REPORT N^{O} 171-00556-00

AMBIENT AIR QUALITY MONTHLY REPORT

FEBRUARY 2018

FEBRUARY 2018

WSP

AMBIENT AIR QUALITY MONTHLY REPORT

FEBRUARY 2018

Lafarge Canada Inc.

Project no: 171-00556-00
Date: February 2018

WSP Canada Inc.
150-12791 Clarke Place
Richmond, BC V6V 2H9

Phone: +1 604 278 1411
Fax: +1 604 278 1042
www.wspgroup.com

SIGNATURES

PREPARED BY

Byeong Kim, B.Sc.
Air Quality Specialist, Environment

REVIEWED BY

Tyler Abel, M.Sc.
Project Manager, Air Quality Specialist, Environment

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon monitoring location and the GRIMM monitors in Exshaw, AB. The station is operated by WSP on behalf of Lafarge Canada Inc. (Lafarge) and is a requirement of Lafarge's Approval 1702-02-04. This report contains data collected between February 1, 2018 and February 28, 2018.

This monthly report was prepared by Byeong Kim, an Air Quality Specialist with WSP, on behalf of Lafarge and was reviewed by Tyler Abel, Manager of Air Quality and Air Quality Specialist at WSP.

2 FEBRUARY 2018 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 the stations 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 $PM_{2.5}$ 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	33.8	0	20.4	-
SO_2 (ppb)	100.0	14.4	0	6.4	0
$PM_{2.5}$ (µg/m^3)	100.0	32.0	0	18.8	0
PM_{10} (µg/m^3)	96.3	265.5	-	109.8	-
TSP (µg/m^3)	100.0	313.9	-	117.0	2
Temperature (°C)	100.0	4.4	-	-0.1	-
Wind Speed (km/hr) /Direction (Degrees)	100.0	47.8/W	-	37.9/WSW	-
Precipitation (mm)	100.0	2.8	-	5.5*	-

* Monthly Total Accumulation of Precipitation (mm)

Data Quality Notes:

- There was no exceedance of the 24-hour $PM_{2.5}$ AAAQO and the 1-hour $PM_{2.5}$ AAAQG.
- There were 2 exceedances of the 24-hour TSP AAAQO.
- 22 hours of PM_{10} data (starting from 11AM on February 20th) have been invalidated because the PM_{10} analyzer had been off-scaling. The instrument was repaired on February 21st.

Calibration/Maintenance Notes:

- The Station had 100% uptime for the month of February, except for the PM_{10} analyzer.
- The PM_{10} analyzer was repaired on February 21st.

2.2 WINDRIDGE STATION

Table 2-2 Windridge station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of AAAQO or AAAQG	Maximum Concentration	Exceedances of AAAQO
$PM_{2.5}$ (µg/m^3)	100.0	34.8	0*	19.5	0
PM_{10} (µg/m^3)	100.0	504.7	-	300.1	-
TSP (µg/m^3)	100.0	504.1	-	405.3	9

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

Data Quality Notes:

- There was no exceedance of the 24-hour $PM_{2.5}$ AAAQO or the 1-hour $PM_{2.5}$ AAAQG.
- There were 9 exceedances of the 24-hour TSP AAAQO.

Calibration/Maintenance Notes:

- The Station had 100% uptime for the month of February.

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.

Table 2-3 West station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	100.0	48.5	0*	20.6	0
PM_{10} (µg/m^3)	100.0	216.8	-	47.2	-
TSP (µg/m^3)	100.0	705.7	-	244.0	3

*Exceedance of 1-hour AAAQG

Data Quality Notes:

- There were no exceedances of the 24-hour $PM_{2.5}$ AAAQO or the 1-hour $PM_{2.5}$ AAAQG.
- There were 3 exceedances of the 24-hour TSP AAAQO.

Calibration/Maintenance Notes:

- The monitor had 100% uptime for the month of February.

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.

Table 2-4 Berm station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	100.0	86.4	1*	40.6	1
PM_{10} (µg/m^3)	100.0	834.9	-	356.2	-
TSP (µg/m^3)	100.0	3,099.2	-	1,284.1	14

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

Data Quality Notes:

- There were 1 and 14 exceedances of the 24-hour $PM_{2.5}$ and TSP AAAQO, respectively.
- There was 1 exceedance of the 1-hour $PM_{2.5}$ AAAQG.

Calibration/Maintenance Notes:

- The monitor had 100% uptime for the month of February.

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.

Table 2-5 Entrance station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
$PM_{2.5}$ (µg/m^3)	100.0	73.0	0*	25.6	0
PM_{10} (µg/m^3)	100.0	645.9	-	192.0	-
TSP (µg/m^3)	100.0	3319.1	-	1271.7	15

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

Data Quality Notes:

- There were 0 and 15 exceedances of the 24-hour $PM_{2.5}$ and TSP AAAQO, respectively.
- There was no exceedance of the 1-hour $PM_{2.5}$ AAAQG.

Calibration/Maintenance Notes:

→ The monitor had 100% uptime for the month of February.

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), site visit notes, wind roses (Figure 3-3, 3-4, 3-5) and tables and graphs illustrating the monitoring results for February 2018.

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

Table 3-1 Instrumentation List at the Lagoon Station

Equipment Description	Parameter Measured
MetOne BAM-1020 FRM Continuous Particulate Monitor	$PM_{2.5}$ Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	PM_{10} Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	TSP Concentrations
TEI 42C	Oxides of Nitrogen
Teledyne API 102A	Sulphur Dioxide
MetOne 130 Rain/Snow Gauge	Precipitation
MetOne Wind Sensor	Wind Speed
	Wind Direction
MetOne Ambient Temperature Sensor	Ambient Temperature

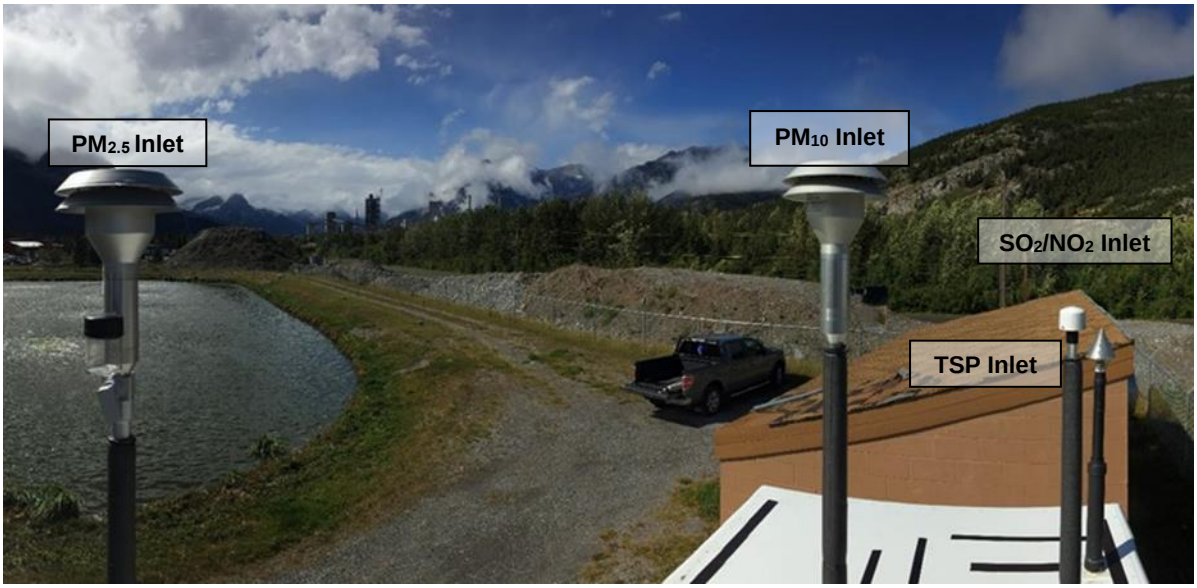


Figure 3-1 Inlets on the top of WSP's Lagoon Station

3.1 SITE VISIT NOTES

A summary of site visit notes for each of the monitors is provided in this section.

3.1.1 NO_X MONITORING

The NO_x monitor underwent monthly calibration on February 1th and had 100% uptime.

3.1.2 SO_2 MONITORING

The SO_2 monitor underwent monthly calibration on February 1th and had 100% uptime.

3.1.3 PM MONITORING

All BAM monitors underwent monthly calibration on February 1st. Also on February 21st. a special calibration was conducted on all BAN monitors because the PM_{10} analyzer had been off-scaling. The operation time for the PM_{10} monitor was 96.3%.

3.1.4 METEOROLOGICAL MONITORING

All meteorological sensors had 100% uptime.

3.2 MONITORING RESULTS AND TRENDS

Figure 3-3 illustrates the frequency of wind speed by wind direction for the month of February 2018. Table 3-2 summarizes the hourly and daily concentrations recorded in February 2018. Figure 3-5 graphically illustrates the time series for hourly concentrations as well as wind speed and direction,

while Figure 3-6 shows daily average concentrations recorded during February 2018 for the pollutants listed in Table 3-2.

There were 2 and 0 exceedances of the 24-hour TSP (100 µg/m^3) and $PM_{2.5}$ (30 µg/m^3) AAAQO. Historically in February, there was 1 exceedance of the 24-hour TSP AAQO in 2016 and no exceedances of the 24-hour $PM_{2.5}$ AAQO (Table 3-3).

Since flooding in 2013, the Municipal District has built up stockpiles of dirt on the far western edge of the wastewater treatment facility. During the summer of 2016, the Municipal District has planted grass seed on these stockpiles in an effort to reduce the amount of fugitive dust generated. Figure 3-2 shows the extent of the grass planted by the MD.

Figure 3-2 Grass planted on the stockpiles near the Lagoon Station. Photo taken February 12, 2016.

The wind rose (Figure 3-3) indicates that the winds predominantly came from the west, following the general orientation of the valley. As typical of the wind characteristics at the Lagoon site, the westerly winds were more intense (higher than 20 km/hr) than the easterly winds. It should be noted that the frequency of easterly winds increased as spring is approaching. Figure 3-4 shows the 2 days exceeding the 24-hour TSP Objective. During the exceedance days, the winds were predominantly from the WSW and over 20 km/hr.

Table 3-2 Summary of February 2018 data at Lagoon

Parameter	Objectives		Station	Exceedances		Monthly Average	1-hour					24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration/ Meteorological Variable	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration/ Meteorological Variable	Day	
NO_2 (ppb)	159	-	Lagoon	0	-	8.2	33.8	15	6	8.2	244.0	20.4	1	100.0
SO_2 (ppb)	172	48	Lagoon	0	0	1.9	14.4	12	14	33.2	290.2	6.4	12	100.0
$PM_{2.5}$ ($\mu g/m^3$)	80	30	Lagoon	0	0	7.0	32.0	2	17	15.3	253.0	18.8	2	100.0
PM_{10} ($\mu g/m^3$)	-	-	Lagoon	-	-	33.2	265.5	23	5	37.7	260.9	109.8	23	96.3
TSP ($\mu g/m^3$)	-	100	Lagoon	-	2	37.7	313.9	23	4	32.5	267.7	117.0	23	100.0
Temperature (°C)	-	-	Lagoon	-	-	-11.3	4.4	13	16	41.2	251.9	-0.1	13	100.0
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	19.4	47.8/W	23	11	47.8	246.0	37.9/WSW	23	100.0
Precipitation (mm)	-	-	Lagoon	-	-	0.0	2.8					5.5		100.0

Table 3-3 Days exceeding the Guideline for TSP and / $PM_{2.5}$ at the Lagoon 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)
Trailer						
2/12/2018	106.9	-	292.8	32.3	50.8	high wind event
2/23/2018	117.0	-	257.2	37.9	42.8	high wind event
Total # of Exceedances	**2**	**0**				
Maximum # of Exceedances (February)	**1 (2016)**	**0 (2010 ~ 2017)**				
Average # of Exceedances (February)	**0**	**0**				
Minimum # of Exceedances (February)	**0 (2010 ~ 2015, 2017)**	**0 (2010 ~ 2017)**				

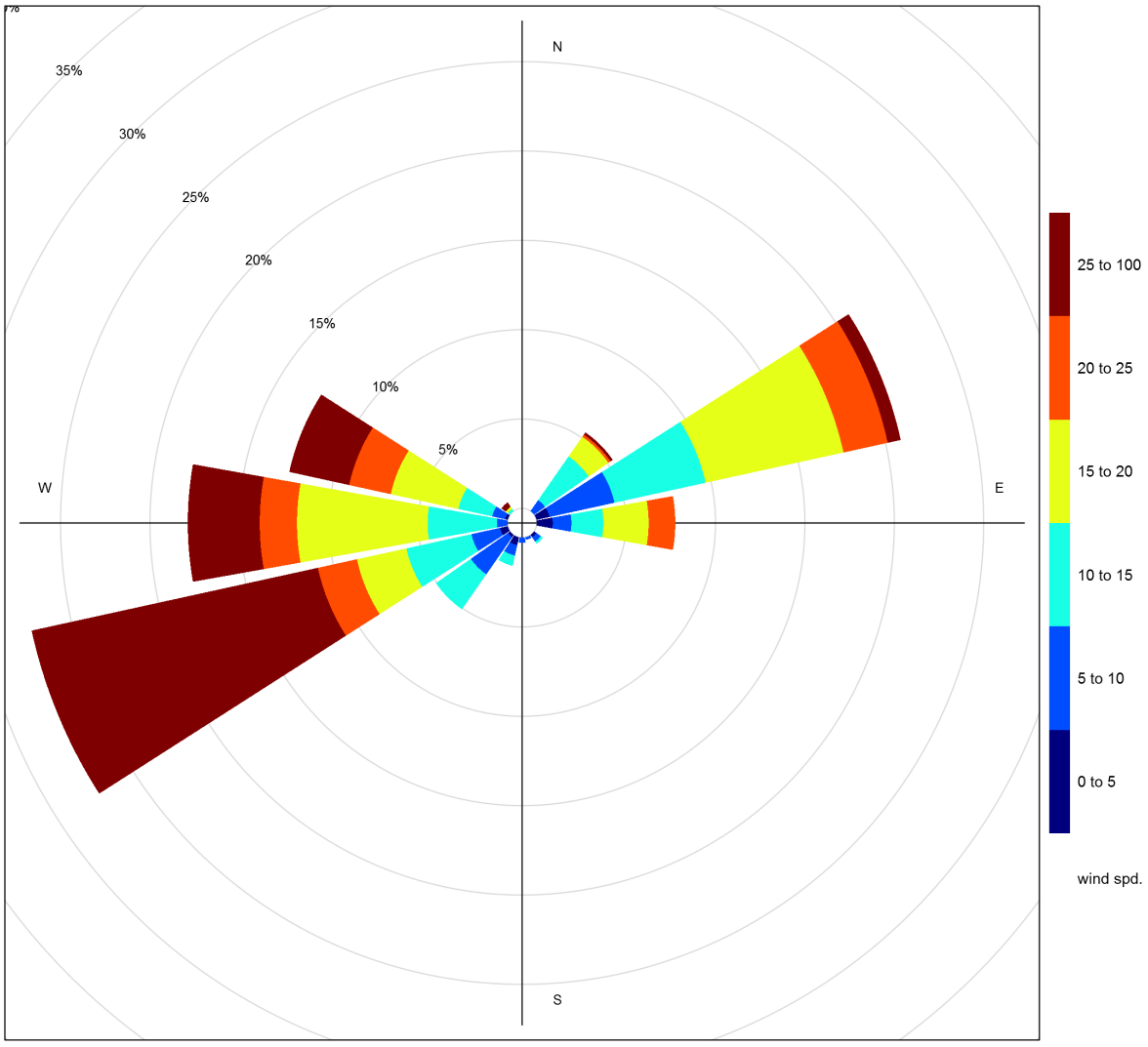


Figure 3-3 February 2018 wind rose from the Lagoon Station

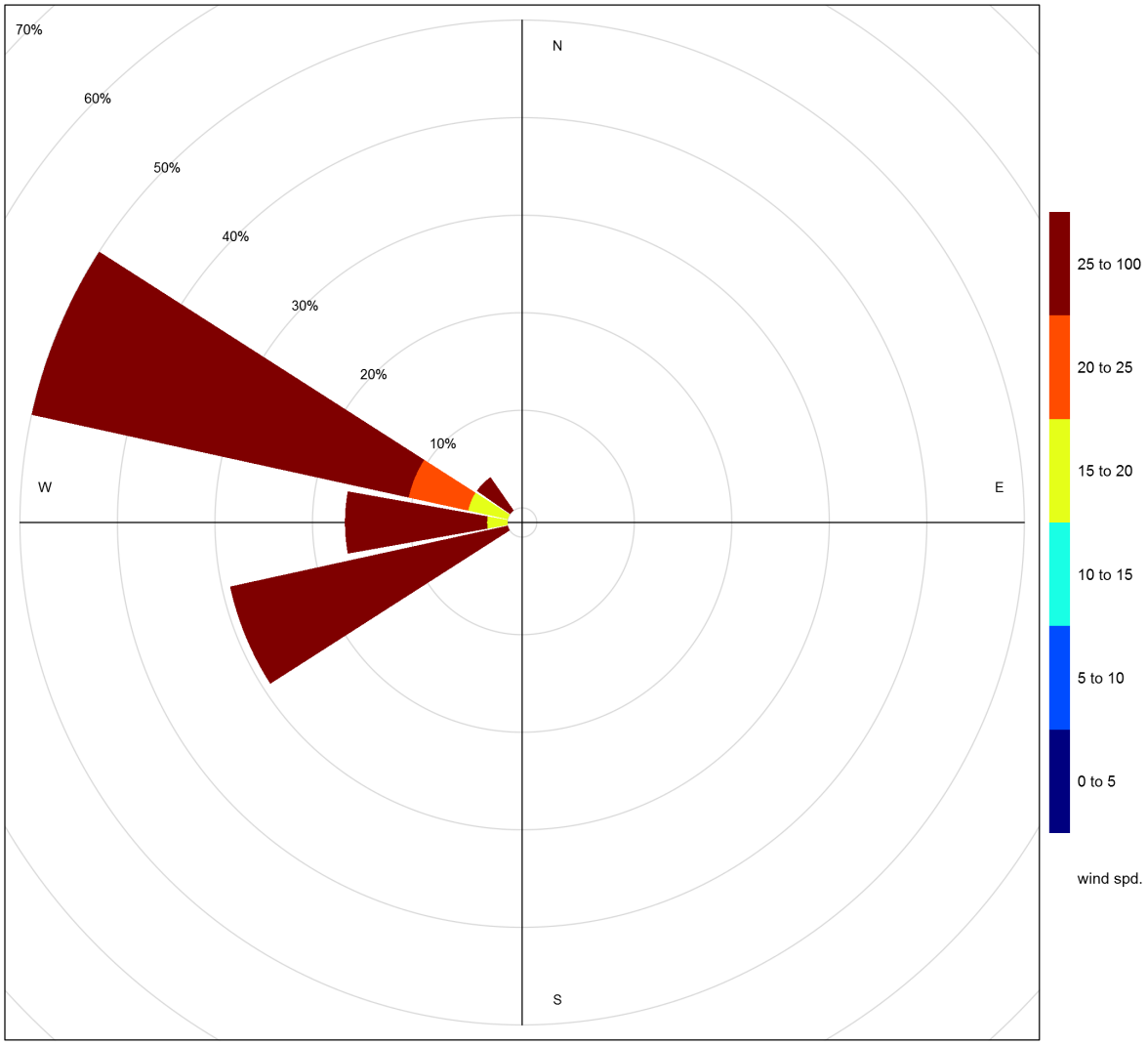


Figure 3-4 Wind rose for TSP exceedance days recorded at the Lagoon Station

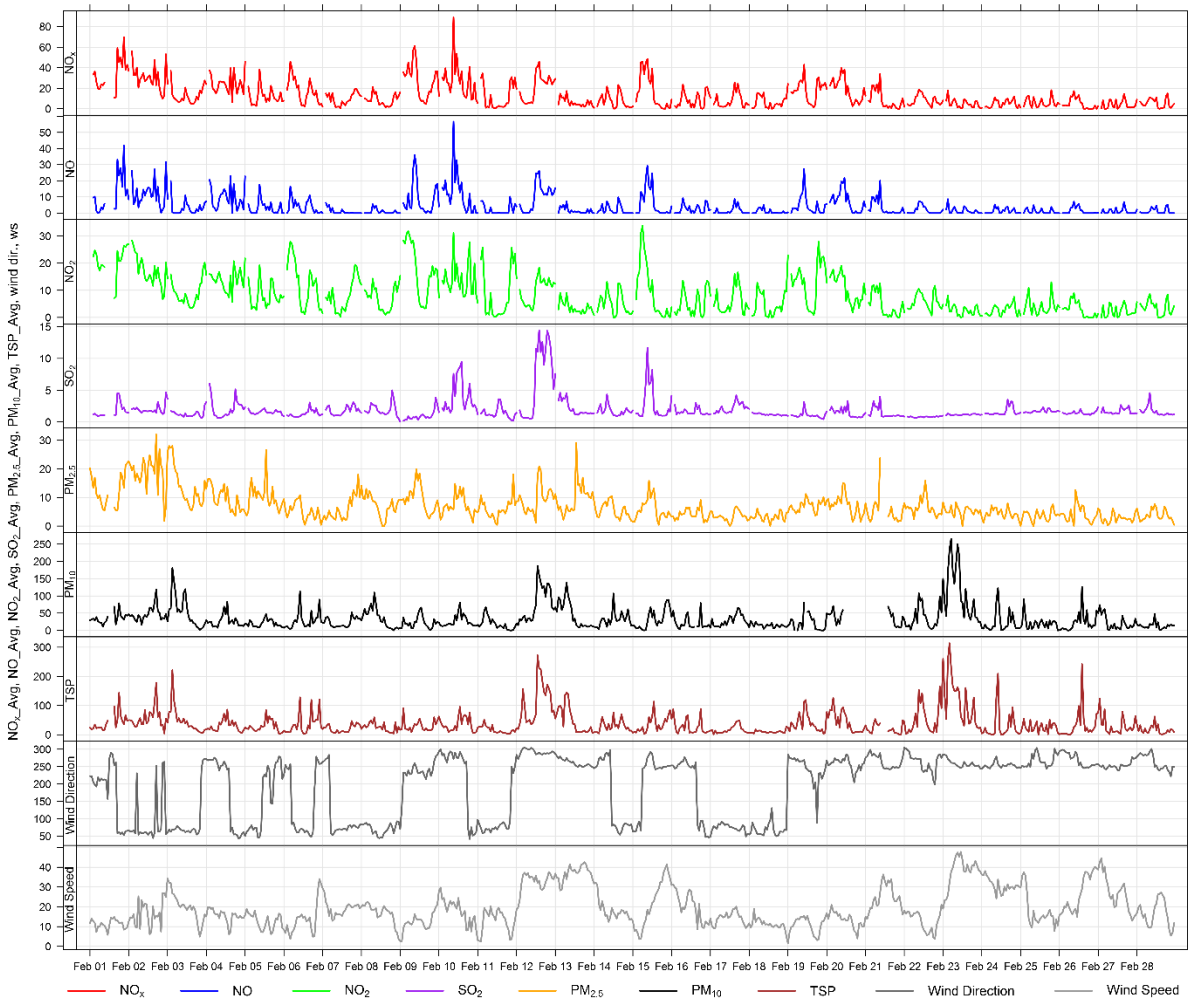


Figure 3-5 1-hour concentrations of NO_x, SO_2, particulate matter, wind direction and wind speed at the Lagoon Station

