8	83.5
20	63.2	76.1	78.9	76.9	56.6	45.3	45.8	44.2	45.9	50.0	47.5	42.2	42.4	43.5	43.8	42.8	42.8	43.7	46.7	46.7	50.1	49.9	54.4	59.0	51.6	78.9
21	60.2	59.3	56.6	56.4	60.0	50.9	49.3	53.4	60.2	63.5	66.4	62.8	60.7	61.3	59.0	61.3	64.1	66.1	68.9	68.8	65.4	68.4	72.4	79.7	62.3	79.7
22	84.9	88.0	88.7	88.5	87.5	85.8	82.3	81.1	79.9	79.2	75.3	67.5	62.0	58.9	56.4	52.1	50.9	49.9	49.6	52.9	53.2	51.1	52.9	50.9	67.9	88.7
23	50.6	47.9	52.6	52.7	55.5	58.4	60.7	61.6	51.8	44.4	48.2	45.2	44.4	42.7	43.6	45.5	46.7	39.6	44.6	51.9	54.5	54.7	57.7	59.0	50.6	61.6
24	51.6	59.6	63.5	60.7	63.4	63.9	59.3	50.9	55.1	56.3	54.8	53.7	47.9	42.3	36.1	36.0	33.8	33.9	31.6	32.0	26.8	25.6	29.5	32.5	45.9	63.9
25	33.1	32.9	33.5	33.8	33.6	33.7	34.8	35.2	37.0	35.5	34.1	31.5	30.0	29.7	29.1	29.7	31.4	35.9	36.8	37.5	39.1	40.8	40.7	42.6	34.7	42.6
26	42.6	43.0	45.5	45.6	46.2	45.1	46.3	49.5	55.4	58.9	59.9	59.6	58.3	54.3	54.8	56.1	55.9	54.7	57.1	55.9	59.2	58.1	57.1	58.2	53.2	59.9
27	57.2	55.2	53.7	52.4	56.6	59.5	58.8	60.2	60.4	62.7	62.0	50.0	42.1	39.7	38.7	37.8	41.2	42.5	45.4	46.5	47.2	50.6	52.9	56.8	51.2	62.7
28	59.1	58.8	58.6	60.8	63.0	64.9	66.5	66.3	69.2	69.5	68.6	61.9	57.8	56.7	57.2	59.2	60.0	59.9	60.2	64.0	66.0	67.9	71.0	72.7	63.3	72.7
29	73.6	74.2	73.9	75.4	77.1	77.8	78.2	78.2	78.9	77.8	79.4	76.8	72.7	67.0	57.6	54.8	49.8	51.6	51.9	55.4	57.0	60.3	62.7	62.6	67.7	79.4
30	61.7	76.0	77.3	81.3	87.3	87.7	87.9	87.9	87.7	88.0	87.5	86.1	81.6	80.3	80.1	79.0	79.2	79.6	80.2	81.5	82.0	82.3	83.2	84.1	82.1	88.0
31	83.9	84.6	86.1	88.0	89.2	89.7	90.2	90.4	90.0	89.1	88.2	88.3	88.8	89.4	87.7	86.0	84.3	84.3	83.9	85.5	85.6	85.3	84.6	84.3	87.0	90.4
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100.0%
MEAN	61.8	63.7	64.3	64.3	64.4	63.6	63.9	64.0	64.2	63.7	62.4	58.8	55.8	54.2	53.6	53.2	54.0	55.1	57.0	58.5	59.0	59.3	60.3	61.4		
MAX	86.8	88.0	88.7	88.5	89.2	89.7	90.2	90.4	90.0	89.1	88.2	88.3	88.8	89.4	87.7	86.0	84.3	84.3	83.9	85.5	85.6	85.3	85.2	85.3		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	90.4 %		
Maximum 24-HR Average	87.0 %		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	14.86	Monthly Average	60.0 %

Lagoon Precipitation (mm) – December 2024

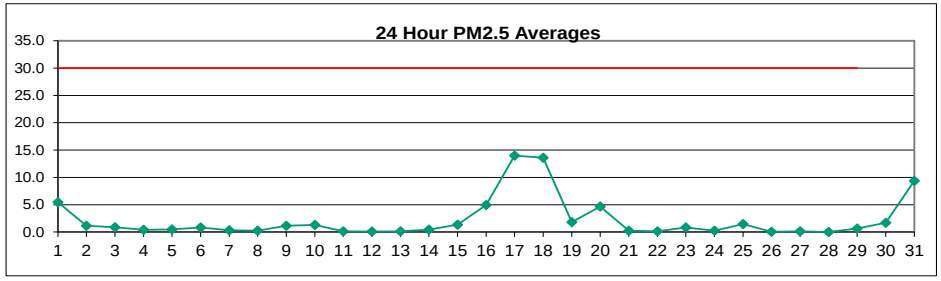
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DAILY MAX	24-HOUR TOTAL
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.3	0.5	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.5
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
MAX	0.3	0.5	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		



Number of Non-Zero Readings	4		
Maximum 1-HR Average	1.5 MM		
Maximum 24-HR Average	0.5 MM		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	0.029	Monthly Average	0.00 MM