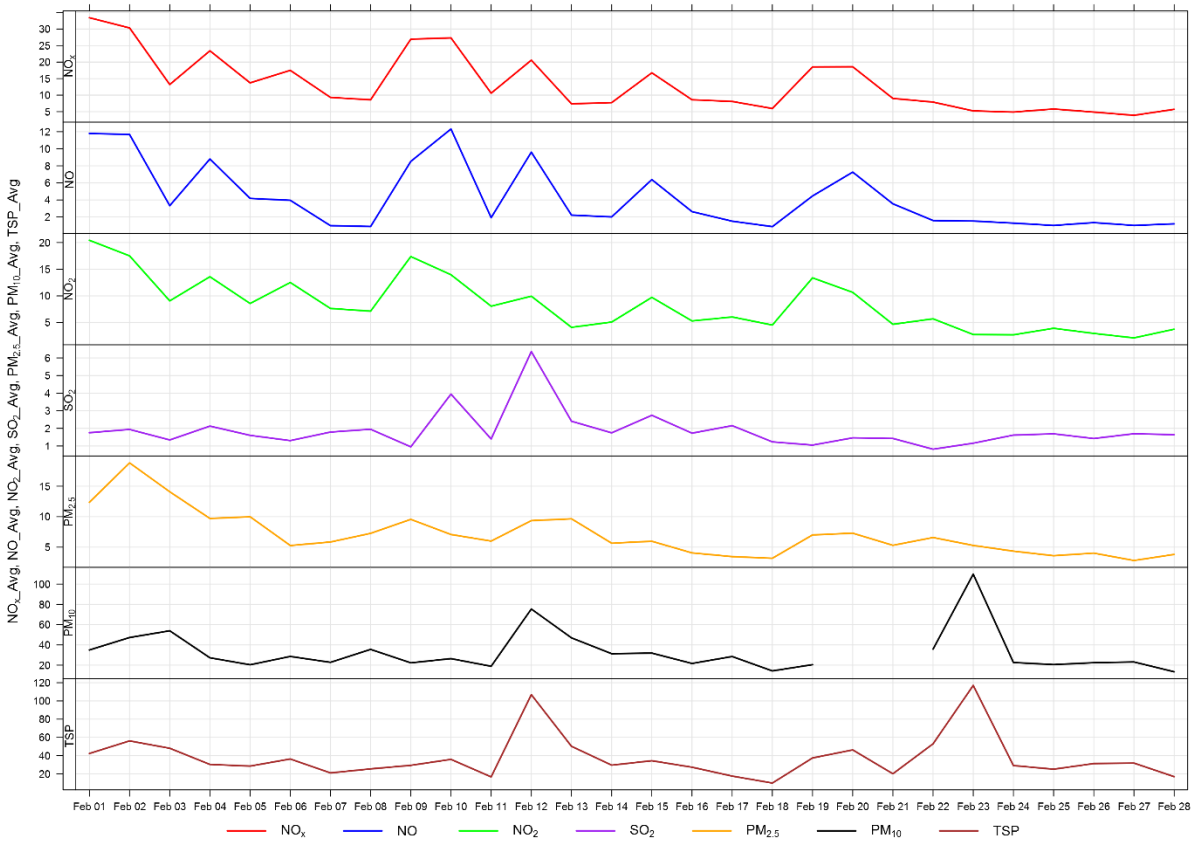


Figure 3-6 24-hour concentrations of NO_x, SO_2, and particulate matter at the Lagoon Station

Figure 3-7 through Figure 3-9 show the variation in concentrations over various time averaging periods for PM, SO_2 and NO_x. The particulate matter plot in Figure 3-7 shows that PM_{10} and TSP concentrations tended to rise through the morning before peaking mid-day and decreasing during the afternoon and evening. PM_{10} and TSP are generally associated with dust from fugitive sources. A less distinct diurnal pattern this month suggests that high wind conditions lead to more prevalent fugitive dust issues in the airshed in general during February. This is also supported by higher concentrations at the West GRIMM station that is indicative of background levels when winds are blowing from west to east.

Figure 3-8 shows the variation of SO_2 over various time periods. SO_2 concentrations were very low in February. Figure 3-9 shows the variation of NO_x, NO and NO_2, with the peak of all three pollutants occurring in the morning between 6 am and noon. This may be indicative of a peak in traffic.

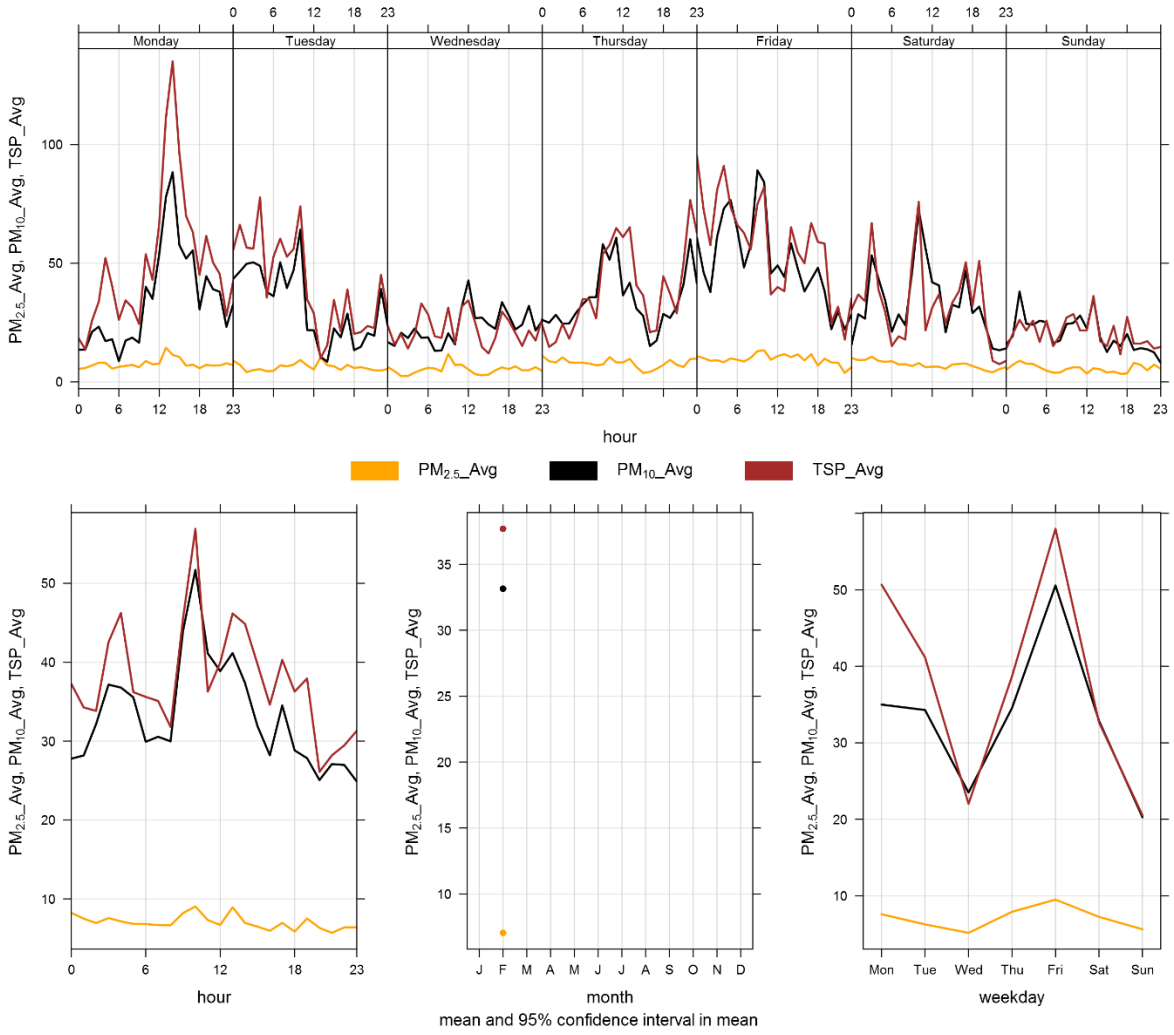


Figure 3-7 Lagoon Station particulate matter time variation

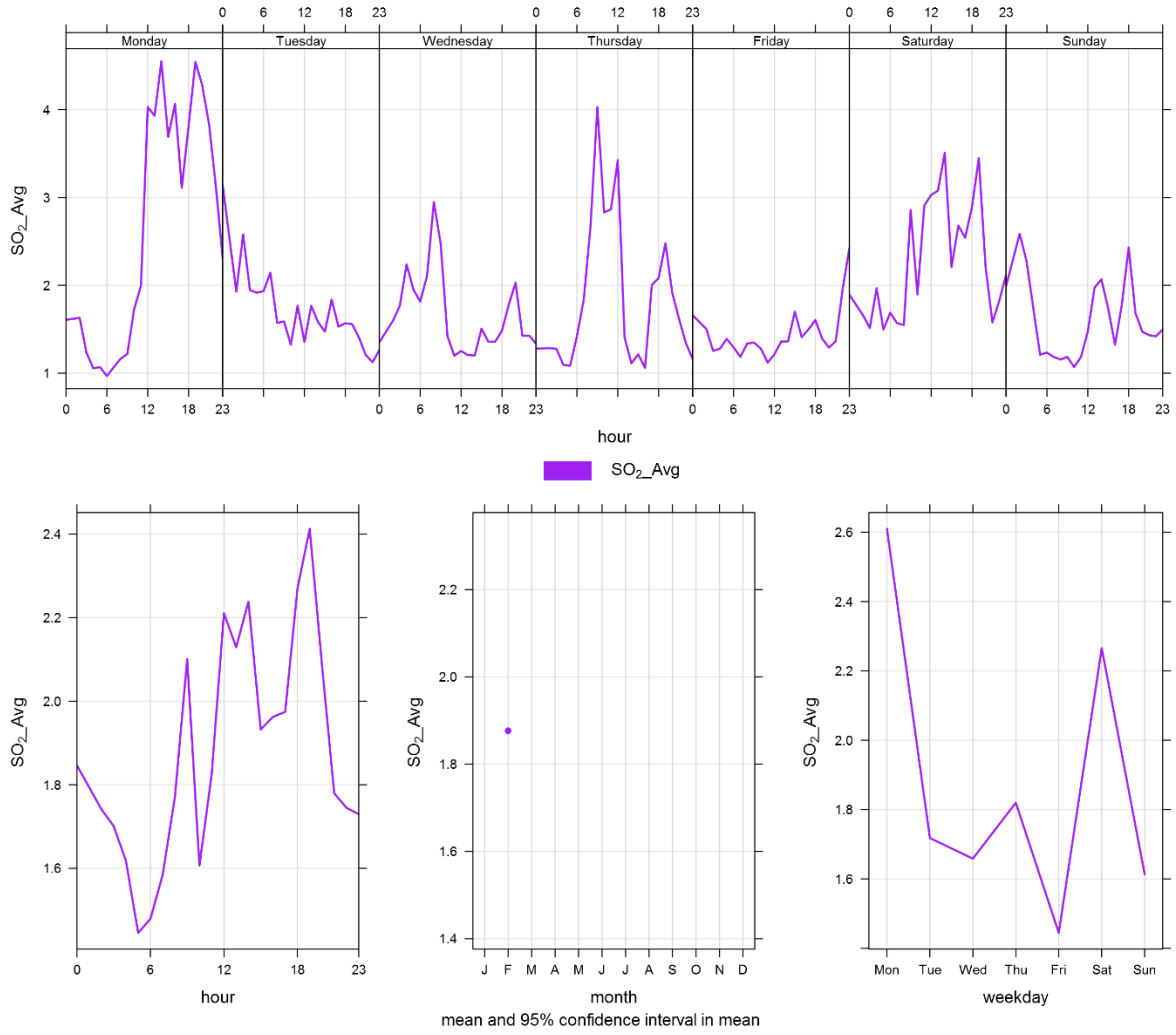


Figure 3-8 Lagoon Station SO_2 time variation

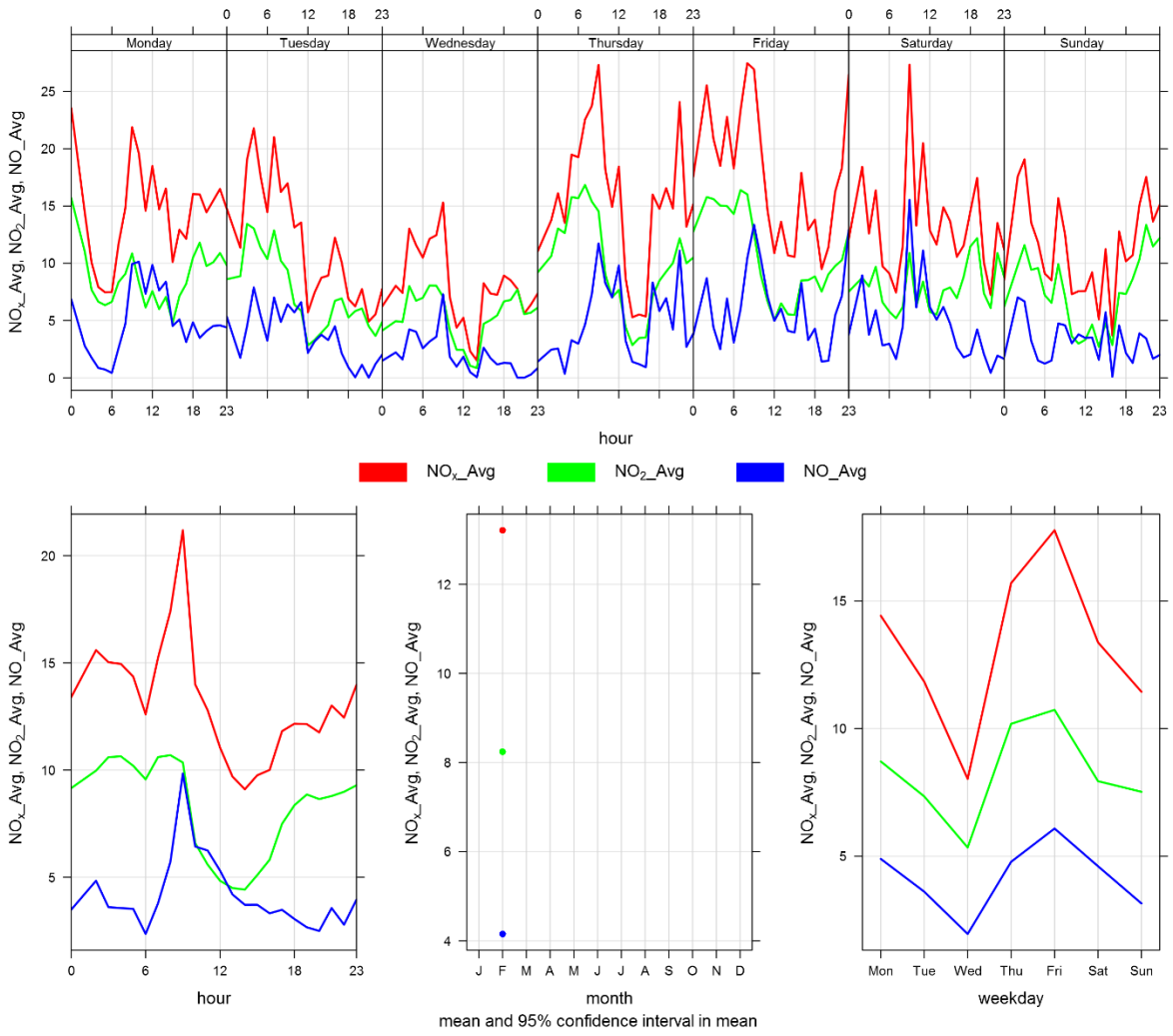


Figure 3-9 Lagoon Station NO_x time variation

4 WINDRIDGE STATION

4.1 SITE VISIT NOTES

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), site visit notes, wind rose (Figure 4-3) and tables and graphs illustrating the monitoring results for February 2018.

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

Table 4-1 Equipment at the Windridge monitoring location

Equipment Description	Parameter Measured
MetOne BAM-1020 FRM Continuous Particulate Monitor	$PM_{2.5}$ Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	PM_{10} Concentrations
MetOne BAM-1020 Continuous Particulate Monitor	TSP Concentrations

4.2 SITE VISIT NOTES

All BAM monitors were calibrated on February 1st and 21st, and the operation time for the all BAM monitors was 100% in February.

4.3 MONITORING RESULTS AND TRENDS

The following wind rose (Figure 4-3) illustrates the frequency of wind speed by wind direction for the month of February 2018. Table 4-2 summarizes the hourly and daily concentrations recorded in February 2018. Figure 4-4 illustrates the time series for hourly PM.

There were 9 exceedances of the 24-hour TSP (100 µg/m^3) and no exceedance of the $PM_{2.5}$ (30 µg/m^3) AAAQO.

Based on the limited data record at this station, it appears that PM concentrations at this station are highest during high wind speed events from the WSW. The wind rose (Figure 4-3) shows the 9 days exceeding the 24-hour TSP Objective. During the exceedance days, the winds were predominantly from the WSW and over 20 km/hr.

Table 4-2 Summary of February 2018 data at the Windridge Station

Parameter	Guideline / Objective		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ (µg/m^3)	80	30	Windridge	0	0	7.2	34.8	2	2	14.3	63.1	19.5	2	100.0
PM_{10} (µg/m^3)	-	-	Windridge	-	-	64.7	504.7	23	23	37.9	245.0	300.1	23	100.0
TSP (µg/m^3)	-	100	Windridge	-	9	96.4	504.1	23	22	38.5	253.5	405.3	23	100.0

Table 4-3 Days exceeding the Guideline for TSP and / or $PM_{2.5}$ 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						
2/2/2018	112.9	-	54.2	16.4	74.4	Wind from the east suggests source other than Lafarge
2/12/2018	140.6	-	292.8	32.3	50.8	high wind event
2/13/2018	149.8	-	261.4	37.1	48.7	high wind event
2/15/2018	125.5	-	254.9	21.4	57.5	high wind event
2/23/2018	405.3	-	257.2	37.9	42.8	high wind event
2/24/2018	213.6	-	253.1	31.0	39.6	high wind event
2/25/2018	155.6	-	261.1	17.8	47.4	
2/26/2018	190.4	-	264.2	26.4	47.7	high wind event
2/27/2018	202.8	-	251.7	27.3	36.3	high wind event
Total # of Exceedances	**9**	**0**				

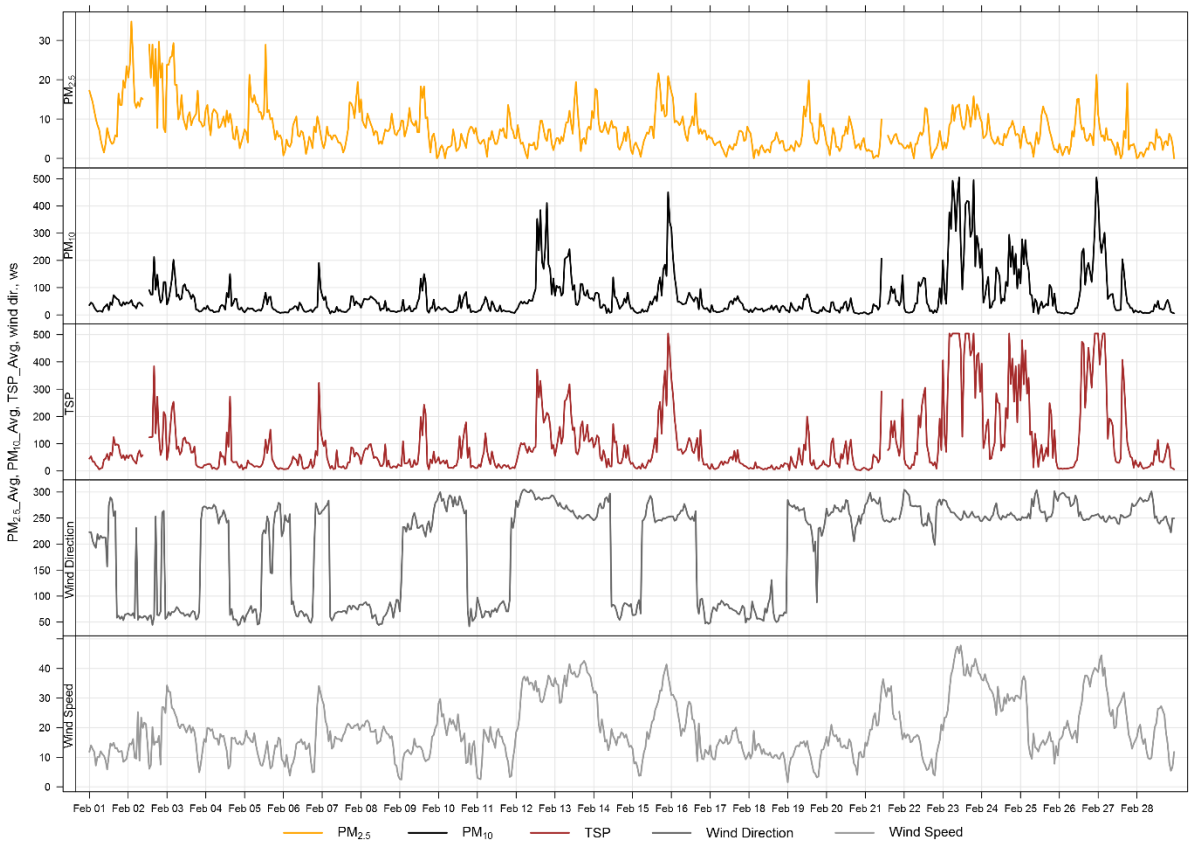


Figure 4-1 1-hour particulate matter concentrations recorded at the Windridge Station