Windridge $PM_{2.5}$ (µg/m^3) – December 2024

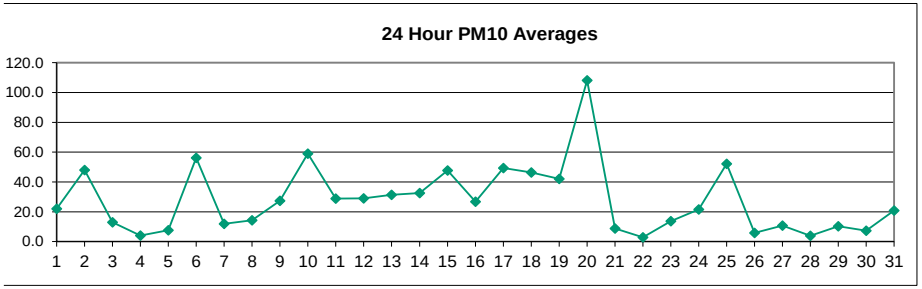
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	6.0	8.0	9.0	8.0	9.0	8.0	9.0	9.0	10.0	10.0	10.0	15.0	12.0	6.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	15.0
2	3.0	5.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	3.0	5.0	6.0	2.0	1.2	6.0
3	0.0	1.0	2.0	3.0	2.0	0.0	0.0	0.0	0.0	C	4.0	3.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.9	4.0
4	3.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	3.0	0.0	0.0	0.4	3.0
5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	5.0	2.0	0.0	0.0	0.0	0.0	0.0	0.5	5.0
6	0.0	0.0	1.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	3.0	1.0	0.0	5.0	4.0	0.0	0.0	2.0	0.8	5.0
7	0.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3	2.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.3	2.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	8.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	2.0	1.0	0.0	1.2	11.0
10	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	3.0	2.0	5.0	4.0	1.0	0.0	1.0	0.0	0.0	4.0	2.0	0.0	0.0	0.0	3.0	2.0	1.3	5.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	6.0
15	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	8.0	6.0	1.0	0.0	2.0	3.0	3.0	0.0	0.0	0.0	3.0	2.0	1.3	8.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	11.0	11.0	17.0	23.0	17.0	18.0	18.0	5.0	23.0
17	19.0	16.0	18.0	10.0	11.0	12.0	13.0	11.0	9.0	12.0	10.0	12.0	11.0	16.0	12.0	18.0	15.0	18.0	16.0	17.0	18.0	10.0	17.0	15.0	14.0	19.0
18	16.0	14.0	14.0	15.0	15.0	13.0	17.0	15.0	8.0	10.0	11.0	14.0	15.0	15.0	15.0	12.0	12.0	13.0	13.0	14.0	13.0	19.0	15.0	8.0	13.6	19.0
19	9.0	11.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	18.0
20	16.0	20.0	3.0	6.0	30.0	4.0	4.0	2.0	2.0	3.0	2.0	2.0	3.0	1.0	5.0	3.0	2.0	2.0	0.0	0.0	0.0	1.0	1.0	0.0	4.7	30.0
21	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	0.3	2.0
22	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
23	0.0	2.0	2.0	0.0	5.0	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	1.0	0.0	0.0	0.0	0.8	5.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.3	6.0
25	9.0	4.0	2.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	1.0	1.0	1.0	0.0	5.0	3.0	1.5	9.0
26	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
27	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	4.0	1.0	0.0	2.0	0.6	5.0
30	3.0	2.0	1.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.0	3.0	2.0	0.0	0.0	0.0	2.0	4.0	0.0	1.0	3.0	4.0	6.0	6.0	1.7	6.0
31	4.0	2.0	6.0	13.0	10.0	11.0	13.0	12.0	12.0	15.0	17.0	11.0	10.0	15.0	12.0	13.0	9.0	6.0	7.0	8.0	6.0	6.0	4.0	3.0	9.4	17.0
NO.	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	743	100.0%
MEAN	2.8	2.8	2.7	1.8	2.7	1.7	2.1	1.8	1.5	1.8	2.3	2.5	2.5	2.4	1.8	1.5	1.7	2.5	2.0	2.3	2.5	2.3	2.6	2.5	7.5	
MAX	19.0	20.0	18.0	15.0	30.0	13.0	17.0	15.0	12.0	15.0	17.0	15.0	15.0	16.0	15.0	18.0	15.0	18.0	16.0	17.0	23.0	19.0	18.0	18.0	17.4	70.0



Number of 24HR Exceedences	0	Proposed Guideline	
Number of Non-Zero Readings	265		
Maximum 1-HR Average	30.0	UG/M3	
Maximum 24-HR Average	14.0	UG/M3	
		Operational Time	744 HRS
Monthly Calibration	1	Operational Uptime	100.0 %
Standard Deviation	4.5	Monthly Average	2.2 UG/M3

Windridge PM_{10} ($\mu g/m^3$) – December 2024

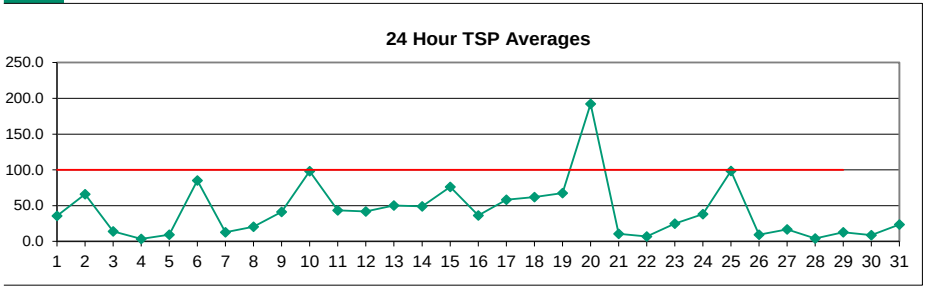
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	13.0	21.0	11.0	11.0	12.0	13.0	13.0	12.0	15.0	31.0	43.0	42.0	37.0	13.0	8.0	5.0	2.0	5.0	6.0	5.0	27.0	36.0	49.0	98.0	22.0	98.0
2	135.0	35.0	23.0	6.0	14.0	28.0	44.0	22.0	39.0	82.0	42.0	59.0	33.0	53.0	76.0	50.0	62.0	91.0	55.0	30.0	32.0	88.0	31.0	22.0	48.0	135.0
3	17.0	87.0	30.0	6.0	7.0	5.0	17.0	1.0	3.0	C	C	56.0	11.0	7.0	6.0	6.0	4.0	6.0	7.0	4.0	0.0	1.0	2.0	3.0	13.0	87.0
4	2.0	2.0	5.0	0.0	0.0	6.0	4.0	0.0	3.0	5.0	8.0	10.0	8.0	10.0	6.0	2.0	6.0	4.0	1.0	1.0	0.0	2.0	6.0	5.0	4.0	10.0
5	2.0	5.0	5.0	2.0	1.0	5.0	4.0	3.0	5.0	16.0	10.0	12.0	10.0	13.0	8.0	5.0	2.0	0.0	2.0	4.0	6.0	14.0	19.0	31.0	7.7	31.0
6	20.0	11.0	8.0	5.0	6.0	77.0	76.0	69.0	37.0	79.0	86.0	79.0	131.0	68.0	52.0	88.0	95.0	59.0	57.0	91.0	62.0	48.0	41.0	5.0	56.3	131.0
7	9.0	55.0	8.0	10.0	5.0	15.0	8.0	20.0	4.0	7.0	19.0	5.0	6.0	30.0	6.0	5.0	4.0	5.0	6.0	5.0	2.0	4.0	37.0	12.0	12.0	55.0
8	11.0	7.0	32.0	36.0	21.0	22.0	18.0	12.0	10.0	20.0	22.0	15.0	11.0	6.0	6.0	26.0	18.0	11.0	8.0	10.0	7.0	4.0	5.0	5.0	14.3	36.0
9	4.0	2.0	1.0	3.0	1.0	3.0	6.0	5.0	7.0	23.0	22.0	39.0	106.0	100.0	42.0	53.0	43.0	32.0	24.0	17.0	17.0	79.0	21.0	6.0	27.3	106.0
10	10.0	18.0	74.0	42.0	55.0	71.0	92.0	148.0	113.0	109.0	112.0	78.0	26.0	31.0	26.0	27.0	55.0	112.0	57.0	55.0	32.0	24.0	41.0	8.0	59.0	148.0
11	6.0	9.0	7.0	6.0	6.0	7.0	11.0	29.0	27.0	60.0	96.0	88.0	88.0	75.0	51.0	61.0	13.0	14.0	9.0	7.0	11.0	6.0	2.0	4.0	28.9	96.0
12	3.0	15.0	10.0	8.0	8.0	31.0	21.0	23.0	35.0	48.0	112.0	96.0	77.0	40.0	25.0	20.0	36.0	7.0	18.0	15.0	8.0	29.0	6.0	6.0	29.0	112.0
13	10.0	33.0	3.0	6.0	4.0	16.0	35.0	9.0	7.0	53.0	69.0	31.0	137.0	68.0	44.0	74.0	18.0	83.0	10.0	9.0	7.0	10.0	9.0	8.0	31.4	137.0
14	6.0	5.0	3.0	0.0	2.0	2.0	2.0	4.0	5.0	153.0	308.0	35.0	74.0	29.0	6.0	3.0	3.0	3.0	16.0	57.0	16.0	11.0	19.0	19.0	32.5	308.0
15	9.0	62.0	3.0	3.0	3.0	2.0	34.0	32.0	31.0	85.0	53.0	126.0	308.0	94.0	37.0	22.0	58.0	39.0	22.0	10.0	8.0	42.0	42.0	22.0	47.8	308.0
16	19.0	3.0	4.0	4.0	0.0	0.0	2.0	15.0	36.0	40.0	40.0	48.0	38.0	35.0	33.0	27.0	41.0	34.0	32.0	38.0	28.0	34.0	44.0	47.0	26.8	48.0
17	40.0	49.0	54.0	62.0	59.0	41.0	35.0	47.0	42.0	37.0	88.0	69.0	44.0	57.0	63.0	44.0	44.0	78.0	34.0	34.0	47.0	44.0	38.0	35.0	49.4	88.0