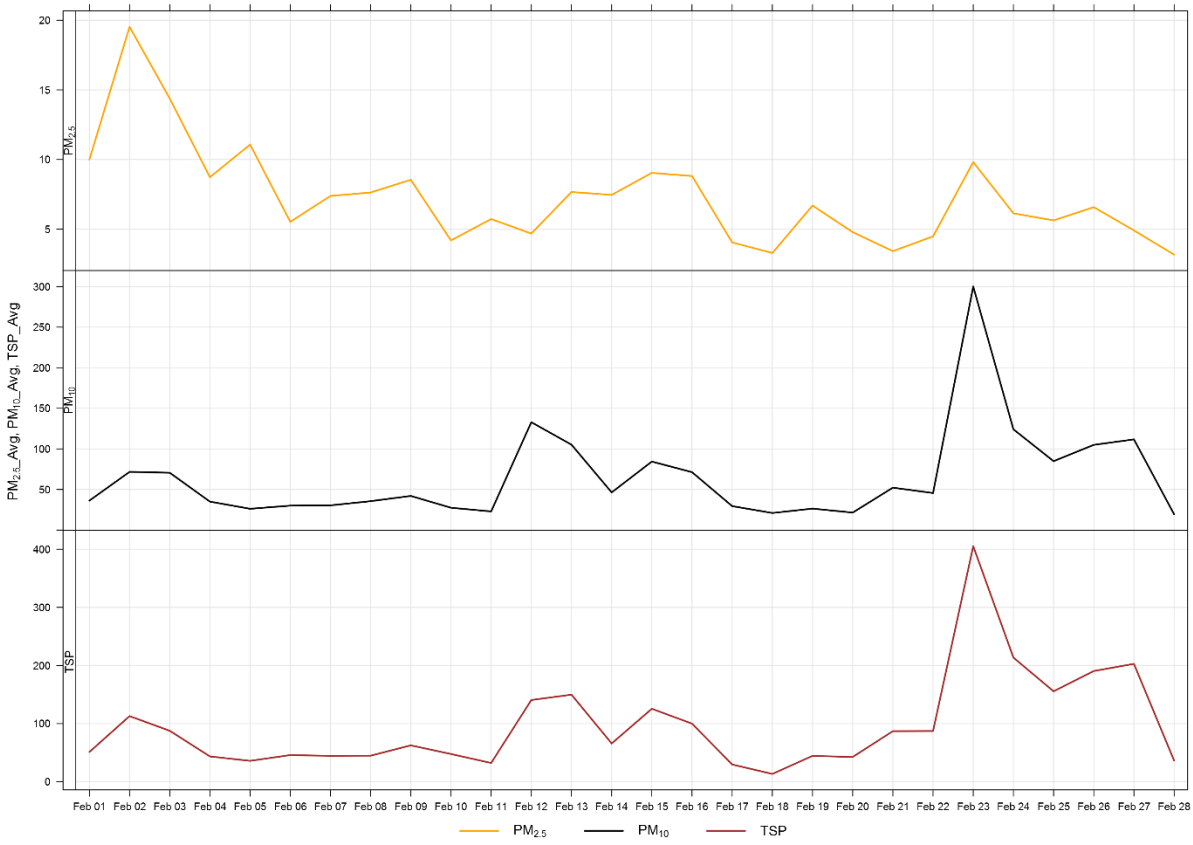


Figure 4-2 24-hour particulate matter concentrations at the Windridge Station

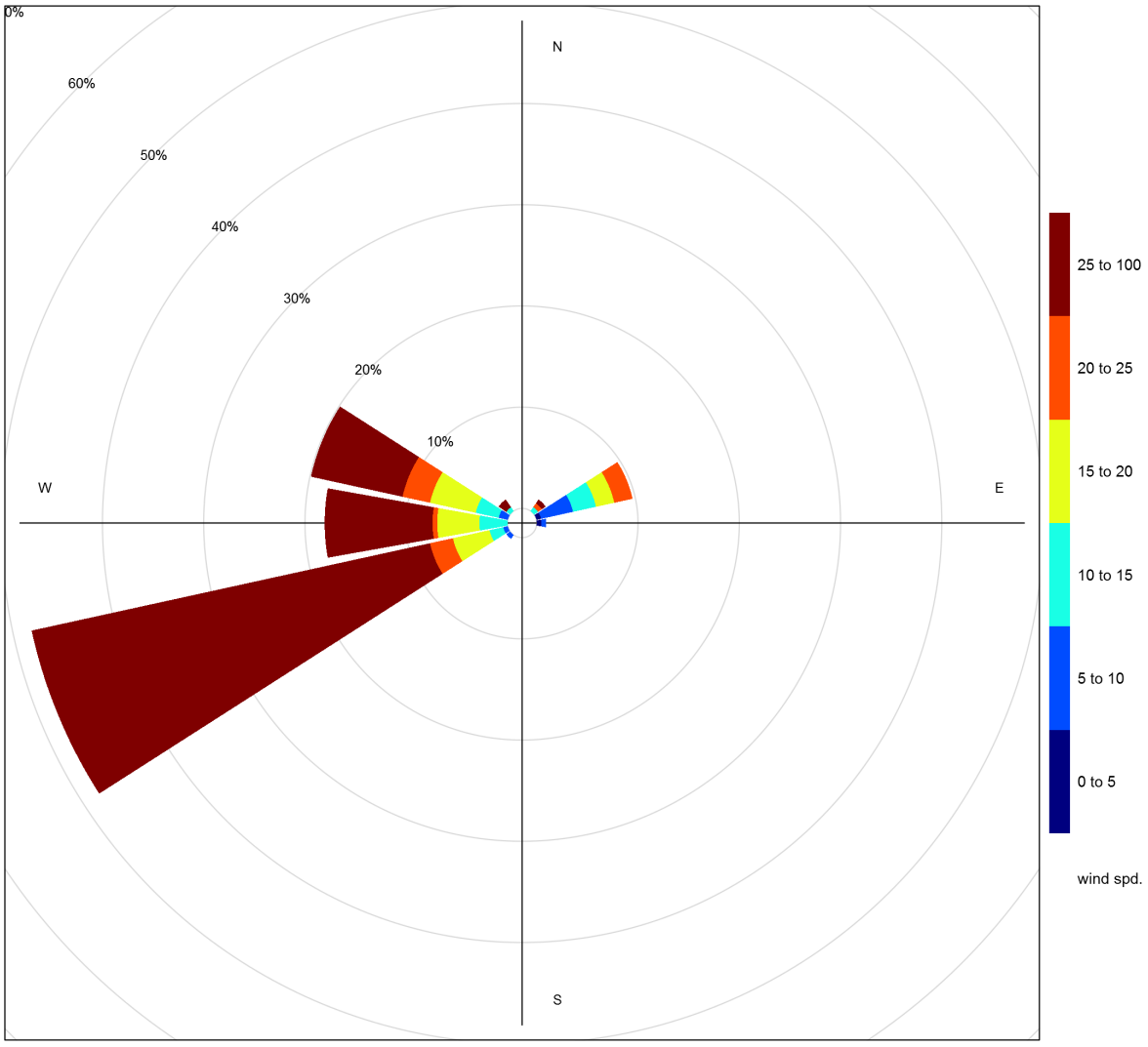


Figure 4-3 Wind rose for TSP exceedance days recorded at the Windridge Station

Figure 4-4 illustrates the hourly PM concentrations recorded at the Windridge Station, 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 4-4 is based on data collected during February 2018 and indicates a diurnal pattern that differs from the Lagoon station. The Windridge station shows a peak later in the day than the Lagoon station. Data from the Windridge station will be analyzed as the data record is added to at this station to see if the diurnal pattern of concentrations can be linked to emission sources, Lafarge or otherwise.

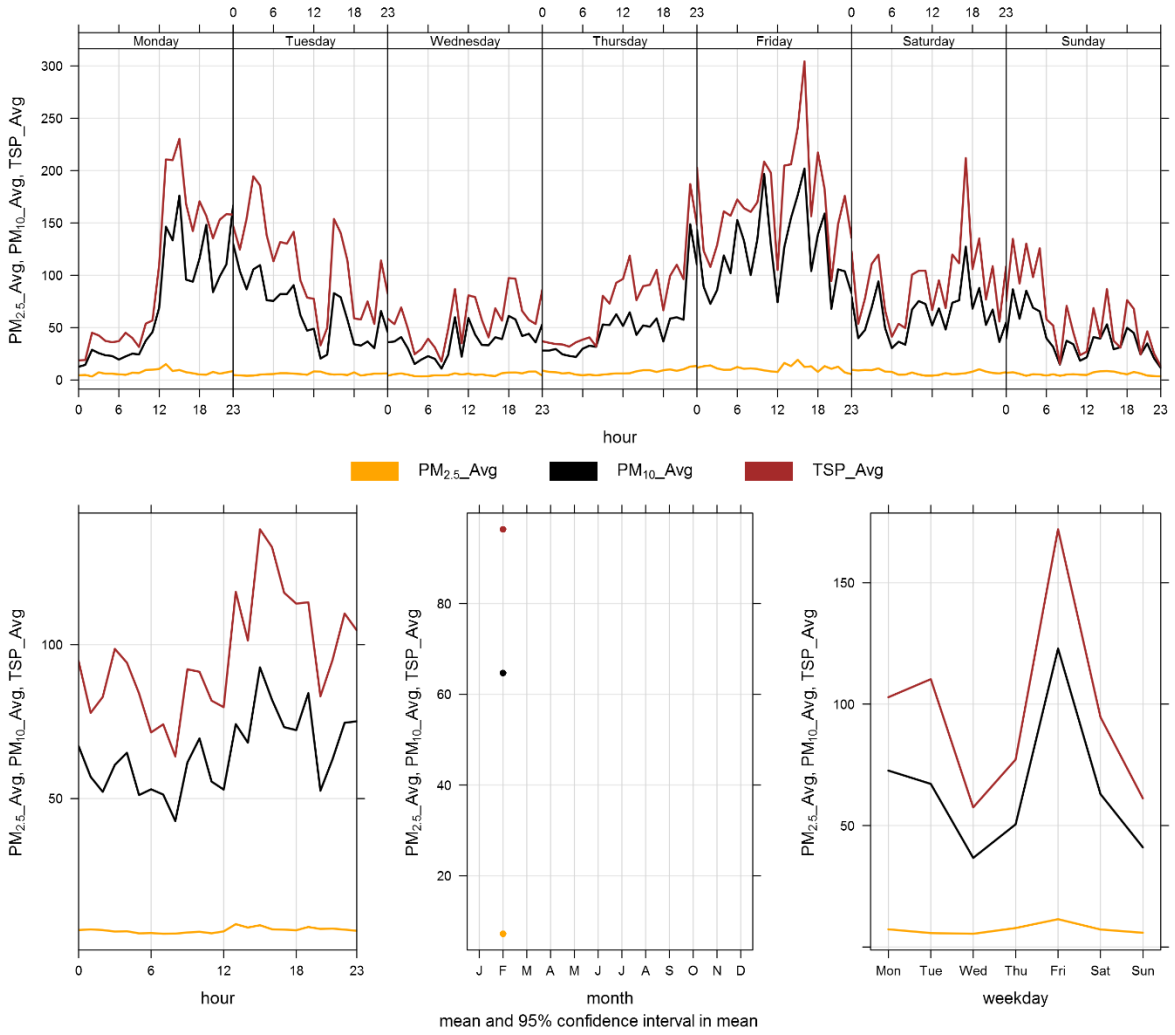


Figure 4-4 Windridge particulate matter time variation

5 WEST GRIMM

5.1 SITE VISIT NOTES

Table 5-1 indicates the equipment that is installed at the West monitoring location. During the month of February, the West GRIMM had 100 % uptime.

Table 5-1 Equipment at the West monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

5.2 MONITORING RESULTS AND TRENDS

The West GRIMM was installed in its current location in order to monitor “background” PM concentrations since the predominant wind pattern is from west to east in the valley. As indicated in Figure 3-3, the majority of winds came from the west during February. Table 5-2 summarizes the maximum 1-hour and 24-hour concentrations recorded over the course of the month.

Figure 5-1 and Figure 5-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. There were 3 and 0 exceedances of the 24-hour TSP (100 µg/m^3) and $PM_{2.5}$ (30 µg/m^3) Guidelines, respectively. The maximum number of exceedances of the TSP Guideline at the West monitor was 11 days exceeding the Guideline in 2010.

Table 5-2 Summary of February 2018 data at the West GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ ($\mu g/m^3$)	80	30	West	0	0	5.1	48.5	2	13	6.1	61.3	20.6	2	100.0
PM_{10} ($\mu g/m^3$)	-	-	West	-	-	14.7	216.8	26	12	23.6	253.4	47.2	2	100.0
TSP ($\mu g/m^3$)	-	100	West	-	3	51.7	705.7	3	9	21.0	66.7	244.0	3	100.0

Table 5-3 Days exceeding the Guideline for TSP and / or $PM_{2.5}$ at the West GRIMM

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)
West						
2/3/2018	244.0	-	65.4	20.1	74.2	high wind event
2/6/2018	113.3	-	15.8	13.4	71.3	
2/23/2018	103.4	-	257.2	37.9	42.8	high wind event
Total # of Exceedances	**3**	**0**				
Maximum # of Exceedances (February)	**11 (2010)**	**2 (2015)**				
Average # of Exceedances (February)	**3**	**0**				
Minimum # of Exceedances (February)	**0 (2016, 2017)**	**0 (2010, 2011, 2013, 2014, 2016, 2017)**				

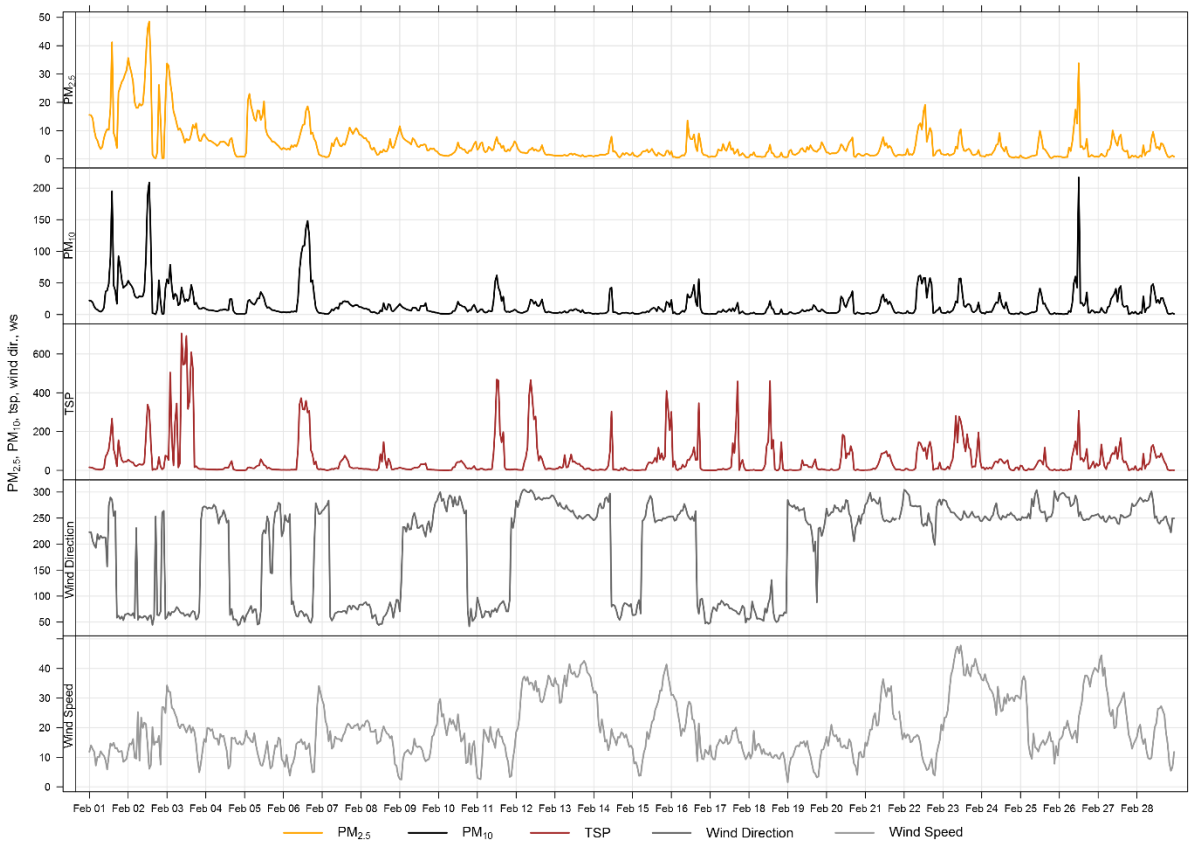


Figure 5-1 1-hour particulate matter concentrations at the West monitor

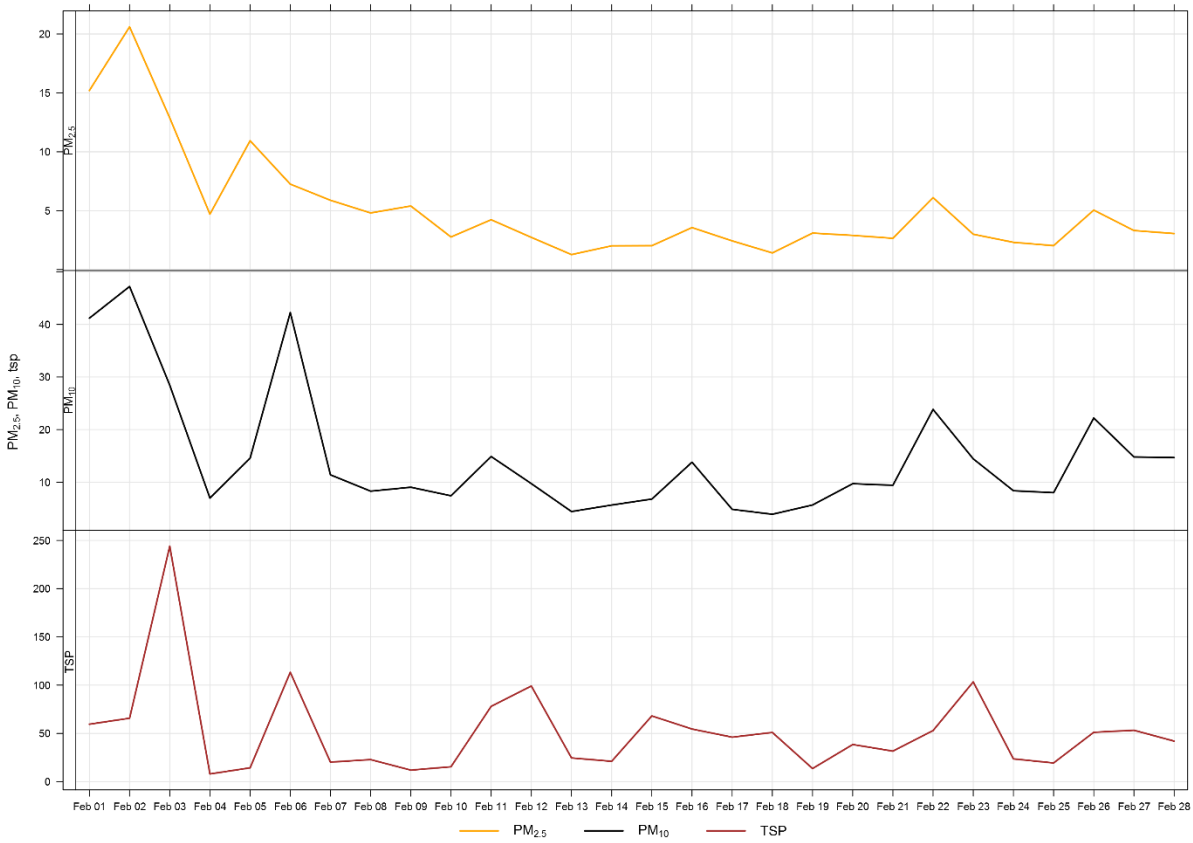


Figure 5-2 24-hour particulate matter concentrations at the West monitor

Figure 5-3 shows the wind rose for the 3 days which recorded a TSP exceedance. This wind rose shows that the winds come from both the east and west directions, but primarily the east.

Figure 5-4 illustrates the hourly PM concentrations recorded at the West 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 5-4 is based on data collected during February 2018 and indicates a strong relationship between TSP and hours which Lafarge is typically operational. Due to the proximity of the West monitor to the highway, the daily variations in PM may also be a result of higher traffic volume during daylight hours.

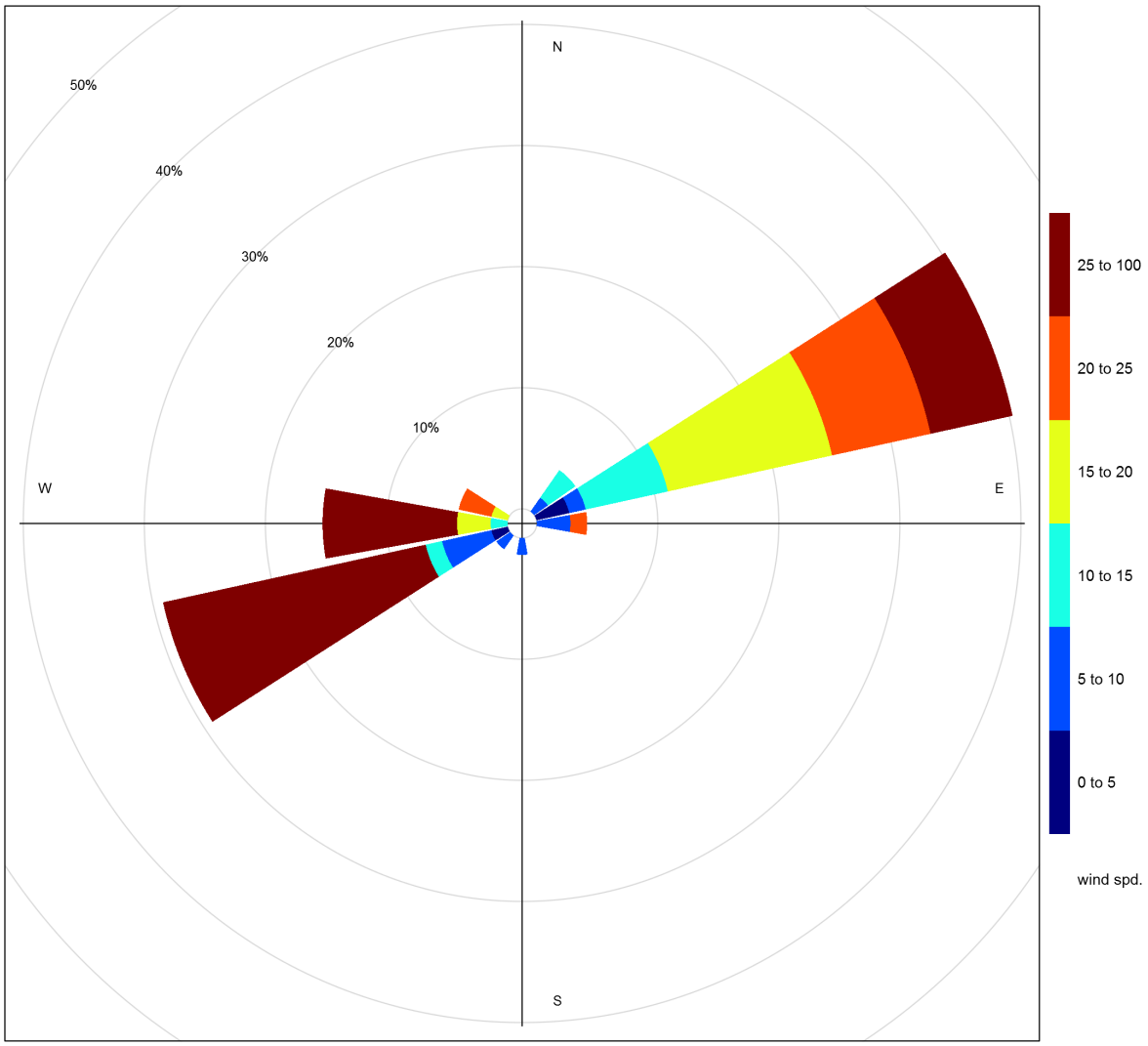


Figure 5-3 Wind rose for TSP exceedance days recorded at the West GRIMM

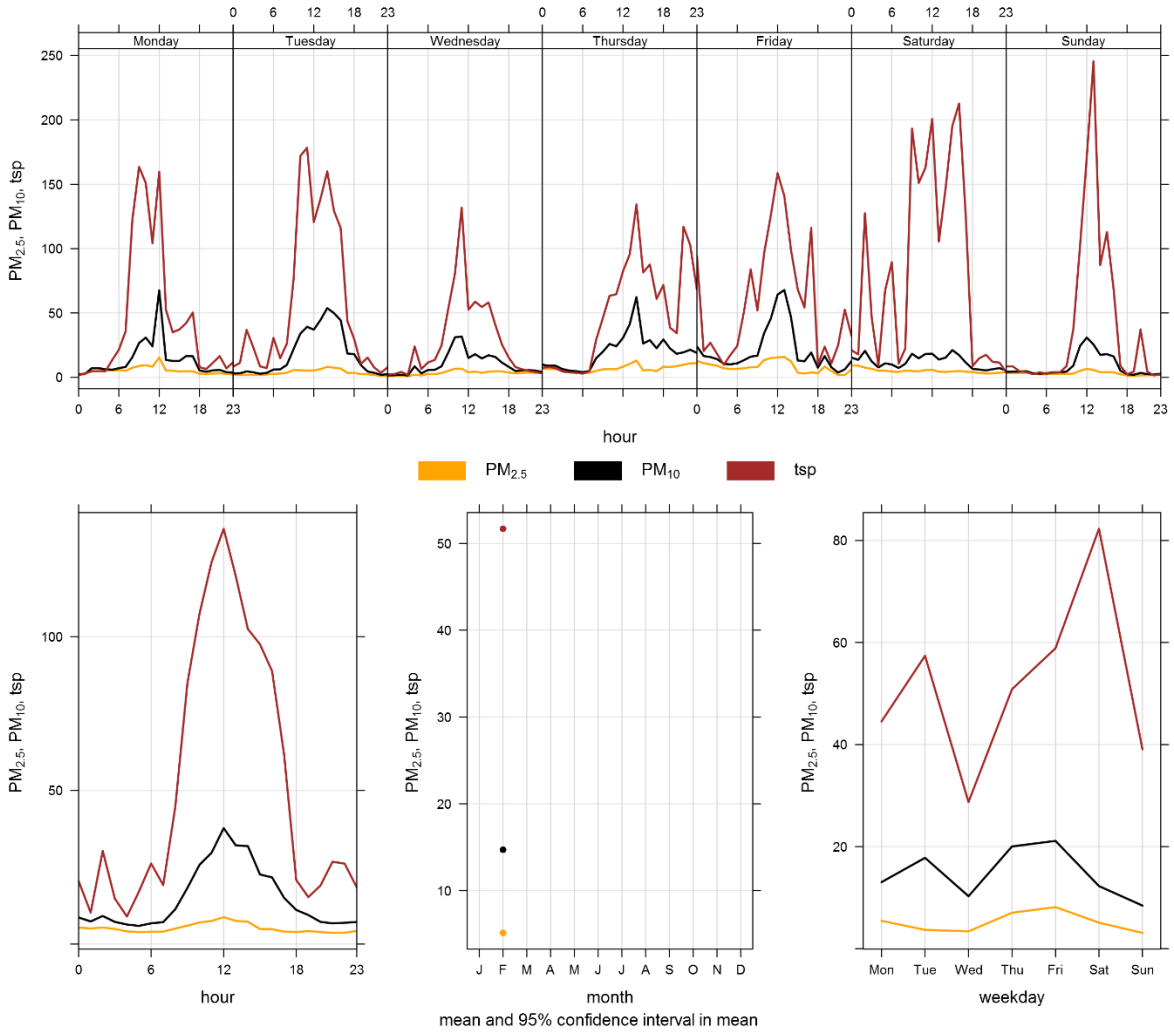


Figure 5-4 West particulate matter time variation

6 BERM GRIMM

6.1 SITE VISIT NOTES

During the month of February, the Berm GRIMM had 100% uptime.