18	32.0	29.0	30.0	26.0	30.0	38.0	28.0	55.0	43.0	47.0	65.0	65.0	41.0	39.0	58.0	36.0	33.0	46.0	45.0	63.0	68.0	125.0	23.0	49.0	46.4	125.0
19	49.0	22.0	52.0	16.0	8.0	46.0	13.0	24.0	14.0	15.0	70.0	43.0	61.0	64.0	32.0	84.0	36.0	67.0	43.0	52.0	46.0	56.0	87.0	10.0	42.1	87.0
20	47.0	43.0	13.0	439.0	485.0	267.0	143.0	128.0	38.0	30.0	62.0	51.0	122.0	92.0	58.0	60.0	123.0	62.0	65.0	133.0	57.0	47.0	33.0	0.0	108.3	485.0
21	3.0	3.0	4.0	3.0	20.0	12.0	4.0	0.0	0.0	0.0	3.0	4.0	8.0	5.0	3.0	7.0	5.0	6.0	58.0	33.0	15.0	10.0	5.0	2.0	8.9	58.0
22	1.0	0.0	0.0	1.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	3.0	1.0	1.0	2.0	4.0	2.0	2.0	3.0	2.0	11.0	9.0	17.0	7.0	2.9	17.0
23	58.0	30.0	15.0	7.0	0.0	1.0	2.0	7.0	12.0	18.0	16.0	28.0	35.0	11.0	9.0	18.0	24.0	10.0	6.0	3.0	2.0	4.0	4.0	10.0	13.8	58.0
24	6.0	2.0	0.0	0.0	0.0	2.0	9.0	19.0	7.0	4.0	7.0	26.0	32.0	65.0	22.0	37.0	9.0	12.0	23.0	3.0	4.0	21.0	62.0	146.0	21.6	146.0
25	200.0	136.0	95.0	36.0	0.0	1.0	3.0	14.0	10.0	22.0	33.0	38.0	65.0	115.0	76.0	93.0	69.0	28.0	27.0	24.0	25.0	41.0	71.0	32.0	52.3	200.0
26	20.0	25.0	15.0	0.0	0.0	5.0	6.0	5.0	3.0	1.0	0.0	6.0	8.0	8.0	11.0	6.0	3.0	2.0	5.0	3.0	0.0	0.0	2.0	5.0	5.8	25.0
27	4.0	1.0	3.0	8.0	7.0	3.0	0.0	7.0	7.0	21.0	28.0	17.0	35.0	48.0	10.0	8.0	6.0	12.0	9.0	10.0	5.0	2.0	4.0	4.0	10.8	48.0
28	0.0	2.0	5.0	6.0	4.0	2.0	4.0	3.0	2.0	0.0	4.0	6.0	9.0	7.0	7.0	10.0	10.0	6.0	3.0	1.0	1.0	1.0	0.0	0.0	3.9	10.0
29	0.0	2.0	2.0	7.0	3.0	0.0	2.0	2.0	1.0	2.0	8.0	14.0	8.0	14.0	14.0	18.0	13.0	19.0	21.0	21.0	19.0	18.0	13.0	26.0	10.3	26.0
30	25.0	8.0	12.0	10.0	5.0	2.0	6.0	6.0	7.0	8.0	9.0	9.0	6.0	1.0	1.0	0.0	11.0	8.0	6.0	5.0	5.0	10.0	8.0	8.0	7.3	25.0
31	10.0	8.0	13.0	15.0	12.0	10.0	17.0	15.0	18.0	20.0	21.0	24.0	20.0	19.0	21.0	24.0	49.0	46.0	42.0	25.0	22.0	14.0	16.0	21.0	20.9	49.0
NO.	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	742	100.0%
MEAN	24.9	23.5	17.4	25.3	25.1	23.6	21.3	23.8	18.7	34.5	48.6	39.4	51.5	39.3	26.4	29.8	28.9	29.3	23.2	24.8	19.0	26.9	24.4	21.2	42.0	
MAX	200.0	136.0	95.0	439.0	485.0	267.0	143.0	148.0	113.0	153.0	308.0	126.0	308.0	115.0	76.0	93.0	123.0	112.0	65.0	133.0	68.0	125.0	87.0	146.0	91.1	433.3



Number of Non-Zero Readings	704		
Maximum 1-HR Average	485.0	UG/M3	
Maximum 24-HR Average	108.3	UG/M3	
		Operational Time	744 HRS
Monthly Calibration	2	Operational Uptime	100.0 %
Standard Deviation	41	Monthly Average	27.9 UG/M3

Windridge TSP (µg/m^3) – December 2024

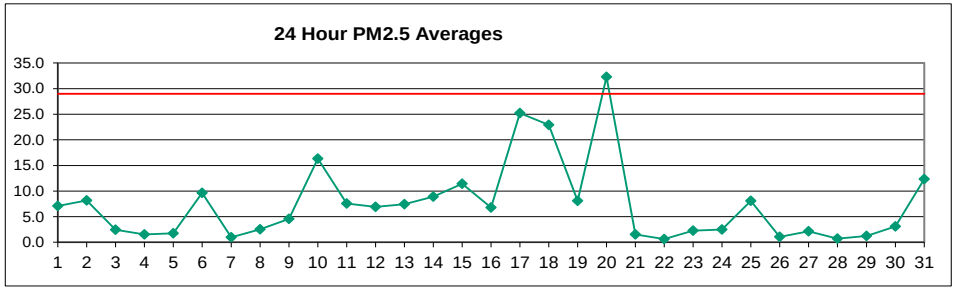
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	12.0	33.0	12.0	10.0	22.0	17.0	12.0	19.0	28.0	39.0	57.0	63.0	57.0	23.0	7.0	9.0	7.0	8.0	11.0	7.0	52.0	77.0	94.0	184.0	35.8	184.0
2	159.0	59.0	46.0	13.0	32.0	48.0	43.0	30.0	43.0	93.0	54.0	89.0	52.0	84.0	110.0	79.0	92.0	127.0	83.0	42.0	45.0	74.0	44.0	41.0	65.9	159.0
3	25.0	132.0	35.0	5.0	5.0	9.0	18.0	6.0	5.0	C	17.0	17.0	5.0	7.0	9.0	8.0	5.0	4.0	5.0	2.0	1.0	1.0	0.0	1.0	14.0	132.0
4	0.0	0.0	0.0	0.0	1.0	3.0	6.0	3.0	2.0	5.0	7.0	9.0	14.0	10.0	6.0	3.0	2.0	2.0	3.0	2.0	0.0	0.0	4.0	6.0	3.7	14.0
5	4.0	1.0	2.0	1.0	0.0	1.0	2.0	4.0	3.0	26.0	4.0	11.0	14.0	18.0	4.0	3.0	1.0	3.0	3.0	4.0	6.0	17.0	34.0	56.0	9.3	56.0
6	37.0	4.0	2.0	1.0	8.0	152.0	134.0	123.0	65.0	122.0	126.0	132.0	186.0	109.0	64.0	121.0	98.0	105.0	74.0	130.0	94.0	76.0	67.0	13.0	85.1	186.0
7	10.0	40.0	9.0	7.0	4.0	24.0	11.0	23.0	1.0	10.0	20.0	6.0	3.0	24.0	5.0	20.0	9.0	6.0	7.0	6.0	2.0	0.0	47.0	16.0	12.9	47.0
8	13.0	8.0	59.0	59.0	34.0	40.0	36.0	13.0	13.0	32.0	23.0	22.0	11.0	11.0	11.0	36.0	15.0	12.0	10.0	13.0	7.0	1.0	8.0	5.0	20.5	59.0
9	1.0	4.0	8.0	5.0	1.0	1.0	8.0	8.0	14.0	34.0	30.0	51.0	179.0	164.0	83.0	86.0	56.0	40.0	33.0	26.0	26.0	90.0	28.0	18.0	41.4	179.0
10	19.0	29.0	89.0	71.0	100.0	130.0	169.0	238.0	222.0	181.0	186.0	143.0	57.0	56.0	50.0	48.0	115.0	173.0	61.0	73.0	48.0	28.0	54.0	17.0	98.2	238.0
11	14.0	18.0	4.0	2.0	3.0	7.0	14.0	38.0	31.0	88.0	141.0	140.0	148.0	123.0	87.0	105.0	24.0	17.0	6.0	9.0	8.0	10.0	5.0	2.0	43.5	148.0
12	6.0	14.0	10.0	3.0	14.0	56.0	31.0	26.0	49.0	82.0	161.0	135.0	115.0	54.0	17.0	30.0	54.0	15.0	32.0	12.0	8.0	59.0	11.0	8.0	41.8	161.0
13	14.0	42.0	7.0	11.0	8.0	22.0	53.0	14.0	11.0	96.0	118.0	43.0	233.0	97.0	61.0	130.0	23.0	138.0	24.0	10.0	13.0	18.0	15.0	7.0	50.3	233.0
14	1.0	0.0	1.0	6.0	3.0	1.0	1.0	6.0	10.0	262.0	406.0	66.0	128.0	35.0	8.0	6.0	9.0	6.0	20.0	96.0	34.0	22.0	24.0	27.0	49.1	406.0
15	10.0	79.0	8.0	6.0	3.0	0.0	55.0	47.0	48.0	155.0	90.0	226.0	506.0	175.0	63.0	38.0	75.0	47.0	31.0	13.0	8.0	59.0	58.0	31.0	76.3	506.0
16	28.0	11.0	6.0	3.0	7.0	4.0	8.0	24.0	45.0	50.0	53.0	74.0	54.0	69.0	56.0	40.0	66.0	43.0	39.0	47.0	33.0	31.0	40.0	44.0	36.5	74.0
17	46.0	61.0	59.0	70.0	67.0	47.0	54.0	64.0	70.0	37.0	40.0	68.0	52.0	76.0	78.0	56.0	59.0	105.0	43.0	45.0	59.0	55.0	49.0	38.0	58.3	105.0
18	29.0	31.0	33.0	30.0	27.0	33.0	40.0	91.0	64.0	79.0	107.0	103.0	41.0	51.0	73.0	40.0	35.0	64.0	55.0	81.0	95.0	184.0	29.0	73.0	62.0	184.0
19	65.0	33.0	73.0	28.0	6.0	67.0	20.0	34.0	22.0	21.0	127.0	86.0	92.0	89.0	45.0	113.0	69.0	106.0	87.0	98.0	83.0	102.0	135.0	19.0	67.5	135.0
20	63.0	54.0	19.0	740.0	985.0	462.0	271.0	241.0	59.0	51.0	101.0	79.0	204.0	145.0	100.0	125.0	208.0	111.0	132.0	257.0	82.0	74.0	39.0	13.0	192.3	985.0
21	6.0	2.0	2.0	0.0	30.0	13.0	9.0	3.0	0.0	3.0	3.0	4.0	22.0	6.0	9.0	9.0	9.0	8.0	20.0	52.0	25.0	10.0	6.0	3.0	10.6	52.0
22	0.0	0.0	3.0	2.0	2.0	3.0	4.0	2.0	2.0	5.0	8.0	3.0	0.0	8.0	6.0	4.0	6.0	4.0	6.0	7.0	33.0	15.0	36.0	9.0	7.0	36.0
23	137.0	74.0	21.0	0.0	0.0	0.0	1.0	17.0	19.0	23.0	16.0	41.0	58.0	21.0	13.0	37.0	43.0	12.0	7.0	7.0	10.0	13.0	9.0	19.0	24.9	137.0
24	6.0	4.0	1.0	1.0	2.0	2.0	34.0	21.0	8.0	6.0	12.0	31.0	49.0	107.0	27.0	72.0	17.0	25.0	54.0	2.0	13.0	50.0	126.0	248.0	38.3	56.0
25	409.0	234.0	177.0	80.0	0.0	6.0	11.0	40.0	11.0	48.0	74.0	74.0	133.0	233.0	114.0	181.0	118.0	29.0	49.0	44.0	31.0	63.0	153.0	56.0	98.7	409.0
26	31.0	41.0	25.0	4.0	7.0	11.0	7.0	5.0	6.0	6.0	3.0	4.0	17.0	10.0	12.0	7.0	4.0	3.0	8.0	6.0	1.0	0.0	1.0	5.0	9.3	41.0
27	4.0	5.0	4.0	3.0	0.0	0.0	2.0	7.0	12.0	34.0	42.0	31.0	71.0	90.0	15.0	9.0	12.0	10.0	14.0	15.0	4.0	12.0	6.0	2.0	16.8	90.0
28	8.0	9.0	6.0	3.0	1.0	2.0	1.0	1.0	1.0	0.0	2.0	13.0	11.0	14.0	11.0	8.0	5.0	4.0	3.0	0.0	0.0	0.0	0.0	0.0	4.3	14.0
29	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	19.0	10.0	15.0	19.0	24.0	20.0	25.0	32.0	41.0	29.0	27.0	17.0	26.0	12.9	41.0
30	25.0	6.0	7.0	17.0	6.0	3.0	7.0	9.0	7.0	5.0	11.0	9.0	6.0	5.0	10.0	4.0	15.0	8.0	7.0	5.0	10.0	11.0	8.0	7.0	8.7	25.0
31	6.0	9.0	9.0	13.0	15.0	16.0	16.0	17.0	20.0	22.0	20.0	20.0	22.0	21.0	17.0	23.0	57.0	48.0	79.0	37.0	28.0	16.0	16.0	23.0	23.8	79.0
NO.	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	743	100.0%
MEAN	38.4	33.5	23.8	38.5	44.9	38.1	34.8	37.9	28.7	53.8	66.5	58.5	82.3	62.9	38.4	47.5	42.8	42.2	33.5	38.4	28.6	38.5	37.5	32.8		
MAX	409.0	234.0	177.0	740.0	985.0	462.0	271.0	241.0	222.0	262.0	406.0	226.0	506.0	233.0	114.0	181.0	208.0	173.0	132.0	257.0	95.0	184.0	153.0	248.0		