Table 6-1 Equipment at the Berm monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

6.2 MONITORING RESULTS AND TRENDS

The Berm monitor was placed at its current location as a result of the dispersion modelling conducted for the facility in 2009. Figure 6-1 and Figure 6-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. Table 6-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month, and Table 6-3 summarizes the recorded exceedances.

In February, there were 14 and 1 exceedances of the 24-hour TSP (30 µg/m^3) and $PM_{2.5}$ (100 µg/m^3) Guidelines, respectively. Historically, the Berm monitor records an average of 17 and 0 exceedances of the 24-hour TSP and $PM_{2.5}$ Guidelines respectively, during the month of February. The largest number of TSP exceedances recorded during February occurred in 2013, which had 24 days that exceeded the Guideline. The fewest number of TSP exceedances were recorded during February 2015, which had 9 days that exceeded the Guideline. The largest number of $PM_{2.5}$ exceedances recorded during February occurred in 2011, 2015, and 2016, which each had a single day that exceeded the Guideline.

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. High TSP concentrations in the month generally corresponded to the high wind speed events recorded in February.

Table 6-2 Summary of February 2018 data at the Berm GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ (µg/m^3)	80	30	Berm	1	1	10.1	86.4	23	9	47.4	251.9	40.6	23	100.0
PM_{10} (µg/m^3)	-	-	Berm	-	-	62.4	834.9	23	9	47.4	251.9	356.2	23	100.0
TSP (µg/m^3)	-	100	Berm	-	14	228.9	3099.2	23	9	47.4	251.9	1284.1	23	100.0

Table 6-3 Days exceeding the Guideline for TSP and / 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						
2/2/2018	119.9	-	54.2	16.4	74.4	Wind from the east suggests source other than Lafarge
2/12/2018	501.5	-	292.8	32.3	50.8	high wind event
2/13/2018	447.6	-	261.4	37.1	48.7	high wind event
2/15/2018	535.3	-	254.9	21.4	57.5	high wind event
2/16/2018	186.6	-	257.0	20.4	53.8	high wind event
2/19/2018	100.2	-	250.7	10.5	65.9	
2/20/2018	117.5	-	260.2	13.5	63.6	
2/21/2018	465.5	-	261.7	24.6	50.1	high wind event
2/22/2018	136.3	-	273.0	12.8	55.9	
2/23/2018	1284.1	41	257.2	37.9	42.8	high wind event
2/24/2018	642.7	-	253.1	31.0	39.6	high wind event
2/25/2018	254.9	-	261.1	17.8	47.4	
2/26/2018	512.7	-	264.2	26.4	47.7	high wind event
2/27/2018	438.0	-	251.7	27.3	36.3	high wind event
Total # of Exceedances	**14**	**1**				
Maximum # of Exceedances (February)	**24 (2013)**	**1 (2011, 2015, 2016)**				
Average # of Exceedances (February)	**17**	**0**				
Minimum # of Exceedances (February)	**9 (2015)**	**0 (2010, 2012 ~ 2014, 2017)**				

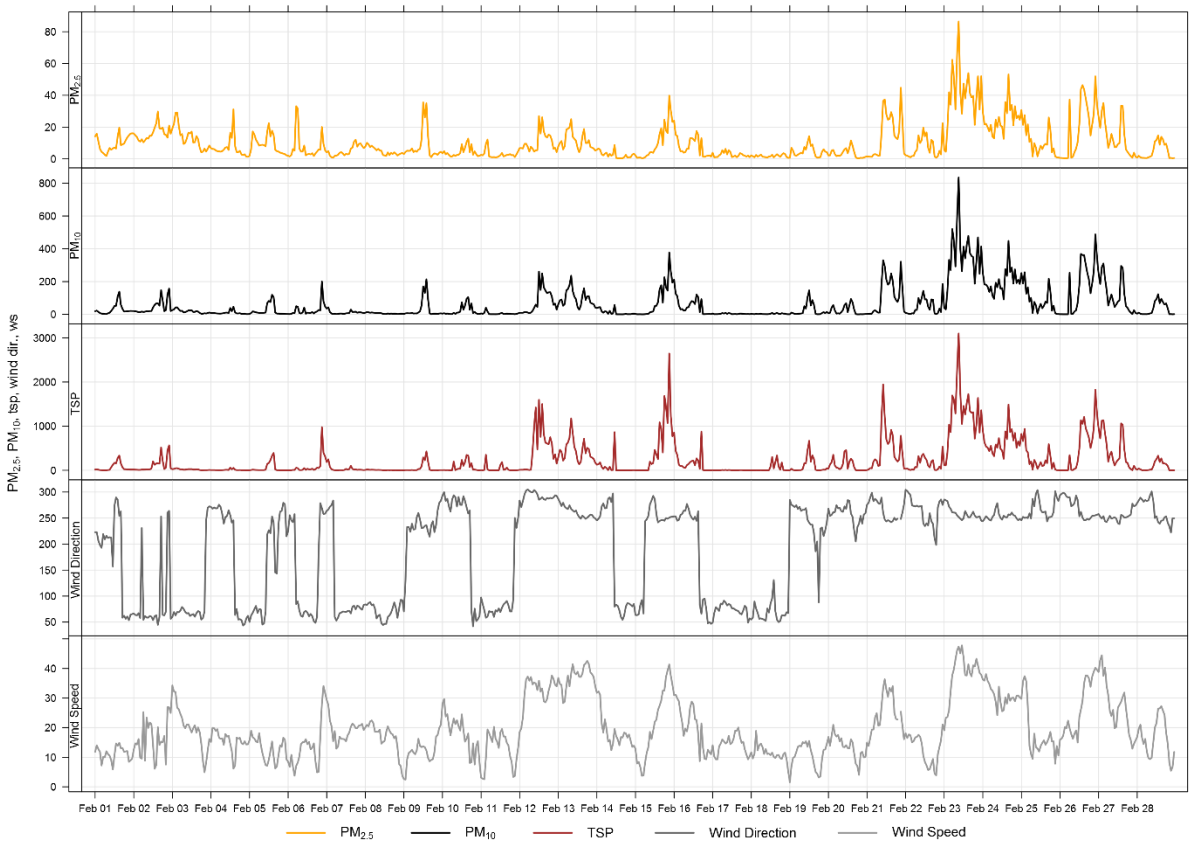


Figure 6-1 1-hour particulate matter concentrations recorded at the Berm monitor

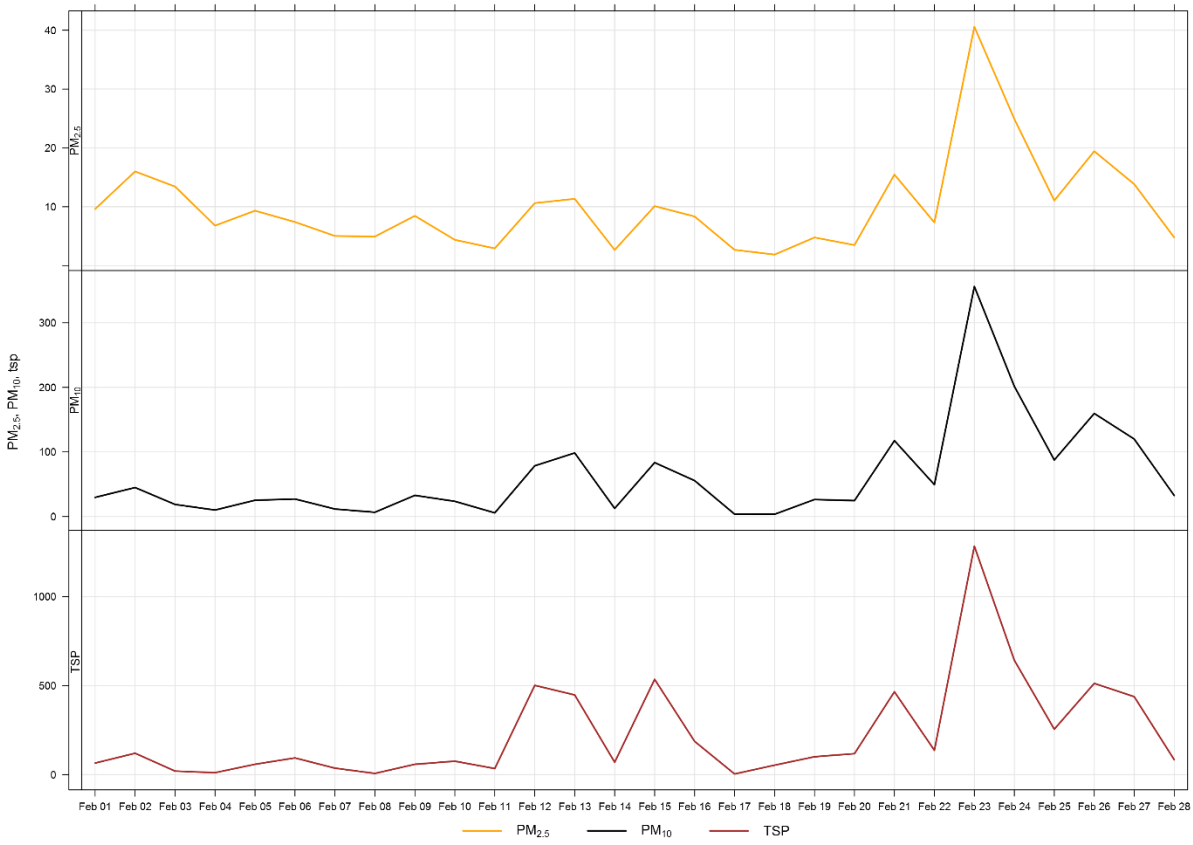


Figure 6-2 24-hour particulate matter concentrations recorded at the Berm monitor

Figure 6-3 and Figure 6-4 show the wind rose for the 14 TSP exceedances and 1 $PM_{2.5}$ exceedance. This wind roses show that the winds predominantly come from the west and over 25 km/kr.

Figure 6-5 shows the variation of PM recorded at the Berm monitor over various time averaging periods. The Berm, on average, records elevated PM concentrations during standard operating hours of Lafarge.

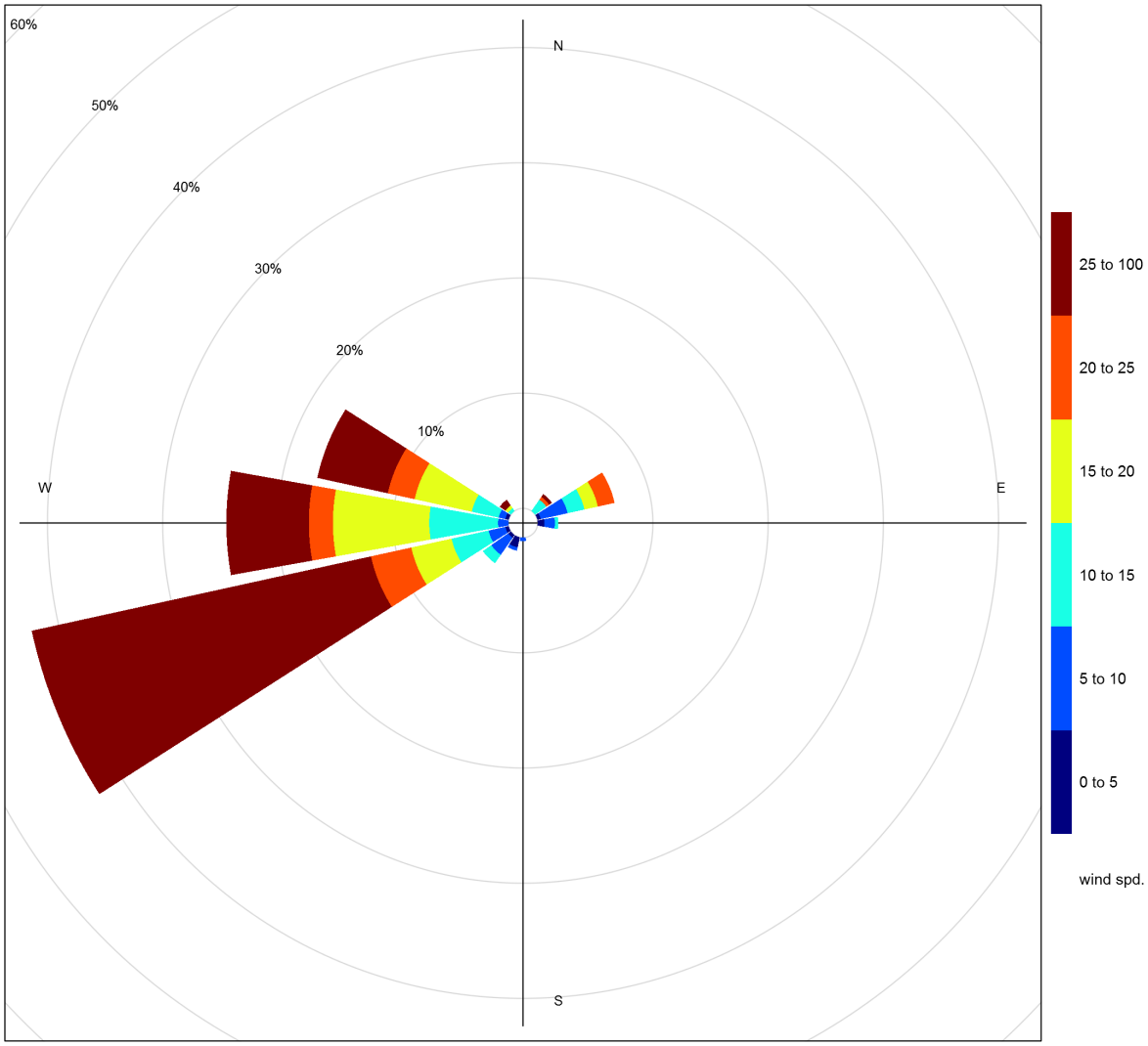


Figure 6-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM

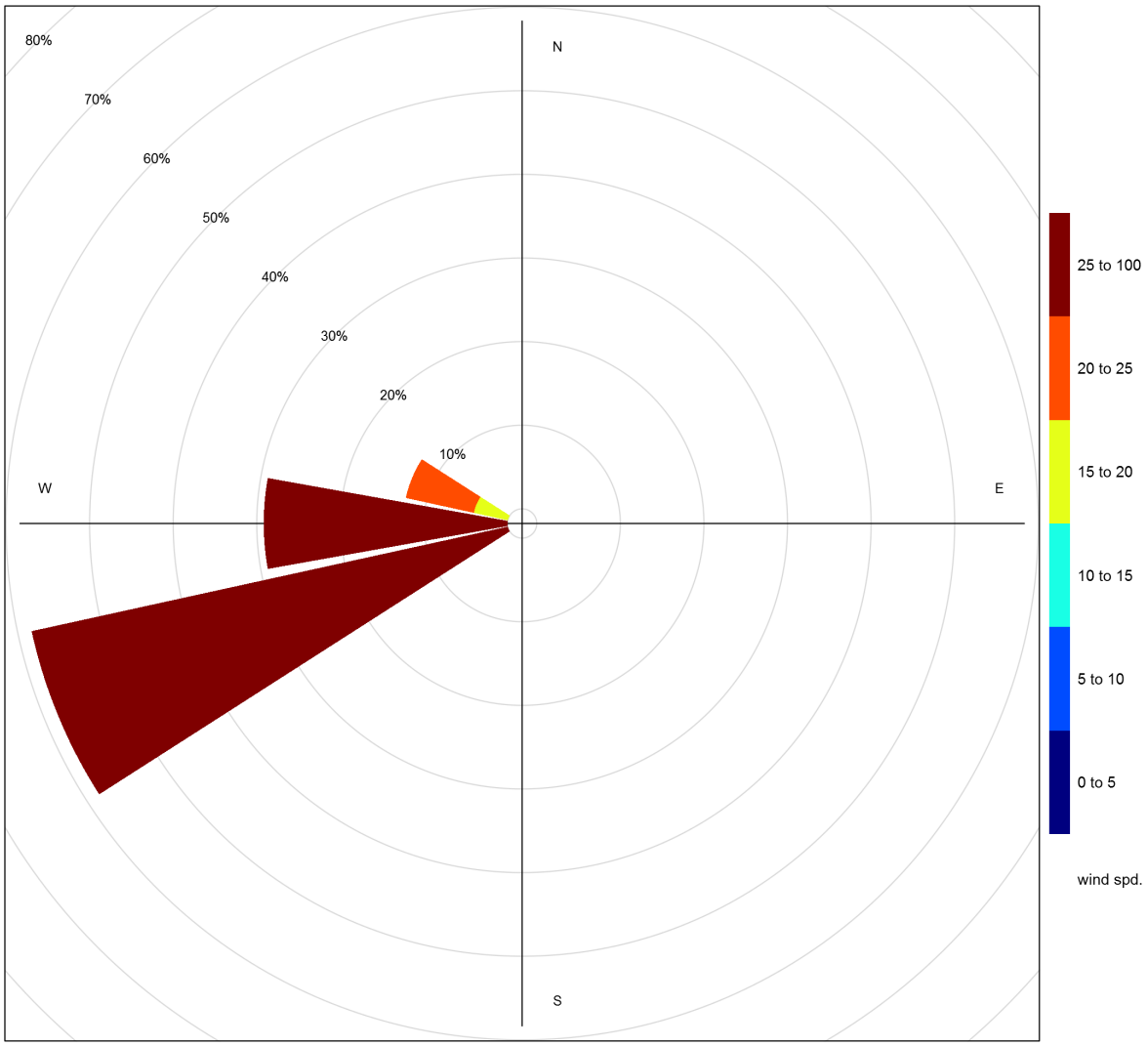


Figure 6-4 Wind rose for PM2.5 exceedance days recorded at the Berm GRIMM

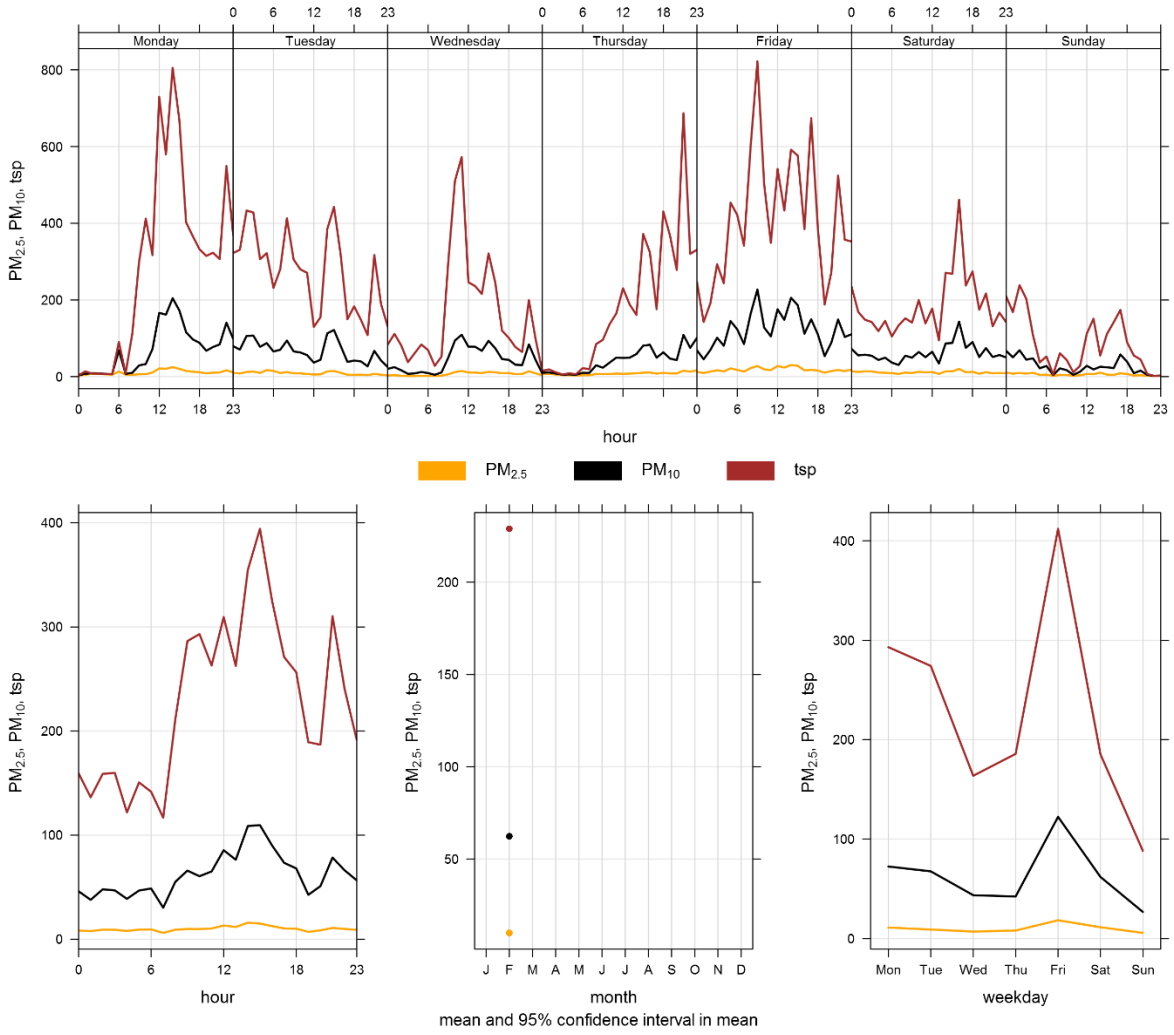


Figure 6-5 Berm particulate matter time variation

7 ENTRANCE GRIMM

7.1 SITE VISIT NOTES

This station was found to be in good operating condition and no repairs were required during the month. During the month of February, the Entrance GRIMM had 100% uptime.