Number of 24HR Exceedences	1	Proposed Guideline	
Number of Non-Zero Readings	705		
Maximum 1-HR Average	985.0	UG/M3	
Maximum 24-HR Average	192.3	UG/M3	
IZS Calibration Time		Operational Time	744 HRS
Down Time	0	Operational Uptime	100.0 %
Standard Deviation	71.0	Monthly Average	42.6 UG/M3

Berm $PM_{2.5}$ (µg/m^3) – December 2024

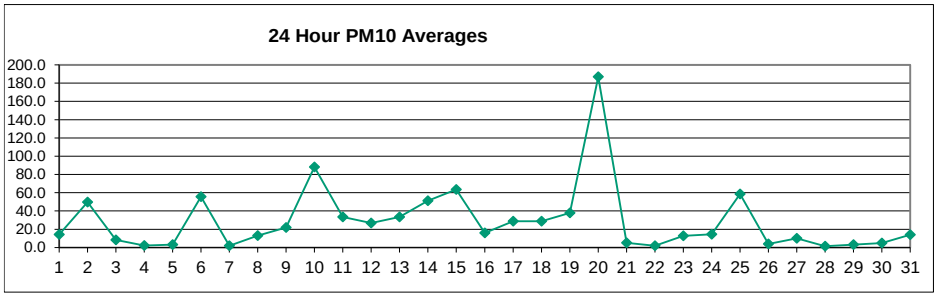
DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	7.4	7.5	9.1	7.5	7.2	6.8	6.9	7.9	8.6	8.6	11.2	14.2	18.7	11.3	2.3	1.9	1.5	0.9	1.4	1.3	1.3	4.6	9.5	12.6	7.1	18.7
2	11.0	14.7	13.4	3.7	1.9	3.4	5.3	5.3	5.4	7.7	13.2	8.1	11.9	7.5	9.6	12.5	8.6	11.3	12.9	8.4	4.7	4.6	6.7	4.7	8.2	14.7
3	4.5	3.1	14.1	3.9	1.3	1.4	1.8	2.6	2.1	1.5	1.5	2.0	2.3	2.1	1.7	2.1	1.8	1.7	1.6	1.5	1.0	1.5	0.9	0.9	2.5	14.1
4	1.4	0.9	0.8	0.8	0.8	1.0	1.5	2.2	1.8	1.7	1.9	1.9	2.0	1.9	2.2	1.9	1.6	1.3	1.1	1.3	1.5	1.4	1.7	1.6	1.5	2.2
5	1.1	1.5	1.5	1.0	1.0	1.1	1.3	2.3	2.0	2.1	2.4	2.0	2.1	2.5	2.8	1.6	1.6	1.4	1.1	1.2	1.5	1.1	2.4	3.4	1.7	3.4
6	5.3	4.1	2.0	1.3	1.7	2.1	21.9	15.1	13.6	7.9	15.5	15.9	17.5	12.0	11.1	9.0	10.5	10.0	8.1	11.8	10.9	10.5	8.2	6.1	9.7	21.9
7	1.6	0.5	1.0	0.6	0.4	0.7	1.0	0.6	1.1	0.4	1.2	2.1	2.8	0.7	1.3	0.6	1.1	0.6	0.6	0.9	0.4	0.4	0.3	2.3	1.0	2.8
8	1.4	4.3	1.2	4.3	5.8	4.4	4.5	3.7	1.6	2.2	2.5	2.2	2.1	1.5	1.7	1.2	2.2	1.3	1.1	2.8	2.5	2.3	1.1	2.3	2.5	5.8
9	1.6	0.7	0.6	0.5	0.3	0.7	0.5	0.9	1.1	1.5	6.6	6.9	8.8	15.3	14.2	9.9	7.1	6.5	4.9	2.8	1.4	1.6	10.8	4.2	4.6	15.3
10	1.7	1.4	3.0	8.1	4.4	15.7	16.3	20.3	25.3	32.2	32.8	38.4	30.1	15.6	19.8	15.9	12.2	21.7	35.4	10.9	14.2	6.3	3.7	6.0	16.3	38.4
11	2.7	2.2	1.4	0.7	1.2	1.1	1.4	3.0	5.5	7.6	15.6	32.5	29.3	14.3	21.8	15.4	7.9	3.2	2.3	2.0	2.8	2.5	2.3	3.0	7.6	32.5
12	1.9	1.5	2.3	1.9	1.0	4.5	4.2	4.2	9.5	11.1	10.9	33.3	25.0	17.7	8.9	4.0	3.0	7.0	2.6	3.0	2.1	1.9	3.3	1.5	6.9	33.3
13	1.5	3.1	6.7	1.0	1.8	2.3	3.2	6.9	4.7	3.8	14.4	21.6	12.6	33.2	12.7	10.7	14.5	2.7	11.2	3.0	2.3	1.6	1.7	1.6	7.4	33.2
14	1.9	1.8	32.1	1.3	1.1	1.0	0.8	0.7	1.0	1.4	40.0	73.1	14.6	14.0	2.0	1.0	0.8	1.0	0.6	3.8	12.2	5.0	1.2	1.2	8.9	73.1
15	1.4	0.9	2.8	0.3	0.7	0.3	0.4	7.1	8.6	7.3	25.7	20.1	43.1	77.5	32.8	10.7	3.7	2.6	4.5	2.1	1.0	0.6	8.5	12.0	11.4	77.5
16	2.3	1.1	0.6	0.7	0.6	1.0	0.8	1.3	3.8	5.1	6.1	8.7	7.6	5.6	6.4	4.6	4.2	4.6	12.5	13.5	16.2	15.8	18.3	21.8	6.8	21.8
17	37.2	38.7	43.5	41.3	45.0	40.7	31.6	25.1	40.3	21.6	13.5	21.7	24.9	15.7	16.7	15.2	17.1	21.2	19.2	14.8	19.2	15.2	13.7	12.0	25.2	45.0
18	13.3	13.0	21.5	15.4	19.3	17.2	25.7	24.6	35.0	26.4	25.2	29.3	39.4	19.6	20.9	18.9	18.2	32.3	31.5	24.3	23.4	21.5	22.4	12.1	22.9	39.4
19	16.9	20.3	5.9	10.0	2.1	1.0	3.6	2.2	2.7	2.0	2.9	14.8	14.8	10.1	5.5	6.0	6.3	8.8	7.6	10.7	8.2	7.6	9.0	15.4	8.1	20.3
20	1.8	16.8	19.8	2.6	118.0	145.4	51.4	40.9	28.2	14.5	10.1	22.9	25.6	36.8	36.3	22.0	20.2	35.8	18.6	26.0	47.6	20.2	7.8	5.2	**32.3**	145.4
21	2.0	0.5	0.3	0.3	0.3	6.5	2.1	0.5	0.4	1.1	0.7	1.0	1.2	2.6	0.8	1.0	0.9	1.4	1.0	2.2	4.2	2.7	1.5	1.6	1.5	6.5
22	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.6	0.4	0.6	0.8	1.0	0.9	1.9	2.2	2.4	0.6	2.4
23	2.0	8.8	3.6	1.3	0.3	0.4	0.2	0.2	2.8	3.0	5.9	2.0	3.2	3.7	1.2	0.9	4.1	4.1	1.3	1.0	0.8	0.7	2.0	1.3	2.3	8.8
24	2.5	0.9	0.2	0.2	0.2	0.3	0.4	2.7	2.1	0.8	0.9	0.6	1.4	3.7	6.0	3.5	5.6	1.3	2.4	4.9	1.1	1.2	5.6	11.8	2.5	11.8
25	23.3	30.4	15.2	13.0	6.3	0.2	1.0	1.7	2.4	0.7	3.0	5.4	7.2	14.3	15.3	10.5	12.0	8.6	1.8	2.7	1.9	1.4	4.8	10.8	8.1	30.4
26	3.2	1.9	2.7	2.4	0.8	0.7	1.2	0.7	0.8	0.4	0.5	0.6	0.7	1.0	0.9	0.7	0.7	0.5	0.8	0.9	0.6	0.6	1.4	0.7	1.1	3.2
27	0.6	0.9	0.4	0.3	0.5	0.3	0.8	0.5	1.0	1.7	2.6	6.1	5.1	10.2	10.6	1.7	1.1	1.1	1.9	0.9	0.9	0.7	0.8	0.6	2.1	10.6
28	0.4	0.4	0.6	0.6	0.4	0.6	0.6	0.5	0.4	0.6	0.5	0.8	1.4	1.4	1.1	1.0	1.1	0.9	1.0	0.7	0.6	0.6	0.4	0.4	0.7	1.4
29	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.5	0.7	1.7	1.8	2.6	2.1	2.3	3.4	2.4	3.0	1.9	2.1	2.4	1.2	3.4
30	12.5	9.6	1.6	8.2	3.2	1.6	1.2	2.0	1.8	1.6	1.7	2.6	2.2	4.9	1.7	1.1	1.1	3.1	1.9	1.6	2.8	2.3	2.1	2.3	3.1	12.5
31	2.3	2.5	4.0	5.9	7.8	8.5	9.1	9.1	9.4	9.6	11.3	11.7	12.0	13.9	11.6	10.9	17.1	49.9	24.6	23.5	16.5	11.1	7.1	7.0	12.4	49.9
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	5.4	6.3	6.9	4.5	7.6	8.7	6.5	6.3	7.2	6.0	9.1	13.0	12.0	12.0	9.1	6.4	6.1	8.0	7.1	6.1	6.7	4.9	5.3	5.5		
MAX	37.2	38.7	43.5	41.3	118.0	145.4	51.4	40.9	40.3	32.2	40.0	73.1	43.1	77.5	36.3	22.0	20.2	49.9	35.4	26.0	47.6	21.5	22.4	21.8		