Table 7-1 Equipment at the Entrance monitoring location

Equipment Description	Parameter Measured
GRIMM 365 Continuous Particulate Monitor	$PM_{2.5}$, PM_{10}, TSP Concentrations

7.2 MONITORING RESULTS AND TRENDS

The Entrance monitor was placed at its current location as a result of dispersion modelling conducted in 2009. This area was indicated as being the area where the maximum PM concentrations were expected. Figure 7-1 and Figure 7-2 show the hourly and daily $PM_{2.5}$, PM_{10} and TSP concentrations recorded over the month. Table 7-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month. Table 7-3 summarizes the recorded exceedances.

During February, there were 15 and 0 exceedances of the 24-hour TSP (100 µg/m^3) and $PM_{2.5}$ (30 µg/m^3) Guideline, respectively. Historically, the Entrance monitor records an average of 16 and 0 exceedances of the 24-hour TSP and $PM_{2.5}$ Guidelines respectively, during the month of February. The largest number of TSP exceedances recorded during February occurred in 2014, which had 25 days that exceeded the Guideline. The fewest number of TSP exceedances recorded during February occurred in 2011, which had 6 days that exceeded the Guideline. The largest number of $PM_{2.5}$ exceedances recorded during February occurred in 2015, which had 2 days that exceeded the Guideline.

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 Entrance monitor is impacted by fugitive dust from plant activities, and the high wind events described under the Berm monitor section. Trucks also pass near to the Entrance monitor as they enter the Lafarge facility for loading. Additionally, the monitor is closely located to Highway 1A. Traffic, particularly large trucks, can create dust while crossing over the railway tracks. This can all lead to the monitor recording high TSP concentrations, which are typically associated with fugitive dust sources.

Figure 7-3 shows the wind roses for the days that exceeded the TSP Guidelines at the Entrance GRIMM. During the 15 TSP exceedance days, winds were predominantly from the west and above 25 km/hr.

Table 7-2 Summary of February 2018 data at the Entrance GRIMM

Parameter	Guideline		Station	Exceedances		Monthly Average	Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr		Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
$PM_{2.5}$ ($\mu g/m^3$)	80	30	Entrance	0	0	10.9	73.0	19	7	13.7	263.7	25.6	12	100.0
PM_{10} ($\mu g/m^3$)	-	-	Entrance	-	-	43.8	645.9	12	11	32.7	295.5	192.0	12	100.0
TSP ($\mu g/m^3$)	-	100	Entrance	-	15	220.2	3319.1	23	9	47.4	251.9	1271.7	12	100.0

Table 7-3 Days exceeding the Guideline for TSP at the Entrance 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)
Entrance						
2/2/2018	131.5	-	54.2	16.4	74.4	wind from the east suggests source other than Lafarge
2/3/2018	104.9	-	65.4	20.1	74.2	high wind event; wind from the east suggests source other than Lafarge
2/10/2018	308.2	-	290.8	18.4	61.0	
2/12/2018	1271.7	-	292.8	32.3	50.8	high wind event
2/13/2018	479.3	-	261.4	37.1	48.7	high wind event
2/15/2018	413.0	-	254.9	21.4	57.5	high wind event
2/19/2018	110.8	-	250.7	10.5	65.9	
2/20/2018	326.7	-	260.2	13.5	63.6	
2/21/2018	509.9	-	261.7	24.6	50.1	high wind event
2/22/2018	268.5	-	273.0	12.8	55.9	
2/23/2018	753.1	-	257.2	37.9	42.8	high wind event
2/25/2018	139.5	-	261.1	17.8	47.4	
2/26/2018	400.3	-	264.2	26.4	47.7	high wind event
2/27/2018	227.0	-	251.7	27.3	36.3	high wind event
2/28/2018	116.5	-	261.7	16.6	44.7	
Total # of Exceedances	**15**	**0**				
Maximum # of Exceedances (February)	**25 (2014)**	**2 (2015)**				
Average # of Exceedances (February)	**16**	**0**				
Minimum # of Exceedances (February)	**6 (2011)**	**0 (2010, 2011, 2013, 2016, 2017)**				

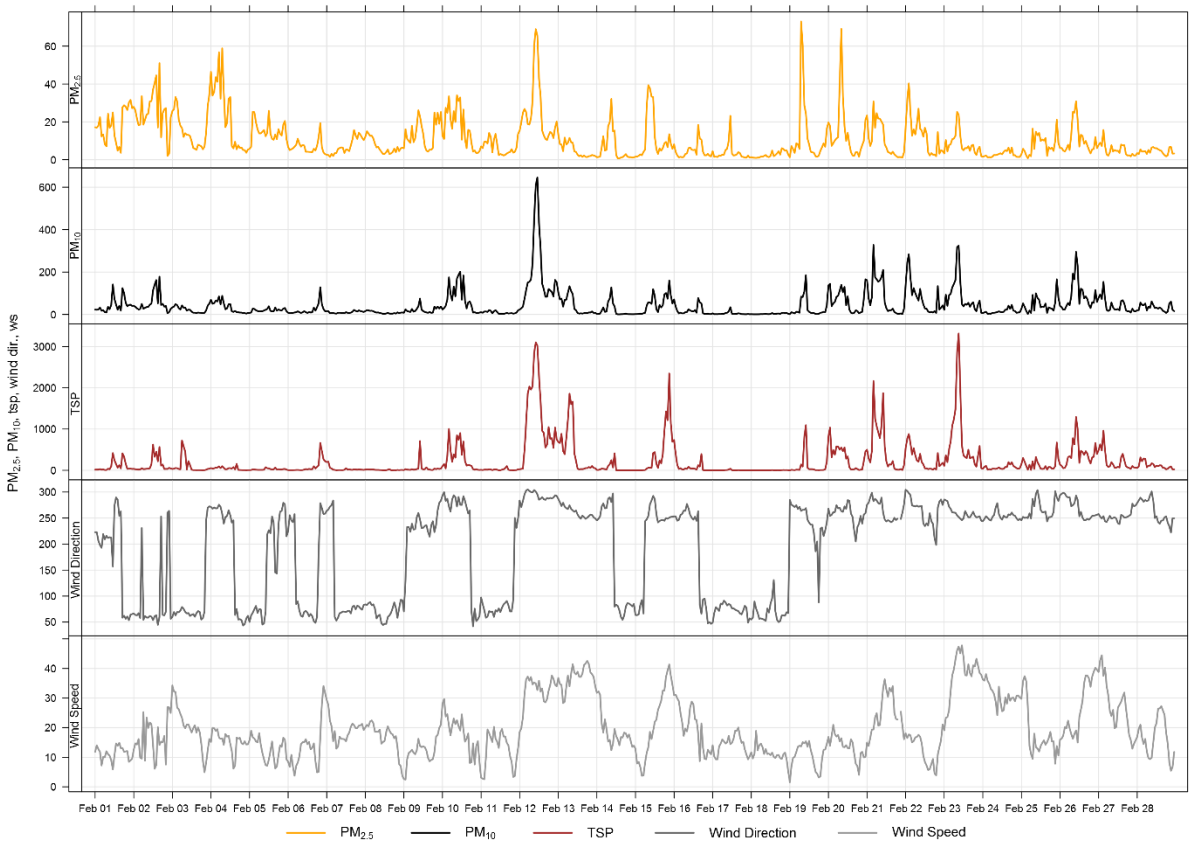


Figure 7-1 1-hour particulate matter concentrations recorded at the Entrance monitor

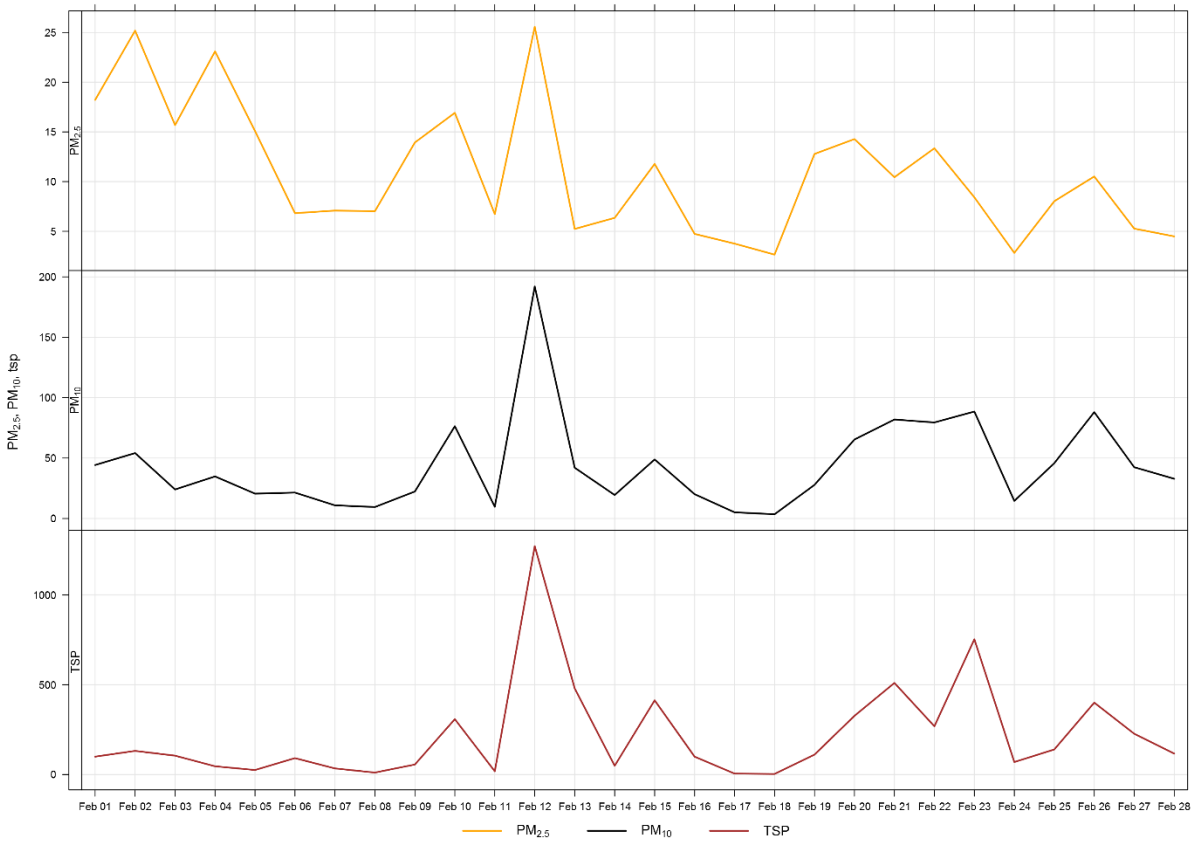


Figure 7-2 24-hour particulate matter concentrations at the Entrance monitor

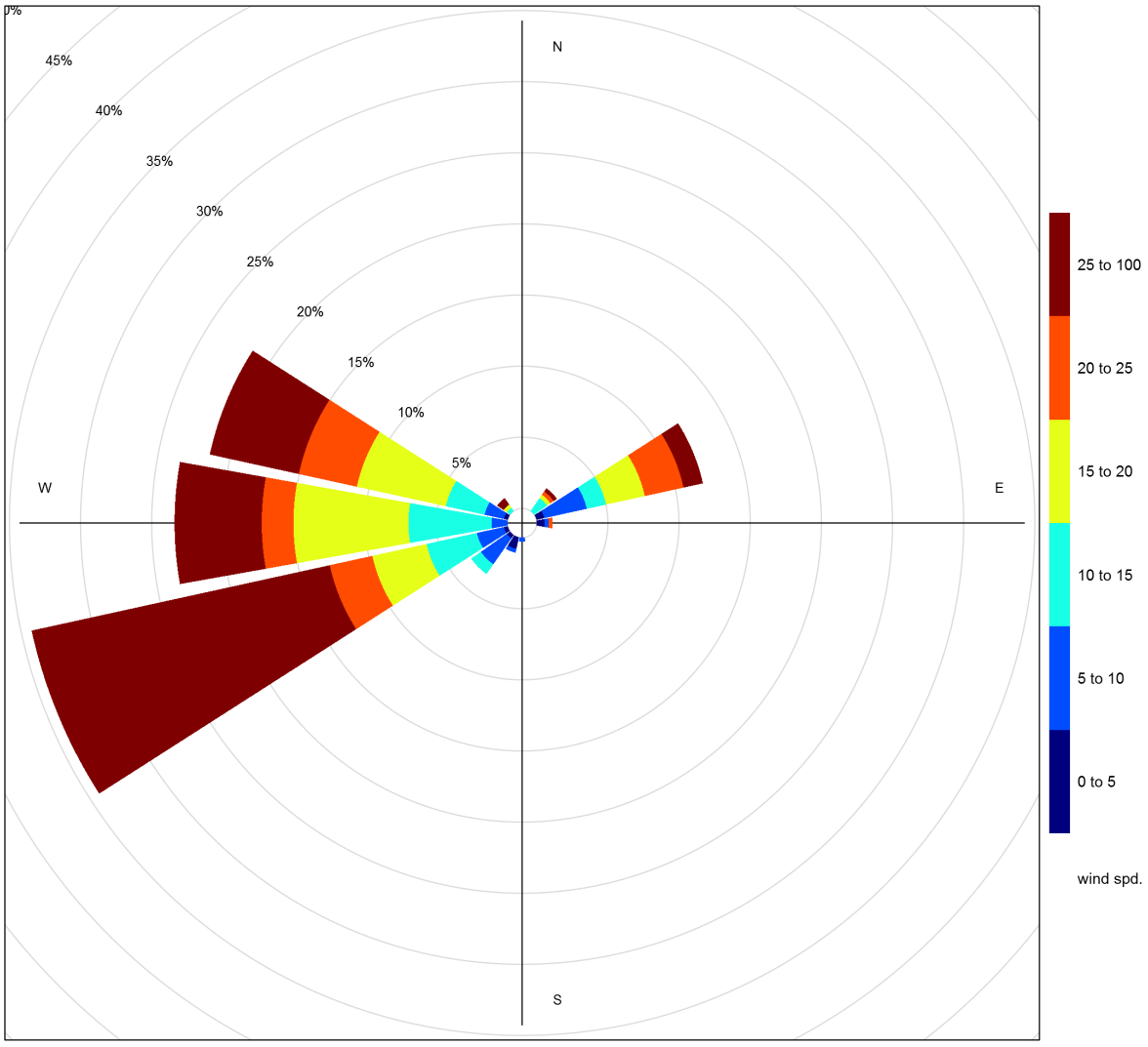


Figure 7-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

Figure 7-4 illustrates the hourly PM concentrations recorded at the Entrance 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 7-4 is based on data collected during February 2018 and shows that the diurnal pattern of higher PM concentrations was shifted earlier in the day during February 2018.

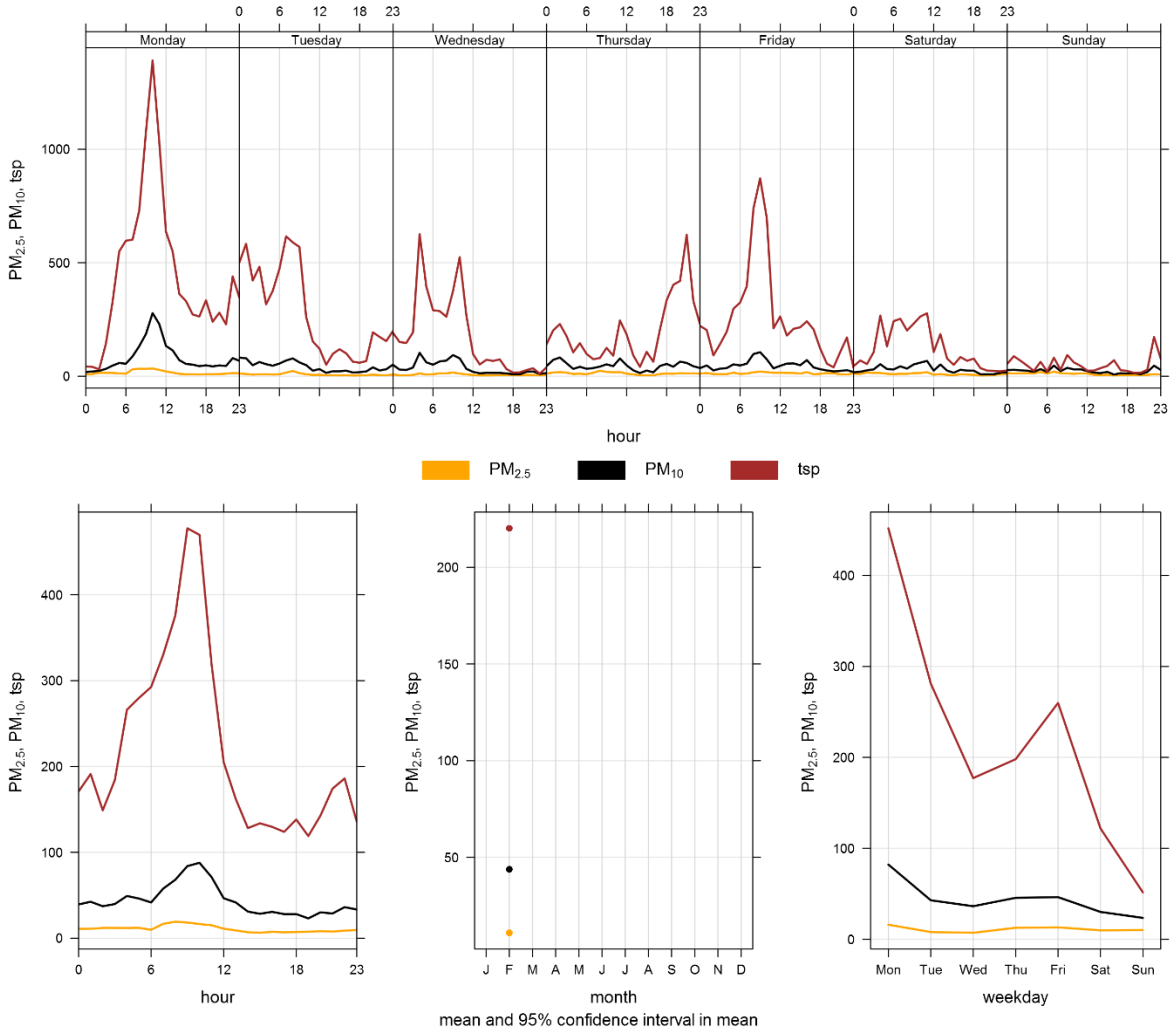


Figure 7-4 Entrance particulate matter time variation

BIBLIOGRAPHY

- Alberta Environment and Parks. (2016, June). Alberta Ambient Air Quality Objectives and Guidelines Summary. Alberta, Canada.
- Alberta Environment and Parks. (2016, February). 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, Canada.

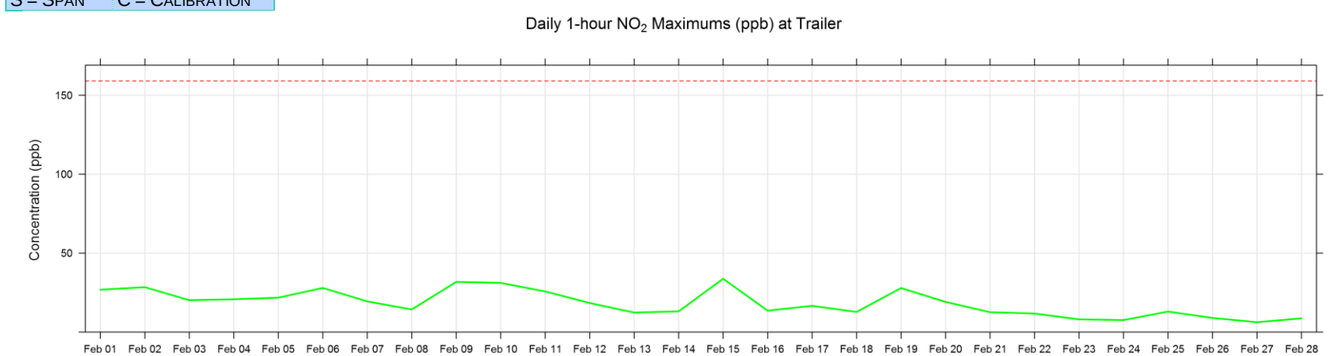
Appendix A

DATA & CALIBRATION REPORTS

Lagoon NO_2 (ppb) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	20.8	S	22.5	24.7	23.3	18.8	17.4	19.2	19.2	18.6	C	C	C	C	C	7.1	7.6	24.6	20.8	20.8	22.9	26.5	26.0	26.9	26.9	20.4
2	27.1	S	28.4	26.3	24.0	23.5	16.0	19.7	22.0	19.0	14.6	13.4	14.2	15.8	14.2	11.7	19.0	14.4	18.5	14.1	12.0	6.8	7.7	20.2	28.4	17.5
3	14.3	S	15.9	12.0	9.7	9.2	7.9	6.2	6.0	6.5	5.2	8.8	7.1	4.6	3.4	3.5	3.9	5.8	8.4	6.7	12.1	12.8	18.2	20.2	20.2	9.1
4	15.7	S	16.0	15.8	14.3	13.6	12.7	15.1	16.8	13.9	12.7	10.2	9.0	8.8	7.4	15.6	5.8	20.8	16.9	12.1	15.9	18.4	14.0	11.1	20.8	13.6
5	21.8	S	14.8	9.1	3.2	3.9	3.8	2.7	8.7	19.3	11.1	6.3	7.2	3.4	5.1	4.7	14.4	14.3	9.1	7.4	6.0	5.5	8.3	7.2	21.8	8.6
6	7.8	S	17.7	23.8	28.0	27.1	23.6	21.7	14.8	15.5	5.9	1.8	2.1	1.1	4.9	7.3	17.5	15.8	11.6	12.8	14.4	6.7	2.7	3.1	28.0	12.5
7	1.5	S	7.3	6.4	9.3	5.1	11.0	6.4	1.4	1.6	1.4	0.3	3.8	3.1	2.3	5.2	7.2	8.3	12.3	14.5	19.4	19.0	15.7	13.2	19.4	7.6
8	12.0	S	10.1	9.3	7.4	8.1	7.1	14.3	10.4	10.9	6.9	2.9	2.6	3.0	1.7	1.0	1.9	1.7	2.6	4.5	11.0	13.3	9.4	11.9	14.3	7.1
9	15.4	S	28.4	27.3	31.0	31.8	29.6	27.4	28.4	24.1	17.5	9.7	5.1	3.8	4.0	3.3	3.4	9.1	15.3	15.0	19.0	15.7	18.1	17.3	31.8	17.4
10	7.3	S	13.6	12.4	17.8	13.4	11.6	9.3	12.3	31.2	13.5	19.8	13.5	10.4	16.3	7.8	7.7	9.4	21.0	27.7	8.5	8.6	19.8	8.4	31.2	14.0
11	5.4	S	21.3	25.7	13.3	1.0	1.7	1.0	9.0	1.3	0.4	0.2	0.8	1.4	1.1	1.3	1.5	2.7	5.4	5.3	16.4	25.7	19.8	23.5	25.7	8.1
12	14.4	S	10.2	6.8	5.9	4.4	3.9	4.5	4.5	3.0	2.5	5.5	13.4	15.3	18.4	12.8	13.2	14.3	12.1	11.9	14.7	12.6	11.3	12.9	18.4	9.9
13	12.4	S	3.0	9.1	6.5	4.9	4.3	9.0	4.7	1.9	4.3	1.9	3.1	2.1	2.2	2.3	1.3	2.9	1.4	2.2	5.2	3.3	4.0	2.1	12.4	4.1
14	0.8	S	2.0	4.6	8.0	7.2	3.3	6.9	13.1	8.9	6.5	5.0	0.0	0.0	1.0	12.6	12.4	9.8	5.1	3.3	1.8	2.3	1.3	1.2	13.1	5.1
15	2.2	S	6.6	15.1	16.7	31.1	33.8	25.9	22.5	18.1	11.0	9.3	13.8	4.3	2.0	2.5	2.4	1.5	0.5	0.1	0.1	3.3	0.7	0.0	33.8	9.7
16	3.8	S	1.9	0.8	3.0	2.5	7.5	13.6	10.0	6.7	2.8	3.5	0.4	2.5	0.4	4.5	10.2	7.9	0.6	0.0	1.0	11.8	13.5	12.7	13.6	5.3
17	7.9	S	4.0	6.0	10.5	3.3	2.3	1.9	1.8	1.9	2.7	4.4	2.3	4.5	9.1	16.0	11.3	16.6	12.1	8.9	1.3	0.8	5.4	3.9	16.6	6.0
18	3.1	S	0.7	0.8	2.9	12.8	10.6	9.1	8.5	10.0	0.7	0.3	0.0	2.6	0.0	0.2	2.8	3.9	3.5	4.1	2.1	5.9	9.9	9.6	12.8	4.5
19	22.9	S	16.0	11.4	13.9	14.1	15.8	18.4	16.1	12.2	14.5	7.4	3.4	2.3	2.1	1.7	0.9	3.8	20.7	27.9	18.4	22.2	22.4	19.2	27.9	13.4
20	12.9	S	14.8	16.3	17.6	13.6	13.1	15.4	16.3	19.1	15.0	15.5	6.0	9.7	5.8	4.6	1.9	4.4	7.0	7.2	3.5	6.4	6.6	12.5	19.1	10.7
21	8.5	S	5.4	4.3	11.5	12.0	9.3	11.7	9.0	12.6	3.4	0.9	0.9	1.1	0.1	1.0	0.2	2.8	2.6	0.8	0.0	0.0	3.2	5.8	12.6	4.7
22	1.8	S	3.4	3.0	3.2	5.1	4.5	7.9	9.6	10.5	9.2	8.9	6.6	6.0	4.8	3.2	2.1	0.7	10.1	11.7	6.0	5.5	3.9	3.1	11.7	5.7
23	4.7	S	4.5	8.1	2.1	2.1	4.1	4.9	3.7	0.6	0.9	0.0	0.2	3.9	3.5	2.5	1.4	2.6	1.0	0.9	4.2	4.8	1.8	0.7	8.1	2.7
24	0.6	S	1.4	1.5	0.8	0.5	1.3	3.4	4.7	4.0	3.5	0.6	0.1	2.6	1.8	4.2	4.9	3.4	4.4	5.5	7.6	2.2	0.2	2.8	7.6	2.7
25	0.7	S	1.3	4.0	7.2	10.9	3.8	1.0	5.3	3.1	0.6	1.1	3.5	5.7	2.3	2.0	1.5	2.3	3.5	13.0	7.0	3.4	2.2	4.7	13.0	3.9
26	3.7	S	3.1	3.4	3.5	2.9	3.0	7.8	7.0	9.0	5.3	5.3	6.3	3.0	2.6	0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.6	0.0	9.0	3.0
27	1.3	S	0.0	4.5	0.0	0.0	0.5	5.4	5.0	1.1	0.3	4.1	0.0	0.3	2.8	4.1	6.3	4.6	1.0	1.1	1.2	1.6	1.4	1.8	6.3	2.1
28	5.7	S	5.1	4.1	3.3	2.6	4.4	7.2	8.7	5.2	5.2	3.6	5.1	0.0	0.0	0.1	0.3	0.9	6.6	8.5	1.8	1.0	2.5	4.3	8.7	3.7
Hourly Max	27.1	-	28.4	27.3	31.0	31.8	33.8	27.4	28.4	31.2	17.5	19.8	14.2	15.8	18.4	16.0	19.0	24.6	21.0	27.9	22.9	26.5	26.0	26.9		
Hourly Average	9.2	-	10.0	10.6	10.6	10.2	9.6	10.6	10.7	10.4	6.6	5.6	4.8	4.5	4.4	5.1	5.8	7.5	8.4	8.9	8.3	8.8	9.0	9.3		

S = SPAN C = CALIBRATION

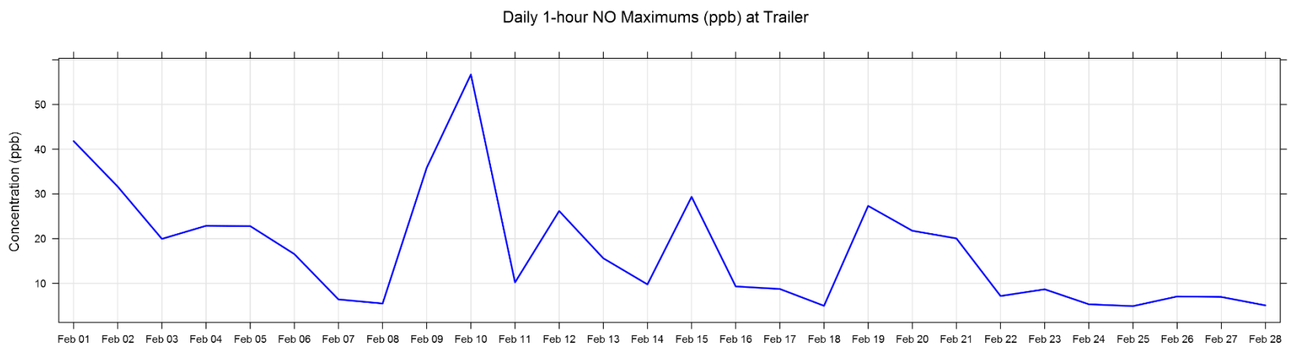


Number of 1HR Exceedances	0		Objective	159	PPB
Number of Non-Zero Readings	652				
Maximum 1-HR Average	33.8	PPB			
Maximum 24-HR Average	20.4	PPB			
IZS Calibration Time	28	HRS	Operational Time	672	HRS
Monthly Calibration Time	5	HRS	Operational Uptime	100.0	%
Standard Deviation	7.2		Monthly Average	8.2	PPB

Lagoon NO (ppb) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	5.6	S	9.6	10.2	1.4	0.0	0.7	3.5	2.5	5.8	C	C	C	C	C	2.7	2.6	33.2	23.3	27.8	16.3	41.8	10.8	14.6	41.8	11.8
2	8.5	S	26.4	5.5	7.4	15.3	3.6	7.7	8.0	14.6	11.0	13.8	15.8	15.6	10.0	10.7	27.1	7.4	16.3	5.6	0.3	2.1	4.1	31.6	31.6	11.7
3	8.8	S	19.9	0.6	0.0	0.0	0.0	0.0	0.4	2.8	1.9	10.9	5.5	4.4	1.4	0.1	0.0	0.0	2.6	1.2	5.0	1.6	3.0	6.4	19.9	3.3
4	7.4	S	20.6	16.6	4.3	3.4	1.4	2.7	8.7	11.7	12.0	14.9	13.1	8.1	5.9	22.9	0.0	18.1	8.6	1.4	3.6	8.4	6.6	2.1	22.9	8.8
5	22.8	S	5.7	1.6	0.0	0.0	0.0	0.0	4.0	17.7	8.4	4.9	5.7	2.0	4.0	1.7	6.8	1.0	0.0	0.5	0.0	2.6	6.7	0.0	22.8	4.2
6	0.0	S	0.0	1.7	16.5	10.8	3.3	8.2	4.5	6.1	2.5	0.4	0.5	0.0	6.6	7.9	11.0	5.8	2.3	0.0	2.1	0.0	0.0	0.8	16.5	4.0
7	0.0	S	6.4	3.7	5.0	0.5	3.2	0.0	0.0	0.0	0.0	0.0	2.3	0.9	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	6.4	1.0
8	0.0	S	0.0	0.0	0.0	0.0	0.0	5.5	3.1	4.6	1.4	0.0	0.9	1.8	0.9	0.0	0.0	0.0	0.0	0.0	0.5	1.7	0.0	0.0	5.5	0.9
9	0.0	S	6.2	3.4	2.2	12.3	3.7	2.9	27.3	35.9	28.6	10.3	4.1	2.7	2.8	1.2	0.0	1.4	0.8	0.0	3.8	10.6	17.3	18.2	35.9	8.5
10	4.1	S	15.8	14.1	20.4	11.3	11.9	5.6	12.3	56.7	18.9	32.7	19.1	12.8	19.0	6.3	3.1	0.1	2.3	12.0	0.0	0.1	4.7	0.0	56.7	12.3
11	0.0	S	7.5	7.6	5.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	10.2	4.1	0.0	5.9	10.2	1.9
12	4.1	S	5.4	2.3	0.3	0.0	0.0	0.2	0.4	2.5	1.9	9.6	24.7	24.5	26.2	15.5	13.6	11.5	11.9	11.2	16.3	15.2	11.2	12.3	26.2	9.6
13	15.6	S	0.2	4.5	3.4	5.2	2.1	7.2	1.3	0.0	1.8	0.7	1.1	0.6	1.1	0.7	0.0	0.4	0.0	0.2	2.4	0.0	2.7	0.0	15.6	2.2
14	0.0	S	0.0	1.5	1.7	5.8	0.0	1.1	7.4	5.2	1.8	1.2	0.0	0.0	0.2	9.8	6.9	3.6	0.2	0.0	0.0	0.0	0.0	0.0	9.8	2.0
15	0.0	S	0.0	0.0	0.0	13.1	11.2	6.9	21.5	29.3	16.3	14.5	24.7	4.1	1.5	1.6	1.0	0.1	0.0	0.0	0.0	0.9	0.0	0.0	29.3	6.4
16	4.3	S	0.1	0.0	0.3	0.0	2.7	9.3	4.9	3.0	1.8	4.4	0.0	1.5	0.0	2.5	5.1	3.8	0.0	0.0	0.0	7.7	7.2	1.8	9.3	2.6
17	2.1	S	0.0	0.3	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	1.2	3.1	8.7	3.6	7.0	2.7	1.9	0.0	0.0	0.0	0.0	8.7	1.5
18	0.0	S	0.0	0.0	0.0	1.9	3.5	3.3	1.7	5.0	0.1	0.2	0.0	2.6	0.0	0.0	0.4	0.2	0.0	0.0	0.0	1.2	0.0	0.0	5.0	0.9
19	0.5	S	0.0	3.1	3.2	2.8	1.7	7.0	10.9	12.4	27.3	10.5	3.4	2.2	1.7	0.9	0.0	0.0	7.4	2.2	0.0	0.3	0.0	5.3	27.3	4.5
20	5.6	S	6.8	9.3	11.6	5.6	7.6	10.4	11.2	19.5	18.5	21.8	7.1	12.1	6.4	2.8	0.0	0.0	1.3	0.0	0.0	0.0	2.1	7.3	21.8	7.3
21	3.8	S	1.8	1.2	10.2	9.8	7.1	11.3	5.7	20.0	2.7	0.5	0.4	1.1	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	1.1	3.4	20.0	3.5
22	0.0	S	0.2	0.0	0.0	0.0	0.0	2.7	2.1	7.2	7.1	6.5	3.8	3.8	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	7.2	1.6
23	2.2	S	2.2	8.7	0.0	0.0	2.2	4.0	1.6	0.0	0.2	0.0	0.0	4.3	3.6	1.5	0.9	0.6	0.0	0.0	1.9	1.3	0.0	0.0	8.7	1.5
24	0.0	S	0.0	0.0	0.0	0.0	0.0	0.9	5.3	2.7	3.9	0.0	0.0	1.9	1.3	3.7	3.9	0.1	0.5	1.9	3.3	0.0	0.0	0.2	5.3	1.3
25	0.0	S	0.0	2.5	3.6	0.7	0.0	0.0	4.9	1.6	0.0	0.0	0.8	3.0	0.4	0.0	0.0	0.0	0.0	3.8	1.7	0.0	0.0	0.0	4.9	1.0
26	0.0	S	0.0	0.0	0.0	0.0	0.0	3.2	3.6	7.1	2.9	4.5	5.7	1.9	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	7.1	1.3
27	0.2	S	0.0	2.5	0.0	0.0	0.0	2.3	2.5	0.1	0.0	3.6	0.0	0.0	0.9	1.8	7.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.0
28	2.2	S	0.7	0.0	0.0	0.0	0.0	0.3	1.3	3.9	2.7	2.2	4.6	0.0	0.0	0.0	0.0	0.0	4.7	5.1	0.0	0.0	0.0	0.0	5.1	1.2
Hourly Max	22.8	-	26.4	16.6	20.4	15.3	11.9	11.3	27.3	56.7	28.6	32.7	24.7	24.5	26.2	22.9	27.1	33.2	23.3	27.8	16.3	41.8	17.3	31.6		
Hourly Average	3.5	-	4.8	3.6	3.6	3.5	2.4	3.8	5.7	9.8	6.4	6.2	5.3	4.2	3.7	3.7	3.3	3.5	3.1	2.7	2.4	3.6	2.8	4.0		

S = SPAN C = CALIBRATION

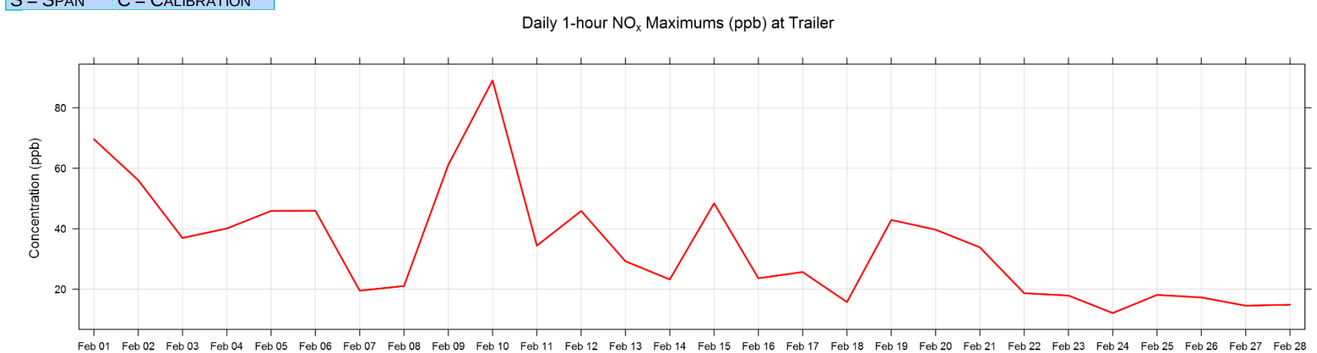


Number of 1HR Exceedances	n/a		Objective	n/a	PPB
Number of Non-Zero Readings	449				
Maximum 1-HR Average	56.7	PPB			
Maximum 24-HR Average	12.3	PPB			
IZS Calibration Time	28	HRS	Operational Time	672	HRS
Monthly Calibration Time	5	HRS	Operational Uptime	100.0	%
Standard Deviation	6.7		Monthly Average	4.1	PPB

Lagoon NO_x (ppb) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	27.7	S	33.4	36.3	26.0	19.6	19.3	23.9	22.9	25.6	C	C	C	C	C	10.8	11.2	59.0	45.3	49.8	40.4	69.6	38.0	42.8	69.6	33.4
2	36.8	S	56.1	33.0	32.6	40.1	20.6	28.4	31.1	34.8	26.8	28.3	31.2	32.6	25.4	23.4	47.4	23.0	36.0	20.8	13.2	9.9	12.9	53.1	56.1	30.3
3	24.2	S	36.9	13.5	10.4	9.3	7.9	6.2	7.3	10.2	8.0	20.7	13.6	10.1	5.8	4.6	4.7	6.6	12.0	8.8	18.0	15.3	22.1	27.5	36.9	13.2
4	24.0	S	37.6	33.3	19.5	17.9	15.1	18.7	26.5	26.6	25.7	26.1	23.0	17.8	14.3	39.6	6.6	40.1	26.8	14.6	20.7	28.0	21.8	14.3	40.1	23.4
5	45.9	S	21.7	11.9	3.5	4.1	3.9	2.8	13.8	38.3	20.7	12.3	13.9	6.6	10.3	7.6	22.4	16.4	10.3	9.0	7.1	9.4	16.3	7.3	45.9	13.7
6	7.9	S	18.4	26.8	45.9	39.2	28.0	31.1	20.5	22.8	9.5	3.3	3.7	2.2	12.6	16.3	29.7	22.7	15.0	13.0	17.6	7.4	3.7	5.0	45.9	17.5
7	2.0	S	14.9	11.3	15.5	6.8	15.4	7.0	1.7	1.9	2.1	0.7	7.3	5.2	3.4	6.6	7.8	8.3	13.8	14.6	19.5	19.1	15.9	13.2	19.5	9.3
8	12.2	S	10.1	9.3	7.4	8.0	7.1	21.1	14.6	16.6	9.5	4.0	4.7	6.1	3.8	1.5	2.8	1.8	2.5	4.5	12.6	16.0	9.4	12.2	21.1	8.6
9	16.2	S	35.5	31.6	34.1	45.1	34.3	31.3	56.8	61.1	47.3	20.8	10.3	7.6	8.0	5.8	4.5	11.5	17.2	15.9	23.8	27.4	36.6	36.6	61.1	26.9
10	12.5	S	30.6	27.6	39.4	25.7	24.6	16.0	25.6	89.0	33.4	53.7	33.7	24.2	36.5	15.3	11.9	10.5	24.4	40.9	8.7	9.7	25.7	8.8	89.0	27.3
11	5.5	S	29.9	34.4	19.4	1.0	2.2	1.1	13.7	1.8	0.9	0.7	1.7	2.9	2.1	2.0	1.8	2.9	5.5	5.4	27.7	30.9	20.1	30.3	34.4	10.6
12	19.3	S	16.4	9.9	6.9	5.3	4.7	5.4	5.7	6.4	5.3	16.2	39.3	41.0	45.9	29.4	28.0	27.0	25.2	24.3	32.2	29.0	23.7	26.4	45.9	20.6
13	29.2	S	4.3	14.7	11.0	11.3	7.5	17.4	7.2	3.1	7.3	3.8	5.4	3.8	4.4	4.1	2.2	4.3	2.0	3.4	8.7	4.2	7.7	2.7	29.2	7.4
14	1.0	S	2.4	7.2	10.7	14.1	3.8	9.0	21.6	15.2	9.4	7.3	0.2	0.2	1.9	23.2	20.1	14.2	6.1	3.7	1.8	2.4	1.2	1.2	23.2	7.7
15	2.5	S	6.9	15.8	17.5	45.2	45.9	33.7	44.9	48.4	27.9	24.4	39.2	9.2	4.5	4.9	4.3	2.4	0.5	0.2	0.1	5.1	1.4	0.5	48.4	16.7
16	9.0	S	2.8	1.0	4.2	3.0	10.9	23.6	15.6	10.5	5.4	8.7	1.1	4.9	1.1	7.8	16.2	12.6	0.8	0.0	1.2	20.3	21.6	15.3	23.6	8.6
17	10.8	S	4.3	7.1	14.5	3.3	2.3	2.1	1.9	2.2	3.2	6.0	3.2	6.5	13.0	25.7	15.7	24.5	15.7	11.7	1.4	0.8	5.9	4.3	25.7	8.1
18	3.7	S	0.7	0.8	3.3	15.5	15.1	13.3	11.1	15.8	1.6	1.4	0.0	6.0	0.0	0.5	4.0	4.9	4.3	4.7	2.1	7.9	10.1	10.1	15.8	6.0
19	24.3	S	16.3	15.1	17.7	17.6	18.3	26.3	27.9	25.6	42.9	18.8	7.4	5.0	4.4	3.2	1.3	4.3	28.8	30.8	18.5	23.3	22.9	25.3	42.9	18.5
20	19.3	S	22.4	26.5	30.2	20.0	21.5	26.7	28.4	39.7	34.5	38.1	13.7	22.3	12.9	8.1	2.5	5.0	8.9	7.1	3.6	6.4	9.2	20.3	39.7	18.6
21	12.8	S	7.8	6.3	22.5	22.6	17.2	23.9	15.4	33.8	7.5	2.6	2.4	3.3	0.7	2.6	0.7	5.0	3.2	0.9	0.0	0.0	5.5	10.3	33.8	9.0
22	1.9	S	4.6	3.1	3.2	5.2	4.8	11.6	12.6	18.7	17.3	16.4	11.5	10.9	7.6	4.9	3.1	0.9	10.8	11.9	6.1	5.6	4.0	5.1	18.7	7.9
23	8.1	S	7.8	17.9	3.0	3.0	7.4	10.0	6.4	1.4	2.3	0.5	1.0	9.5	8.3	5.2	3.6	4.5	1.4	1.2	7.3	7.4	2.3	0.9	17.9	5.2
24	0.9	S	1.9	2.2	1.1	0.7	1.7	5.5	11.2	7.9	8.5	1.6	1.0	5.7	4.3	9.1	9.9	4.6	6.1	8.6	12.1	3.1	0.4	4.2	12.1	4.9
25	1.1	S	2.2	7.7	12.0	12.8	4.0	0.9	11.5	6.0	1.1	2.1	5.6	10.1	4.0	2.8	2.4	3.3	4.2	18.1	9.9	3.3	2.6	5.8	18.1	5.8
26	4.7	S	3.5	3.4	3.6	2.8	3.1	12.3	11.8	17.3	9.4	11.0	13.3	6.2	5.5	0.1	0.0	0.9	0.0	0.0	0.0	0.2	3.2	0.0	17.3	4.9
27	2.7	S	0.3	8.2	0.0	0.0	0.9	8.9	8.8	2.4	1.2	9.0	0.0	1.4	5.0	7.2	14.6	8.4	1.6	1.5	1.1	1.6	1.5	3.0	14.6	3.9
28	9.1	S	7.0	4.9	3.3	2.8	5.6	8.6	11.1	10.3	9.1	7.0	11.0	0.6	0.0	0.6	0.8	1.4	12.6	14.9	2.0	1.0	3.0	4.8	14.9	5.7
Hourly Max	45.9	-	56.1	36.3	45.9	45.2	45.9	33.7	56.8	89.0	47.3	53.7	39.3	41.0	45.9	39.6	47.4	59.0	45.3	49.8	40.4	69.6	38.0	53.1		
Hourly Average	13.4	-	15.6	15.0	15.0	14.4	12.6	15.2	17.4	21.2	14.0	12.8	11.1	9.7	9.1	9.8	10.0	11.8	12.2	12.1	11.3	13.0	12.4	14.0		

S = Span C = Calibration

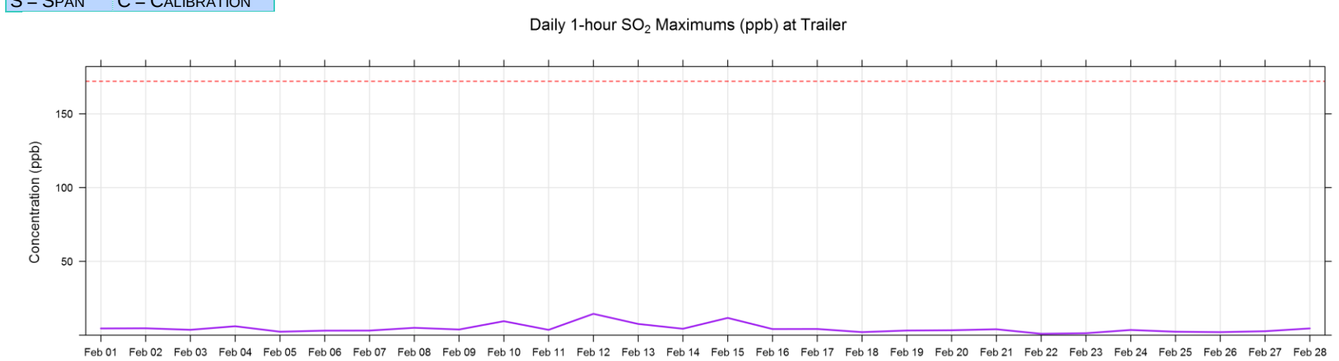


Number of 1HR Exceedances	n/a		Objective	n/a	PPB
Number of Non-Zero Readings	659				
Maximum 1-HR Average	89.0	PPB			
Maximum 24-HR Average	33.4	PPB			
IZS Calibration Time	28	HRS	Operational Time	672	HRS
Monthly Calibration Time	5	HRS	Operational Uptime	100.0	%
Standard Deviation	12.7		Monthly Average	13.2	PPB