Number of 24HR Exceedences	1	Proposed Guideline	
Number of Non-Zero Readings	744		
Maximum 1-HR Average	145.4	UG/M3	
Maximum 24-HR Average	32.3	UG/M3	
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	11.7	Monthly Average	7.4 UG/M3

Berm PM_{10} ($\mu g/m^3$) – December 2024

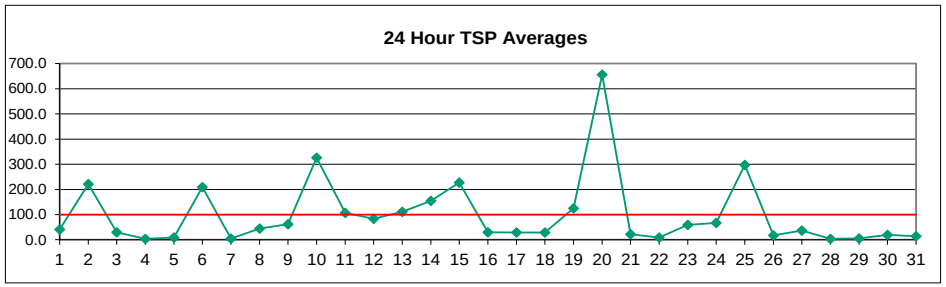
DAY \ HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	7.4	7.5	9.1	7.5	7.2	6.8	6.9	7.9	8.6	8.6	11.2	14.4	27.5	16.7	6.7	4.0	2.5	1.5	3.6	4.6	3.5	26.9	59.1	84.7	14.3	84.7
2	70.8	102.5	91.9	20.5	5.8	16.6	33.5	29.0	26.5	39.4	79.5	51.1	78.8	44.2	61.9	80.1	49.2	68.0	83.8	47.3	24.2	23.7	41.8	24.6	49.8	102.5
3	21.0	12.7	92.0	17.8	2.0	2.3	3.9	8.5	3.1	1.8	2.2	3.7	4.3	4.1	3.1	3.8	2.0	2.0	2.2	1.5	1.0	1.7	0.9	0.9	8.3	92.0
4	1.5	0.9	0.8	0.8	0.8	1.0	1.7	3.1	2.3	2.1	3.3	3.7	4.2	4.1	4.7	3.0	2.3	1.3	1.1	1.3	1.5	1.6	2.2	2.5	2.2	4.7
5	1.1	1.6	1.5	1.0	1.0	1.1	1.3	3.3	2.6	2.9	5.5	3.1	4.8	7.5	8.5	2.6	2.5	1.6	1.1	1.2	2.2	1.1	7.7	11.5	3.3	11.5
6	31.0	20.2	4.7	1.3	2.3	4.5	138.4	94.3	75.9	45.1	84.4	85.9	111.6	79.2	65.7	48.8	63.0	58.2	52.9	70.3	61.8	59.5	45.5	31.7	55.7	138.4
7	5.1	0.7	1.1	0.6	0.4	0.8	1.1	0.6	1.3	0.4	1.5	2.7	3.6	0.7	3.1	0.6	1.3	0.9	1.4	2.2	0.4	0.9	0.6	13.4	1.9	13.4
8	8.6	15.3	6.7	33.7	43.5	29.8	26.0	21.8	7.1	14.1	14.3	11.1	10.7	6.2	7.8	3.1	11.6	4.1	3.2	12.1	9.8	5.6	2.1	3.7	13.0	43.5
9	2.2	0.7	0.7	0.5	0.3	0.7	0.5	1.6	2.1	3.4	41.3	35.9	39.8	78.6	78.4	52.9	42.9	34.0	22.8	9.6	3.6	5.6	52.9	15.7	21.9	78.6
10	4.2	4.7	17.4	39.2	25.6	99.0	97.8	130.5	152.7	194.2	195.6	182.5	148.8	80.4	92.4	87.5	64.6	115.5	192.2	58.1	65.3	28.2	14.5	25.1	88.2	195.6
11	10.8	7.8	3.1	0.7	2.4	2.0	2.9	8.6	24.4	32.4	70.4	159.9	149.3	75.4	108.5	67.9	38.8	10.3	5.6	3.3	4.2	5.7	4.5	5.7	33.5	159.9
12	2.3	1.5	2.3	2.8	1.0	6.5	5.5	5.5	14.1	16.5	57.7	169.8	142.7	91.6	42.9	13.4	8.2	30.6	6.6	8.6	4.4	2.2	4.2	1.5	26.8	169.8
13	1.5	3.7	9.6	1.0	1.8	2.3	5.3	9.9	5.4	5.6	71.7	132.2	49.4	204.2	67.7	62.5	78.2	6.3	63.6	9.7	4.6	2.0	2.5	1.6	33.4	204.2
14	3.6	3.5	238.6	1.8	1.5	1.6	2.1	1.0	3.3	1.9	244.2	420.9	74.3	79.5	14.4	2.9	1.9	2.2	0.6	21.1	74.4	24.2	3.7	3.6	51.1	420.9
15	4.0	1.9	10.7	0.6	3.3	0.6	1.1	30.7	45.8	30.6	151.8	101.2	253.4	521.0	181.0	56.1	16.1	9.5	16.3	5.7	3.1	0.9	33.4	46.8	63.6	521.0
16	5.6	3.0	1.2	1.4	1.0	1.0	1.6	3.8	15.5	28.3	28.3	42.7	35.7	25.1	27.9	22.0	16.3	15.1	19.6	13.5	16.2	15.8	18.3	21.8	15.9	42.7
17	38.7	40.0	51.8	46.8	54.1	49.5	37.1	26.4	56.7	24.5	13.5	23.9	33.2	18.4	21.5	16.9	17.1	23.4	20.9	14.8	20.2	16.7	13.7	12.0	28.8	56.7
18	13.3	13.0	21.5	15.4	19.3	17.2	25.7	33.7	51.2	35.6	36.5	43.0	57.3	19.6	25.8	19.7	18.2	47.4	47.0	29.5	31.6	26.2	30.2	12.1	28.7	57.3
19	20.9	27.5	6.3	11.4	5.0	2.1	20.5	11.6	14.1	10.5	15.0	103.5	94.7	56.2	25.5	32.2	33.4	48.3	44.7	63.1	55.9	49.1	64.3	91.0	37.8	103.5
20	6.6	23.0	20.5	4.2	724.5	1006.0	332.8	259.3	186.5	84.0	52.2	119.1	132.4	182.2	176.3	111.5	117.6	202.6	98.4	167.6	305.8	110.3	40.8	25.0	187.0	1006.0
21	6.1	0.9	0.7	0.7	0.9	29.7	9.6	0.8	0.4	3.5	1.1	2.0	3.2	11.1	1.3	2.0	1.7	3.8	1.8	5.7	20.3	10.7	1.7	1.9	5.1	29.7
22	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.9	0.6	0.5	1.0	0.7	1.7	1.7	2.5	3.2	10.0	8.3	14.3	2.0	14.3
23	10.4	63.5	24.6	7.2	0.5	0.4	0.3	0.2	14.6	17.6	32.4	9.6	22.6	20.8	4.6	3.7	27.1	27.6	3.9	2.0	1.6	1.5	6.8	4.1	12.8	63.5
24	15.8	2.5	0.2	0.2	0.2	0.4	0.8	13.8	9.0	2.3	1.0	0.8	4.6	18.8	35.8	17.6	35.2	6.8	12.9	35.0	3.4	6.1	39.3	83.9	14.4	83.9
25	173.2	240.7	127.5	98.4	55.4	0.2	2.9	9.4	13.3	3.2	15.1	38.4	48.5	99.3	112.3	81.2	84.8	57.2	8.0	14.1	9.9	5.3	32.0	75.6	58.6	240.7
26	19.1	8.9	15.3	12.6	2.4	2.8	5.3	2.3	2.4	0.6	1.2	1.0	1.3	2.6	1.8	1.6	1.4	1.1	1.7	2.3	0.8	1.3	3.6	2.7	4.0	19.1
27	1.3	2.3	2.1	0.7	1.7	0.4	3.2	0.7	3.6	6.0	15.4	30.0	25.7	57.6	62.4	7.4	3.7	2.2	5.6	1.7	1.5	1.6	1.5	0.7	10.0	62.4
28	0.4	0.7	1.6	1.2	0.7	1.5	1.5	0.5	0.4	0.7	0.6	1.5	4.4	3.7	2.8	2.3	2.5	1.8	1.7	0.7	0.6	0.6	0.4	0.4	1.4	4.4
29	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.7	1.0	3.5	4.4	5.8	6.3	6.7	7.5	7.2	10.2	4.7	7.0	6.2	3.1	10.2
30	29.5	33.8	1.6	8.2	3.3	1.6	1.2	2.0	1.8	1.6	1.7	2.6	2.2	5.0	1.7	1.1	1.1	3.1	1.9	1.6	2.8	2.3	2.1	2.3	4.8	33.8
31	2.3	2.5	4.0	5.9	7.8	8.5	9.1	9.1	9.4	9.6	11.3	11.7	12.0	13.9	11.6	10.9	17.1	73.0	33.6	29.9	19.0	11.1	7.1	7.0	14.1	73.0
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	16.8	20.9	24.8	11.1	31.5	41.8	25.2	23.5	24.3	20.2	40.7	58.4	51.1	59.1	40.7	26.6	24.8	28.0	24.8	20.9	24.7	14.9	17.8	20.4		
MAX	173.2	240.7	238.6	98.4	724.5	1006.0	332.8	259.3	186.5	194.2	244.2	420.9	253.4	521.0	181.0	111.5	117.6	202.6	192.2	167.6	305.8	110.3	64.3	91.0		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	1006.0 UG/M3		
Maximum 24-HR Average	187.0 UG/M3		
		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	66.1	Monthly Average	28.9 UG/M3