Lagoon SO_2 (ppb) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	1.0	**S**	1.2	1.3	1.1	0.9	1.0	1.1	1.1	1.1	**C**	**C**	**C**	**C**	**C**	1.1	1.1	4.6	4.5	3.1	2.0	2.3	1.6	1.5	4.6	1.8
2	1.4	**S**	2.0	2.2	2.0	2.3	2.0	1.7	1.4	1.7	1.8	1.7	1.7	1.8	1.7	1.6	1.9	1.4	3.2	2.3	1.6	1.3	1.4	4.7	4.7	1.9
3	3.6	**S**	1.7	1.6	1.6	1.4	1.2	1.1	1.2	1.0	0.8	1.3	0.9	0.9	1.0	0.9	1.0	1.2	1.6	1.5	0.9	0.6	0.9	2.7	3.6	1.3
4	3.1	**S**	6.0	4.6	2.1	1.0	1.0	0.6	0.6	0.7	0.8	1.0	1.2	1.1	1.2	2.0	1.5	1.9	5.1	3.2	2.8	2.8	2.7	2.0	6.0	2.1
5	2.3	**S**	2.1	1.6	1.3	1.4	1.2	1.3	1.4	1.6	1.8	2.0	2.2	1.6	1.4	1.5	1.5	1.3	1.5	1.9	1.6	1.6	1.7	1.1	2.3	1.6
6	0.9	**S**	1.0	0.9	1.2	1.0	0.8	0.8	0.8	0.8	0.9	1.1	1.3	1.2	1.5	1.6	3.1	1.8	1.9	1.4	2.2	1.4	1.0	1.1	3.1	1.3
7	1.2	**S**	1.9	2.4	2.6	1.3	1.2	1.0	1.0	1.1	1.0	1.0	1.3	1.6	1.9	2.8	2.4	1.7	2.5	3.1	2.7	1.7	2.1	1.7	3.1	1.8
8	1.4	**S**	1.7	1.6	1.4	1.7	3.0	2.8	2.6	2.6	1.8	1.6	1.4	1.5	1.3	1.2	1.3	1.6	2.0	5.0	3.7	2.2	0.9	0.6	5.0	1.9
9	0.0	**S**	0.2	0.3	0.3	0.9	0.5	0.5	0.8	0.7	0.9	0.4	0.7	1.1	1.2	1.0	0.6	0.9	0.6	0.8	1.2	1.8	3.8	2.8	3.8	1.0
10	1.5	**S**	2.2	1.8	3.2	2.0	2.3	1.5	1.9	7.6	4.0	7.6	8.3	8.7	9.4	3.1	2.0	3.2	4.0	6.0	3.2	2.4	2.7	2.2	9.4	3.9
11	1.2	**S**	1.3	1.7	2.0	1.1	1.1	1.2	1.1	1.1	0.8	1.0	2.0	3.6	3.6	2.2	1.3	1.8	1.3	0.7	0.5	0.3	0.2	1.2	3.6	1.4
12	1.5	**S**	1.8	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.7	3.0	11.5	11.1	14.4	11.0	12.6	9.0	11.4	14.4	13.5	11.9	8.8	5.2	14.4	6.4
13	7.6	**S**	3.4	4.6	3.3	3.8	3.7	4.6	2.5	1.9	1.7	2.1	1.3	1.2	1.1	1.3	1.5	1.4	1.4	1.5	1.3	1.3	1.4	1.3	7.6	2.4
14	1.4	**S**	1.4	2.1	2.8	1.4	1.5	2.1	4.3	2.8	2.1	1.6	1.1	1.1	0.9	1.0	1.0	1.6	1.2	1.6	2.2	1.8	1.6	1.5	4.3	1.7
15	1.8	**S**	1.3	1.4	1.0	1.0	0.9	2.8	6.2	11.7	5.9	6.2	8.2	1.9	1.1	1.7	1.1	1.1	1.0	1.0	1.0	1.1	2.0	1.6	11.7	2.7
16	4.1	**S**	2.7	1.2	1.6	1.4	1.6	1.5	2.0	1.8	1.4	1.4	1.3	1.3	1.3	3.0	2.0	2.6	1.4	1.3	1.1	1.3	1.4	1.1	4.1	1.7
17	1.2	**S**	1.3	1.4	1.8	1.4	2.0	2.5	1.7	1.5	1.4	1.5	1.7	1.5	2.4	3.0	4.2	3.3	2.7	3.0	3.2	2.1	2.4	2.2	4.2	2.2
18	2.1	**S**	1.5	1.3	1.3	1.3	1.4	1.4	1.2	1.2	1.1	1.2	1.1	1.3	1.2	1.1	1.0	1.2	1.2	1.1	1.0	1.1	1.1	1.1	2.1	1.2
19	1.0	**S**	1.1	1.0	1.0	0.9	0.7	0.9	1.3	1.0	3.2	1.6	1.0	1.0	0.9	1.0	0.9	0.9	1.0	0.8	0.6	0.5	0.4	1.2	3.2	1.1
20	1.7	**S**	1.8	2.4	1.9	1.4	1.8	1.8	1.5	2.4	1.3	2.4	1.6	3.3	1.0	0.7	0.9	0.8	0.8	0.7	0.8	0.7	0.8	1.2	3.3	1.5
21	1.4	**S**	1.1	1.0	2.0	3.3	2.4	2.5	1.8	4.0	0.9	0.8	0.9	1.0	0.9	1.0	0.9	1.0	1.0	1.0	1.1	1.0	0.9	1.0	4.0	1.4
22	0.8	**S**	0.9	0.8	0.9	0.8	0.7	0.6	0.7	0.8	0.9	0.8	0.7	0.9	0.9	0.8	0.7	0.8	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.8
23	1.0	**S**	1.1	1.3	1.2	1.0	1.1	1.1	1.2	1.1	1.1	1.0	1.2	1.2	1.2	1.3	1.1	1.1	1.3	1.3	1.3	1.2	1.2	1.1	1.3	1.2
24	1.2	**S**	1.4	1.3	1.3	1.2	1.3	1.2	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.8	3.5	2.4	3.2	3.2	1.6	1.2	1.3	1.3	3.5	1.6
25	1.5	**S**	1.5	1.6	1.5	1.4	1.4	1.5	1.7	1.8	1.6	1.6	1.6	2.0	2.3	1.6	1.5	2.2	2.1	1.7	1.6	1.6	1.7	1.8	2.3	1.7
26	1.7	**S**	1.5	1.4	1.3	1.3	1.3	1.4	1.4	1.7	1.3	1.4	1.5	2.0	1.5	1.2	1.2	1.2	1.3	1.1	1.3	1.3	1.6	1.8	2.0	1.4
27	2.4	**S**	1.5	2.3	1.4	1.5	1.4	1.4	1.5	1.3	1.3	1.4	1.3	1.3	2.7	2.2	1.9	2.1	2.2	2.6	1.3	1.4	1.3	1.4	2.7	1.7
28	1.4	**S**	1.9	1.5	1.5	1.8	2.2	2.9	4.6	2.0	1.6	1.4	1.8	1.2	1.1	1.2	1.1	1.1	1.2	1.4	1.2	1.2	1.1	1.2	4.6	1.6
Hourly Max	7.6	-	6.0	4.6	3.3	3.8	3.7	4.6	6.2	11.7	5.9	7.6	11.5	11.1	14.4	11.0	12.6	9.0	11.4	14.4	13.5	11.9	8.8	5.2		
Hourly Average	1.8	-	1.7	1.7	1.6	1.4	1.5	1.6	1.8	2.1	1.6	1.8	2.2	2.1	2.2	1.9	2.0	2.0	2.3	2.4	2.1	1.8	1.7	1.7		

S = SPAN C = CALIBRATION

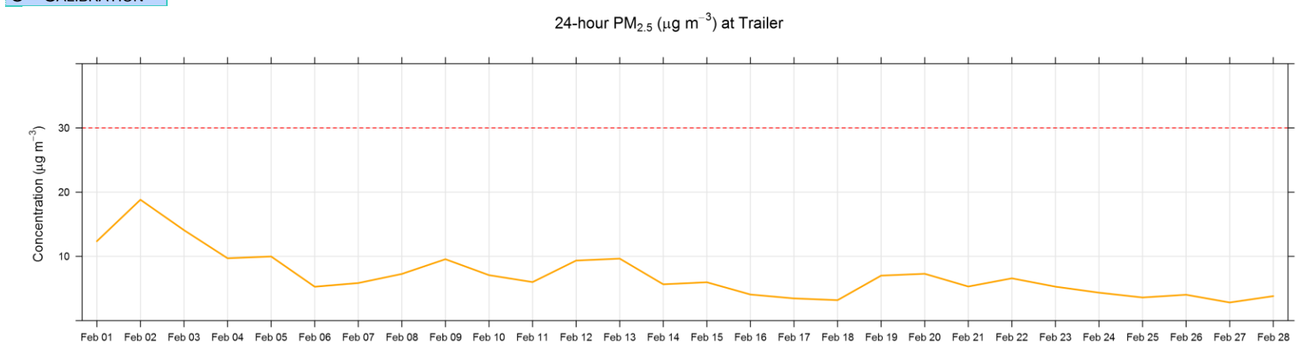


Number of 1HR Exceedances	0		Objective	172	PPB
Number of 24HR Exceedances	0		Objective	48	PPB
Number of Non-Zero Readings	672				
Maximum 1-HR Average	14.4	PPB			
Maximum 24-HR Average	6.4	PPB			
IZS Calibration Time	28	HRS	Operational Time	672	HRS
Monthly Calibration Time	5	HRS	Operational Uptime	100.0	%
Standard Deviation	1.8		Monthly Average	1.9	PPB

Lagoon $PM_{2.5}$ (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	20.2	17.3	13.4	17.0	11.2	9.8	10.9	8.0	5.8	5.5	8.3	10.8	**C**	**C**	**C**	6.5	5.5	5.4	11.2	18.8	17.3	13.4	21.3	22.0	22.0	12.4
2	22.7	21.3	19.5	21.1	15.9	18.4	17.0	15.2	18.1	23.8	21.6	11.2	21.3	24.9	21.3	20.9	18.4	32.0	10.9	27.0	21.3	19.4	1.9	6.9	32.0	18.8
3	25.9	28.1	27.4	28.1	21.6	19.1	18.4	13.8	14.1	12.3	10.1	9.0	9.5	7.6	5.8	5.5	7.3	13.7	10.5	11.2	7.6	6.9	8.4	15.9	28.1	14.1
4	13.2	16.4	16.6	15.5	13.4	8.4	7.6	7.3	10.9	12.5	11.9	14.8	8.7	13.7	8.3	4.7	5.8	4.4	3.6	10.9	8.0	4.8	5.8	5.8	16.6	9.7
5	4.7	3.7	5.1	13.1	16.9	10.5	13.7	9.8	12.3	11.2	10.1	9.1	11.9	26.7	9.5	7.1	8.3	13.7	8.0	9.1	6.5	4.4	6.2	8.0	26.7	10.0
6	9.4	5.5	3.0	4.4	7.1	5.5	6.6	9.1	9.4	9.8	10.9	6.2	2.2	0.4	2.2	4.0	4.0	6.4	4.7	2.2	2.9	6.5	3.7	0.4	10.9	5.3
7	2.2	3.7	2.2	3.3	5.4	3.7	3.3	2.6	2.2	6.5	5.5	3.6	1.9	3.0	2.2	2.3	7.2	10.1	6.9	12.7	11.2	10.5	18.0	10.1	18.0	5.8
8	14.1	9.8	9.4	13.0	9.8	12.3	10.9	8.7	8.7	8.0	6.6	4.2	1.9	0.0	0.0	1.2	6.2	6.2	7.2	9.4	5.5	4.8	7.6	9.1	14.1	7.3
9	9.1	9.2	9.4	7.6	10.1	8.7	12.3	11.9	9.8	14.8	19.8	15.9	18.4	14.1	10.5	6.9	5.1	3.3	2.6	4.0	4.4	5.1	7.3	9.1	19.8	9.6
10	6.2	2.2	3.3	6.5	7.2	7.6	5.5	6.9	6.2	5.8	14.8	9.4	10.1	13.7	10.5	13.4	8.0	5.5	6.9	4.7	3.3	1.2	5.8	5.1	14.8	7.1
11	4.7	6.5	10.9	7.6	8.3	5.5	4.4	3.3	3.0	4.4	3.0	0.9	0.4	5.5	4.7	5.5	5.5	4.4	5.8	8.7	7.6	8.0	18.0	7.3	18.0	6.0
12	8.7	8.7	10.9	9.2	7.3	4.8	4.1	6.5	5.5	5.1	5.8	3.6	1.2	17.7	20.9	19.6	10.5	9.1	8.6	9.8	12.7	13.0	11.9	9.4	20.9	9.4
13	11.2	8.3	5.6	6.9	4.7	2.2	4.0	7.3	5.5	5.1	6.2	5.5	5.8	29.2	14.4	14.8	11.6	17.0	11.6	11.2	11.7	10.1	9.8	11.9	29.2	9.7
14	8.7	5.5	3.3	3.0	5.1	6.9	8.0	8.6	6.9	9.8	10.1	10.5	7.2	3.7	3.0	3.0	1.9	4.0	6.5	6.9	4.0	4.4	3.0	1.9	10.5	5.7
15	1.6	1.5	2.9	5.1	5.5	4.8	8.0	7.6	8.0	9.2	15.9	9.8	11.6	13.1	8.0	2.2	0.4	3.7	4.4	4.7	3.3	3.0	5.1	4.0	15.9	6.0
16	3.3	3.3	1.9	3.0	2.2	5.1	4.0	4.2	4.4	6.5	6.2	6.5	3.7	3.3	3.3	3.3	6.5	5.5	9.1	4.0	1.2	2.2	1.5	3.3	9.1	4.1
17	5.1	5.1	2.9	3.0	3.0	3.3	3.6	3.3	3.0	1.9	2.6	1.2	0.1	0.8	3.0	6.2	6.9	6.2	5.4	4.4	3.3	3.6	3.3	1.9	6.9	3.5
18	2.2	3.3	3.0	2.6	3.3	6.2	4.0	3.7	1.9	1.5	3.7	4.4	2.2	0.1	2.6	2.2	4.0	3.3	2.4	5.8	5.5	2.2	1.5	4.7	6.2	3.2
19	4.7	6.5	7.3	5.8	5.5	4.4	5.5	4.8	8.4	8.0	6.6	11.2	10.1	8.0	7.6	8.3	5.5	3.7	4.0	9.1	7.6	8.4	10.1	7.2	11.2	7.0
20	9.1	9.4	5.8	7.6	6.9	8.4	7.6	10.5	9.1	8.0	15.1	14.8	10.1	7.6	8.3	4.7	1.5	2.6	4.7	8.7	5.1	1.5	3.3	4.4	15.1	7.3
21	8.0	5.1	2.6	1.5	2.6	6.9	8.5	7.6	5.4	23.8	**C**	**C**	**C**	**C**	3.3	4.4	6.9	3.3	2.2	3.0	1.5	1.9	1.9	5.8	23.8	5.3
22	8.0	6.2	6.9	6.2	6.4	5.4	2.4	6.5	5.5	6.5	10.9	8.0	11.2	15.8	10.9	5.1	4.7	6.5	5.8	4.0	2.6	4.0	4.4	4.0	15.8	6.6
23	8.3	6.2	4.7	4.7	4.7	7.3	4.0	3.0	8.3	6.5	5.5	3.7	0.0	4.4	6.5	6.9	6.2	5.8	4.7	4.0	5.8	5.5	4.4	5.6	8.3	5.3
24	3.0	1.2	3.3	4.7	3.6	3.7	7.3	5.5	6.5	6.5	4.0	5.0	5.8	3.3	2.5	4.4	8.0	5.5	3.7	2.6	4.0	4.4	4.0	1.9	8.0	4.4
25	0.1	2.6	5.1	4.7	5.1	4.4	3.0	1.2	0.0	3.3	5.8	4.0	2.6	3.7	5.5	3.3	1.9	1.5	2.3	6.5	7.6	4.4	3.7	4.2	7.6	3.6
26	3.7	4.4	4.4	4.0	2.2	1.5	1.9	5.8	2.6	0.1	12.6	9.4	7.3	5.1	7.3	6.9	3.0	2.5	2.2	0.8	0.4	1.9	3.0	3.7	12.6	4.0
27	6.2	5.5	1.9	0.8	2.6	1.9	0.2	0.8	2.2	6.2	4.7	1.2	2.6	4.0	3.0	2.6	3.0	2.6	2.2	2.6	2.4	1.2	2.2	5.1	6.2	2.8
28	6.2	3.7	1.5	1.9	2.5	2.6	4.0	3.7	3.0	6.9	5.7	7.6	6.5	3.1	2.6	2.6	3.3	6.9	5.8	3.7	2.6	3.0	1.9	0.4	7.6	3.8
Hourly Max	25.9	28.1	27.4	28.1	21.6	19.1	18.4	15.2	18.1	23.8	21.6	15.9	21.3	29.2	21.3	20.9	18.4	32.0	11.6	27.0	21.3	19.4	21.3	22.0		
Hourly Average	8.2	7.5	6.9	7.6	7.2	6.7	6.8	6.7	6.7	8.2	9.0	7.5	6.7	8.9	7.0	6.4	6.0	7.0	5.9	7.5	6.3	5.7	6.4	6.4		

C = CALIBRATION

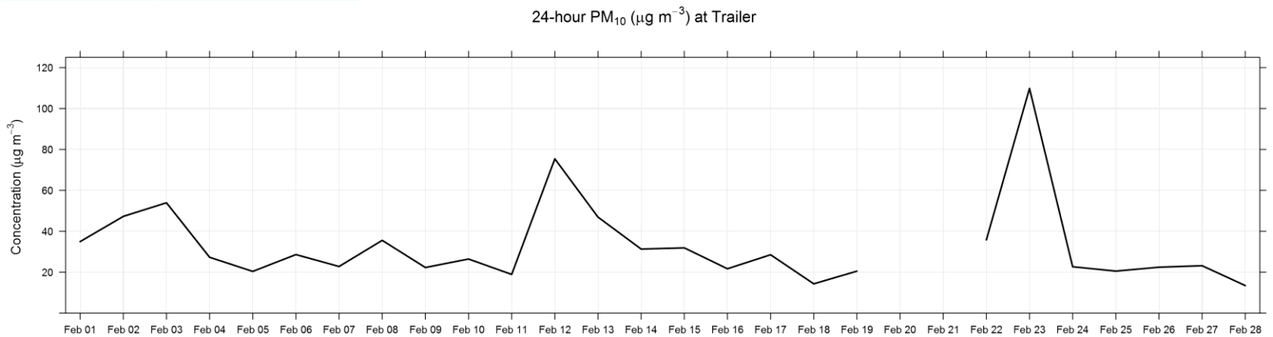


Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Objective	30	UG/M3
Number of Non-Zero Readings	668				
Maximum 1-HR Average	32.0	UG/M3			
Maximum 24-HR Average	18.8	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100.0	%
Standard Deviation	5.2		Monthly Average	7.0	UG/M3

Lagoon PM_{10} (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	29.4	31.3	34.3	28.7	38.6	26.6	23.1	22.3	11.1	22.4	26.6	40.0	**C**	**C**	**C**	68.8	17.4	36.4	78.7	42.8	37.1	30.8	45.3	42.8	78.7	35.0
2	47.0	41.4	44.2	39.3	29.4	24.5	44.9	38.0	16.7	37.2	44.2	38.6	46.3	66.0	64.0	54.8	82.9	118.9	56.2	51.2	30.8	36.5	34.3	47.7	118.9	47.3
3	25.9	61.1	63.9	180.9	143.6	106.9	54.8	61.1	52.7	56.2	108.3	119.6	67.5	40.7	27.3	30.1	21.0	20.2	11.1	7.6	1.9	4.8	9.0	18.4	180.9	53.9
4	29.4	21.7	25.2	25.2	10.4	12.8	12.7	7.6	25.2	32.2	42.1	68.9	46.3	83.3	19.5	25.2	30.1	18.8	35.7	28.0	13.8	13.9	14.6	12.5	83.3	27.3
5	19.5	18.1	11.8	30.1	24.5	11.8	11.8	11.8	8.2	9.0	18.8	24.5	36.4	47.0	25.9	30.8	33.6	30.8	12.4	23.0	13.2	14.6	13.2	9.0	47.0	20.4
6	7.5	10.4	11.8	6.1	4.0	7.6	23.1	30.8	23.8	49.9	113.3	35.0	21.5	11.1	12.5	17.4	11.1	56.9	20.2	24.5	36.4	37.8	89.3	25.2	113.3	28.6
7	22.3	22.3	37.1	39.3	32.9	13.9	11.8	8.3	10.4	11.8	12.5	12.7	13.2	13.9	10.4	9.0	11.2	20.2	51.9	37.1	32.9	42.1	34.3	35.7	51.9	22.8
8	28.7	43.5	62.5	47.7	47.0	64.6	77.3	56.6	109.7	78.0	43.5	43.5	26.2	23.7	38.6	16.7	9.0	7.5	6.1	4.0	0.0	6.1	8.3	4.8	109.7	35.6
9	6.9	6.1	37.2	19.9	20.2	13.2	22.3	6.1	6.9	25.2	23.1	46.3	60.4	66.0	39.3	21.6	15.2	11.1	2.6	1.8	8.3	32.9	18.1	24.5	66.0	22.3
10	22.4	13.9	12.4	13.2	13.9	16.7	18.8	19.5	16.0	16.0	44.2	28.7	57.6	80.8	30.8	49.8	43.5	35.0	18.8	23.1	18.8	14.6	13.2	13.2	80.8	26.5
11	16.0	10.4	16.7	23.8	56.9	67.4	47.7	37.1	18.1	32.2	25.2	18.8	6.8	11.1	14.6	10.4	6.8	18.8	2.6	1.2	0.0	0.0	1.8	9.7	67.4	18.9
12	20.2	15.3	32.9	29.4	37.2	42.1	23.1	33.6	35.8	27.3	30.1	56.2	73.1	187.5	160.4	138.6	122.4	128.0	97.0	136.3	135.1	121.7	66.0	60.4	187.5	75.4
13	66.7	54.0	96.3	88.5	59.0	71.0	104.1	137.9	99.9	83.6	64.6	27.3	34.3	15.3	10.4	8.3	18.8	12.5	13.2	13.2	10.4	11.1	14.6	11.8	137.9	46.9
14	10.4	9.8	8.3	4.0	25.2	34.3	35.0	24.5	10.4	32.9	17.4	34.3	107.0	42.8	27.3	28.7	32.2	56.2	40.7	26.1	39.3	61.1	30.1	13.9	107.0	31.3
15	13.9	13.2	5.4	6.1	11.1	5.4	1.2	0.0	1.2	23.8	50.5	67.4	37.8	57.6	24.5	14.0	28.0	21.6	22.3	42.1	75.9	87.9	88.7	66.0	88.7	31.9
16	39.3	56.9	28.7	16.0	6.8	3.3	17.4	13.9	15.2	44.2	53.3	11.2	10.4	8.3	10.4	**E**	11.8	12.3	79.4	9.0	11.2	12.5	11.8	16.0	79.4	21.7
17	7.5	33.6	13.2	11.1	11.8	12.5	8.3	20.9	15.3	26.6	15.2	28.0	42.1	39.3	20.9	38.6	48.4	65.3	63.2	44.2	46.3	30.1	23.8	18.8	65.3	28.5
18	9.0	27.3	18.8	10.4	25.2	18.1	15.2	16.7	16.0	4.7	9.7	17.4	13.9	14.6	21.6	5.4	8.2	17.4	13.2	9.0	16.7	14.6	11.1	9.8	27.3	14.3
19	13.9	18.1	32.9	30.1	1.9	**E**	0.0	21.0	22.5	3.3	80.9	**E**	53.4	56.2	40.5	29.4	33.6	4.0	2.6	2.6	0.5	0.0	0.0	4.0	80.9	20.5
20	49.1	47.6	45.6	50.6	71.0	39.3	14.6	31.5	19.5	48.4	59.0	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	-	-
21	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**C**	**C**	**C**	**C**	**C**	68.9	57.2	40.0	49.1	13.2	9.0	11.8	8.0	8.0	39.9	-	-
22	32.4	11.7	10.7	15.5	1.9	19.6	29.1	63.6	20.5	107.7	85.3	92.0	45.3	44.0	29.4	11.8	6.0	4.0	7.4	18.9	13.5	39.2	98.1	52.1	107.7	35.8
23	149.6	79.8	41.2	169.3	235.6	265.5	172.0	134.9	191.0	249.9	216.0	86.6	79.2	36.5	119.8	67.0	42.6	30.4	54.1	90.5	38.5	36.5	24.3	25.0	265.5	109.8
24	6.6	5.3	17.0	8.0	5.3	1.3	2.6	12.1	11.4	85.9	122.4	49.4	0.6	1.9	4.6	11.4	12.8	67.0	22.9	52.1	23.6	6.6	7.4	6.0	122.4	22.7
25	8.0	18.2	91.4	38.5	4.0	4.6	25.0	4.0	10.1	28.4	22.3	6.7	22.9	31.7	18.9	9.4	24.3	5.3	29.0	15.5	26.2	26.3	22.3	0.0	91.4	20.5
26	0.6	2.6	6.7	3.3	5.1	0.0	0.0	3.3	8.0	26.3	30.4	24.3	52.1	20.9	126.6	31.8	18.2	58.8	10.1	16.2	7.4	15.5	13.5	57.5	126.6	22.5
27	50.1	73.9	45.3	56.1	61.6	33.8	2.6	1.3	14.8	6.6	19.5	3.3	9.4	5.3	2.6	41.9	26.3	16.8	6.7	6.7	14.8	9.4	13.5	33.8	73.9	23.2
28	17.5	13.5	16.7	12.1	9.4	7.5	9.4	6.5	18.9	16.7	17.5	47.3	8.0	23.6	1.9	1.9	6.0	8.7	6.7	16.2	12.4	16.8	14.1	14.1	47.3	13.5
Hourly Max	149.6	79.8	96.3	180.9	235.6	265.5	172.0	137.9	191.0	249.9	216.0	119.6	107.0	187.5	160.4	138.6	122.4	128.0	97.0	136.3	135.1	121.7	98.1	66.0		
Hourly Average	27.8	28.2	32.2	37.2	36.8	35.5	29.9	30.5	30.0	43.9	51.7	41.1	38.9	41.2	37.4	31.9	28.2	34.5	28.8	27.8	25.1	27.1	27.0	24.9		