Berm TSP (µg/m^3) – December 2024

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	7.4	7.5	9.1	7.5	7.2	6.8	6.9	7.9	8.6	8.6	11.2	14.4	31.8	23.5	17.9	13.5	4.3	4.0	9.0	15.8	9.9	105.6	261.5	374.9	40.6	374.9
2	348.7	483.4	426.3	85.2	16.7	82.5	150.0	127.0	127.1	180.7	336.5	216.4	354.9	191.0	262.5	297.8	234.6	310.9	361.3	222.7	107.8	98.4	175.6	105.0	221.0	483.4
3	74.6	67.1	388.2	66.6	4.3	5.1	9.7	35.4	3.4	1.8	4.0	6.1	7.2	6.9	5.9	6.7	2.0	2.0	4.9	1.5	1.0	3.4	0.9	0.9	29.6	388.2
4	2.1	0.9	0.8	0.8	0.8	1.0	2.3	11.6	2.6	2.5	10.1	8.5	9.5	7.4	8.6	7.7	2.3	1.3	1.1	1.3	1.5	1.6	2.3	5.8	3.9	11.6
5	1.1	2.2	4.1	1.0	1.0	1.1	1.3	4.9	9.3	4.1	13.5	5.0	12.4	26.8	24.7	10.2	4.5	1.6	1.1	1.2	3.8	1.1	37.2	39.1	8.8	39.1
6	137.0	96.2	17.5	1.3	6.2	8.3	534.2	379.6	278.7	157.6	279.5	302.3	417.2	318.1	245.7	180.4	236.7	229.7	218.3	226.0	217.5	254.7	160.5	106.4	208.7	534.2
7	13.5	2.0	1.1	0.6	0.4	0.8	1.1	0.6	1.3	0.4	1.5	2.7	3.6	0.7	6.3	0.6	1.3	2.9	3.9	5.6	0.4	2.8	5.4	50.1	4.6	50.1
8	31.2	45.1	38.2	146.4	177.4	119.7	112.5	101.7	17.5	52.7	41.1	35.2	24.8	15.7	17.0	7.5	24.4	6.8	6.2	26.2	13.3	10.1	2.8	3.7	44.9	177.4
9	2.2	0.7	0.7	0.5	0.3	0.7	0.5	2.7	2.8	11.4	117.7	84.1	127.3	190.8	251.7	196.0	141.0	91.0	70.6	19.7	9.6	16.8	104.9	37.3	61.7	251.7
10	6.8	19.9	76.8	110.2	113.4	399.4	381.1	531.5	568.1	753.6	761.6	654.4	460.6	274.1	310.8	309.1	236.4	443.0	759.3	226.7	193.6	114.2	45.8	85.2	326.5	761.6
11	41.2	18.0	4.4	0.7	6.4	4.9	7.1	23.5	74.6	104.3	221.7	477.3	521.3	303.1	353.7	200.8	123.0	18.4	12.4	6.1	4.7	12.4	12.8	14.0	107.0	521.3
12	3.6	1.5	2.3	5.2	1.0	10.3	5.5	5.5	15.2	17.4	229.1	594.2	469.1	291.7	126.1	34.5	24.0	102.5	27.1	22.1	15.0	2.2	4.2	1.5	83.8	594.2
13	1.5	3.7	10.2	1.0	1.8	2.3	9.2	10.4	5.4	6.0	277.5	469.7	130.8	742.0	225.8	258.5	295.8	16.8	161.8	23.4	7.2	2.6	3.1	1.6	111.2	742.0
14	7.7	6.0	238.6	4.4	4.9	4.8	7.9	1.0	10.6	3.4	877.3	1450.8	266.2	298.4	62.7	9.1	2.1	2.2	0.6	90.2	247.3	88.8	14.3	6.9	154.4	1450.8
15	5.0	1.9	37.5	1.7	6.5	1.1	3.6	93.8	180.9	102.1	527.0	329.9	963.3	1765.6	665.8	223.6	60.9	17.6	27.1	7.6	6.7	1.0	201.9	218.9	227.1	1765.6
16	5.6	9.5	4.8	3.3	1.1	1.0	2.7	11.0	39.2	77.6	62.6	82.2	79.9	51.4	68.5	51.3	30.0	21.4	19.6	13.5	16.2	15.8	18.3	21.8	29.5	82.2
17	38.7	40.0	51.8	46.8	54.1	49.5	37.1	26.4	56.7	24.5	13.5	23.9	33.2	18.4	21.5	16.9	17.1	23.4	20.9	14.8	20.2	16.7	13.7	12.0	28.8	56.7
18	13.3	13.0	21.5	15.4	19.3	17.2	25.7	33.9	53.9	35.6	37.6	47.0	60.2	19.6	25.8	19.7	18.2	47.9	47.2	29.5	31.6	26.2	30.2	12.1	29.2	60.2
19	20.9	27.5	6.3	11.4	11.2	4.8	57.2	33.5	37.9	30.9	40.1	356.1	331.2	191.0	65.4	96.4	98.7	163.2	152.8	233.7	233.8	201.2	274.5	321.5	125.1	356.1
20	31.8	32.4	20.5	9.1	1764.3	3226.5	1314.0	1117.0	741.5	293.5	173.2	384.3	462.1	613.4	628.2	355.2	442.7	733.4	426.0	828.6	1383.2	487.6	201.0	89.7	656.6	3226.5
21	18.7	2.8	2.1	4.2	3.7	155.9	51.8	1.3	0.4	11.4	2.5	3.0	10.9	43.0	3.6	4.0	4.2	15.9	7.5	17.8	116.5	32.8	1.7	1.9	21.6	155.9
22	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	3.3	1.6	0.8	1.3	0.7	8.1	4.9	9.8	16.7	52.0	42.4	72.9	9.0	72.9
23	52.8	351.9	140.6	48.7	0.5	0.4	1.2	0.2	47.7	53.2	90.7	20.5	110.4	115.5	15.5	16.0	142.4	141.8	15.8	4.4	8.8	4.9	28.2	18.6	59.6	351.9
24	83.6	9.8	0.2	0.2	0.2	0.4	1.5	75.2	49.3	7.8	1.0	0.8	11.0	49.9	175.2	76.8	168.9	30.3	43.0	151.8	12.5	23.9	219.9	422.0	67.3	422.0
25	873.6	1184.6	669.3	500.2	310.2	0.4	8.8	50.8	81.8	16.0	85.6	190.3	261.1	500.9	534.4	440.0	453.9	284.7	32.8	73.5	37.9	28.3	151.3	368.6	297.5	1184.6
26	112.0	42.1	67.2	60.0	7.8	9.9	27.7	10.2	12.2	2.1	2.5	2.1	2.8	5.2	5.0	5.0	2.7	2.8	3.9	10.7	1.2	1.9	11.9	16.5	17.7	112.0
27	5.0	11.2	7.9	1.3	5.8	0.4	16.7	0.7	12.1	17.5	63.8	87.3	96.7	207.4	273.3	29.5	9.4	2.2	17.3	2.2	1.5	5.4	3.8	0.7	36.6	273.3
28	0.4	1.3	4.7	6.1	1.0	11.1	8.3	0.5	0.4	1.1	1.0	2.6	15.6	8.8	8.1	6.0	8.8	4.9	3.1	0.7	0.6	0.6	0.4	0.4	4.0	15.6
29	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.8	1.0	3.5	7.8	9.4	14.0	13.2	26.4	9.8	14.3	5.2	12.4	16.0	5.7	26.4
30	147.7	265.8	1.6	8.2	3.3	1.6	1.2	2.0	1.8	1.6	1.7	2.6	2.2	5.0	1.7	1.1	1.1	3.1	1.9	1.6	2.8	2.3	2.1	2.3	19.4	265.8
31	2.3	2.5	4.0	5.9	7.8	8.5	9.1	9.1	9.4	9.6	11.3	11.7	12.0	13.9	11.6	10.9	17.1	77.3	33.6	29.9	19.0	11.1	7.1	7.0	14.2	77.3
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	67.5	88.8	72.9	37.2	81.9	133.4	90.2	87.4	79.1	64.2	138.6	189.2	170.8	203.4	143.0	93.4	91.1	91.1	81.3	75.1	88.9	52.6	66.2	78.6		
MAX	873.6	1184.6	669.3	500.2	1764.3	3226.5	1314.0	1117.0	741.5	753.6	877.3	1450.8	963.3	1765.6	665.8	440.0	453.9	733.4	759.3	828.6	1383.2	487.6	274.5	422.0		



Number of 24HR Exceedences	10	Proposed Guideline	
Number of Non-Zero Readings	744		
Maximum 1-HR Average	3226.5	UG/M3	
Maximum 24-HR Average	656.6	UG/M3	
IZS Calibration Time		Operational Time	744 HRS
Monthly Calibration	0	Operational Uptime	100.0 %
Standard Deviation	230.5	Monthly Average	98.6 UG/M3