C = CALIBRATION | E = INSTRUMENT ERROR

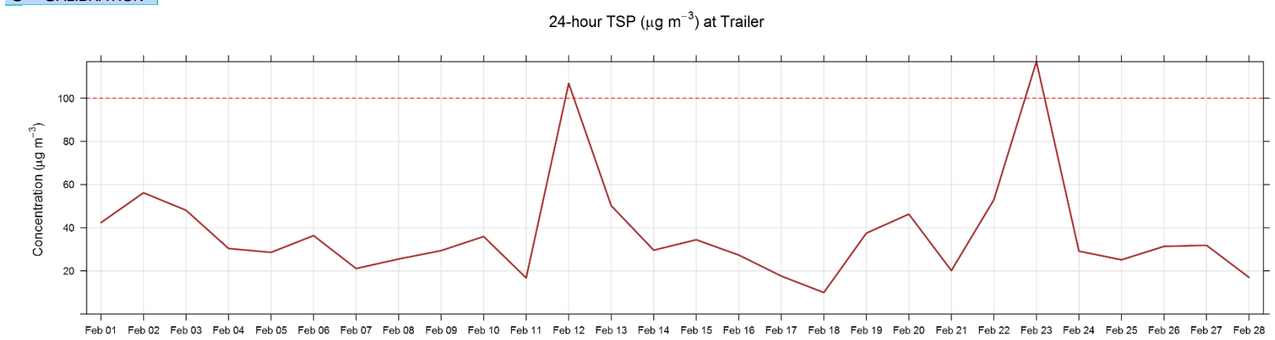


Number of 1HR Exceedances	n/a		Objective	n/a	UG/M3
Number of Non-Zero Readings	637				
Maximum 1-HR Average	265.5	UG/M3			
Maximum 24-HR Average	109.8	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	647	HRS
Monthly Calibration Time	8	HRS	Operational Uptime	96.3	%
Standard Deviation	35.0		Monthly Average	33.2	UG/M3

Lagoon TSP (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	23.7	18.2	20.9	34.8	22.3	23.7	24.6	25.1	15.4	16.8	36.1	48.6	**C**	**C**	**C**	96.9	25.1	50.0	143.9	65.2	47.2	36.1	66.5	48.6	143.9	42.4
2	50.0	50.0	47.2	36.1	26.5	29.2	44.4	56.9	36.2	36.2	84.5	38.9	45.8	77.6	73.5	59.6	113.5	178.5	61.0	77.6	30.6	34.8	4.3	55.5	178.5	56.2
3	41.7	78.9	79.0	221.4	117.7	84.5	44.5	56.9	43.1	43.1	55.5	38.9	47.2	27.9	29.2	29.2	22.3	22.6	18.2	12.7	8.5	7.1	7.1	16.8	221.4	48.1
4	18.2	21.0	18.2	29.2	16.8	15.4	12.7	11.3	41.7	34.5	48.6	72.1	45.8	85.9	31.9	33.4	50.0	30.6	42.9	26.5	12.6	8.5	5.7	15.4	85.9	30.4
5	25.1	20.9	19.6	30.5	25.6	19.6	13.8	12.6	18.2	16.8	30.6	26.5	30.6	84.2	40.2	63.8	52.3	55.5	20.9	43.0	20.9	3.0	4.3	7.1	84.2	28.6
6	14.1	9.9	9.9	8.4	8.5	23.7	33.4	34.8	18.2	45.3	128.0	15.4	4.3	3.0	7.1	32.4	20.9	119.1	44.4	44.4	51.3	50.0	120.5	25.1	128.0	36.3
7	19.6	25.1	25.6	34.8	37.5	14.0	8.5	7.1	7.1	16.6	5.7	8.5	12.6	11.3	8.5	8.5	9.9	22.3	47.2	32.0	28.1	41.7	38.9	34.8	47.2	21.1
8	19.6	27.9	33.4	25.1	29.2	43.1	48.5	37.5	59.5	22.3	25.4	26.5	27.8	16.8	42.6	12.6	12.6	8.5	5.7	5.7	4.4	43.1	7.1	26.5	59.5	25.5
9	16.8	18.2	90.1	20.4	19.6	15.4	25.1	8.5	23.7	37.5	32.0	40.3	55.5	37.5	18.2	15.4	22.3	15.4	15.4	15.4	19.6	59.6	34.8	48.6	90.1	29.4
10	62.4	44.4	32.0	25.1	29.2	23.7	8.5	14.0	15.4	16.8	30.6	15.4	62.4	95.6	36.1	61.0	67.9	62.4	34.8	76.2	26.5	5.7	7.1	8.5	95.6	35.9
11	24.4	27.9	26.5	29.2	51.3	30.6	25.1	23.7	11.3	33.4	9.9	8.5	7.1	8.5	12.6	8.5	5.8	5.7	4.4	4.4	3.0	14.0	15.4	9.9	51.3	16.7
12	22.3	19.6	37.5	66.6	156.4	99.8	43.1	45.8	51.4	36.2	38.9	54.1	70.7	272.5	227.5	224.1	184.0	146.7	135.7	172.1	159.1	141.2	77.2	83.1	272.5	106.9
13	55.5	73.5	95.6	99.7	89.3	28.1	135.6	143.9	138.4	84.1	63.8	36.1	36.1	8.5	9.9	8.5	8.5	11.3	14.1	8.5	8.5	15.4	26.5	5.7	143.9	50.2
14	8.5	8.5	8.5	4.3	32.0	61.0	43.1	26.5	15.4	37.5	18.2	24.3	76.2	27.8	34.8	22.3	45.7	69.3	44.4	29.2	19.6	25.1	13.8	14.0	76.2	29.6
15	7.1	9.9	7.1	19.6	12.6	15.4	26.5	3.0	5.7	22.3	61.0	41.7	63.8	113.5	43.1	12.6	33.4	18.2	21.1	37.5	54.1	44.4	67.8	84.5	113.5	34.4
16	54.1	87.3	38.9	8.5	4.1	22.3	27.8	34.8	14.0	62.4	66.5	7.1	8.5	7.1	8.5	8.5	26.5	32.0	88.7	12.6	8.6	5.7	9.9	11.3	88.7	27.3
17	13.8	16.8	1.6	14.0	4.3	7.1	7.1	5.7	8.5	12.6	8.5	15.4	15.4	23.7	27.8	33.4	44.4	47.2	48.6	20.9	18.2	11.3	8.5	7.1	48.6	17.6
18	7.1	7.1	5.8	4.4	18.2	11.3	14.1	14.0	9.9	9.9	9.9	5.9	7.1	9.9	8.5	7.1	5.7	8.5	10.8	12.6	9.9	7.1	5.7	27.9	27.9	9.9
19	24.4	11.3	41.7	34.8	22.3	19.6	47.8	77.6	47.2	18.2	113.6	119.1	66.6	56.8	30.6	40.3	30.6	26.5	13.8	15.4	11.3	19.6	3.2	7.1	119.1	37.5
20	77.6	58.3	85.9	83.2	126.0	77.6	33.4	61.0	25.1	84.8	94.2	76.3	63.8	22.3	41.7	18.2	5.7	7.1	9.9	9.9	9.9	11.3	8.3	19.6	126.0	46.3
21	32.0	16.8	13.7	5.7	4.4	36.2	53.6	37.5	32.0	38.9	**C**	**C**	**C**	**C**	11.3	15.4	16.6	22.3	5.8	5.6	4.3	0.2	0.2	50.0	53.6	20.1
22	44.4	3.0	5.5	18.2	8.5	19.6	39.8	73.3	26.5	153.7	108.0	142.5	91.4	65.1	36.1	23.4	12.6	9.9	7.1	40.3	9.9	76.2	165.0	91.3	165.0	53.0
23	260.0	134.3	54.1	258.6	313.9	228.2	167.4	150.8	149.5	163.3	145.3	61.0	50.0	30.6	160.5	88.7	37.5	41.7	70.7	127.4	40.3	26.5	22.3	25.1	313.9	117.0
24	4.3	7.1	23.5	7.1	4.3	3.0	0.2	0.0	4.3	131.5	208.9	16.8	0.0	0.2	5.7	9.9	18.2	69.3	26.5	94.2	43.1	11.3	7.1	3.0	208.9	29.1
25	5.6	25.1	54.1	23.7	16.8	9.9	51.3	11.3	15.4	30.6	45.8	0.0	26.5	40.4	15.4	11.3	32.9	1.6	51.3	20.9	38.9	38.9	29.2	5.7	54.1	25.1
26	1.6	3.0	4.3	3.0	4.3	1.6	0.0	1.3	8.5	26.5	32.0	48.6	98.3	32.0	242.1	56.9	12.6	23.7	9.9	15.4	9.9	18.2	26.5	72.1	242.1	31.3
27	74.9	123.2	34.8	33.4	87.2	12.6	8.5	1.6	29.2	9.9	9.9	11.3	11.3	5.7	3.0	78.9	50.0	18.2	12.6	20.9	24.4	14.0	25.1	63.8	123.2	31.8
28	34.8	12.6	32.4	11.3	5.7	20.9	8.5	5.7	19.6	32.0	25.1	62.4	14.0	36.1	4.3	1.6	1.6	4.4	5.7	15.4	8.5	19.6	16.8	8.5	62.4	17.0
Hourly Max	260.0	134.3	95.6	258.6	313.9	228.2	167.4	150.8	149.5	163.3	208.9	142.5	98.3	272.5	242.1	224.1	184.0	178.5	143.9	172.1	159.1	141.2	165.0	91.3		
Hourly Average	37.3	34.3	33.8	42.5	46.2	35.6	35.6	35.1	31.8	45.5	56.9	39.3	40.0	46.2	44.8	38.7	34.6	40.3	36.3	37.9	26.1	28.2	29.5	31.3		

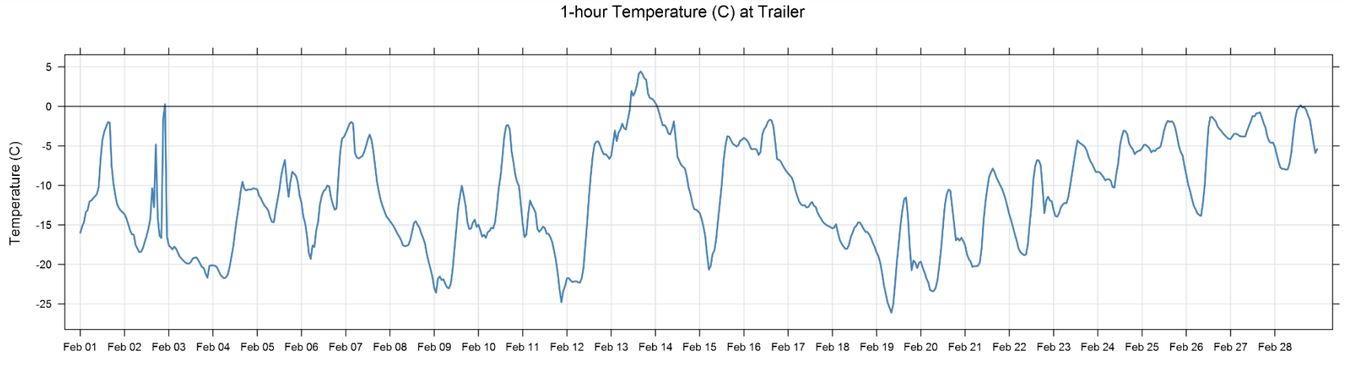
C = CALIBRATION



Number of 24HR Exceedances	2		Objective	100	UG/M3
Number of Non-Zero Readings	668				
Maximum 1-HR Average	313.9	UG/M3			
Maximum 24-HR Average	117.0	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	7	HRS	Operational Uptime	100.0	%
Standard Deviation	42.5		Monthly Average	37.7	UG/M3

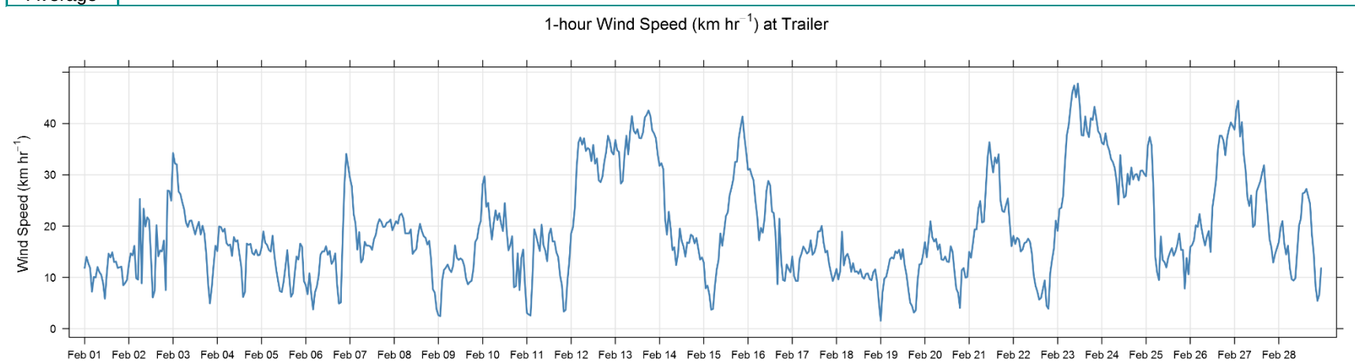
Lagoon Temperature (°C) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	-16.0	-15.2	-14.7	-13.4	-13.1	-12.0	-11.9	-11.6	-11.4	-11.1	-10.2	-6.7	-4.2	-3.2	-2.6	-2.0	-2.1	-7.6	-9.8	-11.2	-12.4	-12.9	-13.2	-13.4	-2.0	-10.1
2	-13.7	-14.2	-14.9	-15.7	-16.2	-16.2	-17.5	-18.0	-18.4	-18.4	-17.9	-17.1	-16.4	-15.4	-14.2	-10.3	-12.8	-4.8	-14.0	-16.4	-16.7	-1.5	0.3	-16.4	0.3	-14.0
3	-17.6	-17.8	-18.1	-17.7	-18.0	-18.5	-19.0	-19.3	-19.5	-19.8	-19.9	-19.9	-19.7	-19.3	-19.1	-19.1	-19.4	-19.9	-20.3	-20.5	-21.2	-21.7	-20.2	-20.1	-17.6	-19.4
4	-20.1	-20.2	-20.3	-20.8	-21.3	-21.6	-21.7	-21.6	-21.3	-20.3	-19.0	-17.7	-15.8	-14.1	-12.6	-10.7	-9.5	-10.5	-10.6	-10.5	-10.5	-10.5	-10.4	-10.4	-9.5	-15.9
5	-10.5	-11.3	-11.7	-12.2	-12.6	-12.8	-13.2	-14.0	-14.6	-14.7	-13.1	-11.9	-10.5	-8.8	-7.6	-6.8	-9.5	-11.4	-9.5	-8.3	-8.5	-8.8	-9.6	-11.3	-6.8	-11.0
6	-12.2	-13.9	-14.8	-16.4	-18.6	-19.3	-17.6	-17.8	-15.7	-14.6	-12.4	-11.3	-10.7	-10.5	-10.0	-10.1	-11.5	-12.4	-13.1	-12.9	-9.0	-5.8	-4.1	-3.9	-3.9	-12.4
7	-3.4	-2.9	-2.2	-2.0	-2.2	-5.9	-6.4	-6.6	-6.4	-6.3	-5.8	-5.0	-4.2	-3.6	-4.3	-5.7	-7.6	-9.6	-10.8	-11.9	-12.6	-13.3	-13.9	-14.2	-2.0	-6.9
8	-14.5	-14.8	-15.2	-15.6	-16.1	-16.5	-16.9	-17.6	-17.7	-17.6	-17.5	-16.9	-15.8	-14.8	-14.5	-15.0	-15.3	-16.1	-16.7	-17.4	-18.7	-19.7	-20.6	-21.5	-14.5	-16.8
9	-23.0	-23.6	-21.8	-21.5	-22.0	-21.9	-22.5	-22.9	-23.0	-22.4	-20.7	-18.0	-15.4	-12.9	-11.3	-10.0	-11.2	-12.5	-14.6	-15.5	-15.4	-14.7	-14.3	-15.3	-10.0	-17.8
10	-15.0	-15.7	-16.5	-16.2	-16.6	-15.9	-15.8	-15.4	-15.4	-14.7	-12.7	-10.4	-8.8	-6.4	-3.9	-2.5	-2.4	-2.9	-5.7	-7.1	-8.7	-9.6	-10.1	-12.4	-2.4	-10.9
11	-14.9	-16.5	-16.2	-13.6	-11.9	-12.5	-12.9	-13.5	-15.5	-15.9	-15.6	-15.2	-15.4	-16.1	-16.1	-16.5	-17.2	-18.2	-19.4	-21.1	-23.2	-24.8	-23.4	-22.7	-11.9	-17.0
12	-21.8	-21.7	-22.0	-22.2	-22.2	-22.1	-22.2	-22.3	-21.8	-20.4	-17.5	-14.6	-11.3	-8.6	-6.2	-4.8	-4.5	-4.4	-4.9	-5.6	-6.1	-6.0	-6.3	-6.6	-4.4	-13.6
13	-6.3	-4.7	-3.1	-4.4	-3.3	-2.9	-2.2	-2.8	-2.9	-1.7	-0.6	1.9	1.4	1.8	2.7	4.1	4.4	4.1	3.6	3.4	1.6	1.1	1.0	0.8	4.4	-0.1
14	0.4	0.0	-0.8	-1.6	-2.4	-2.4	-2.7	-3.4	-3.6	-2.9	-1.9	-4.1	-6.4	-6.9	-7.4	-7.7	-7.9	-8.8	-10.3	-11.1	-12.2	-13.0	-13.1	-13.3	0.4	-6.0
15	-13.5	-14.2	-15.2	-16.4	-18.7	-20.7	-20.2	-18.6	-18.3	-16.7	-14.4	-12.1	-9.8	-6.8	-5.0	-3.8	-3.8	-4.3	-4.7	-4.9	-5.1	-4.9	-4.3	-4.2	-3.8	-10.9
16	-4.0	-4.2	-4.4	-4.9	-5.4	-5.4	-5.4	-5.5	-6.1	-5.8	-3.6	-2.9	-2.6	-2.0	-1.7	-1.8	-2.5	-4.5	-6.7	-6.8	-7.0	-7.5	-7.8	-8.2	-1.7	-4.8
17	-8.5	-8.8	-9.0	-9.7	-10.6	-11.4	-12.1	-12.4	-12.6	-12.5	-12.8	-12.7	-12.3	-12.1	-12.6	-12.7	-13.5	-13.9	-14.3	-14.7	-14.9	-15.0	-15.2	-15.3	-8.5	-12.5
18	-15.4	-15.3	-14.9	-16.0	-16.9	-17.4	-17.7	-18.0	-18.0	-17.5	-16.5	-16.0	-15.3	-15.1	-14.7	-14.7	-15.1	-15.5	-15.9	-15.9	-16.2	-16.7	-17.3	-17.8	-14.7	-16.2
19	-18.5	-19.0	-19.8	-21.1	-22.7	-23.8	-24.8	-25.5	-26.1	-25.1	-22.5	-19.7	-17.3	-14.9	-13.1	-11.7	-11.5	-13.9	-17.9	-20.7	-19.5	-19.8	-20.5	-19.8	-11.5	-19.5
20	-19.6	-20.4	-21.0	-21.8	-22.3	-23.2	-23.4	-23.4	-23.0	-22.0	-20.1	-18.0	-15.2	-12.6	-11.2	-10.5	-10.7	-12.7	-14.8	-16.9	-16.7	-17.0	-16.6	-17.1	-10.5	-17.9
21	-17.6	-18.7	-19.3	-19.7	-20.3	-20.2	-20.2	-20.2	-19.7	-17.9	-14.5	-12.2	-10.4	-9.0	-8.4	-7.9	-8.3	-9.0	-9.5	-10.0	-10.4	-11.1	-11.8	-12.8	-7.9	-14.1
22	-13.7	-14.4	-15.3	-16.2	-17.0	-18.0	-18.4	-18.7	-18.8	-18.8	-17.5	-14.9	-12.6	-9.3	-7.6	-6.8	-6.8	-7.5	-10.2	-13.5	-11.9	-11.4	-11.9	-12.0	-6.8	-13.5
23	-13.1	-13.9	-13.9	-13.5	-12.8	-12.4	-12.2	-12.3	-11.4	-10.0	-8.5	-7.0	-5.5	-4.3	-4.6	-4.7	-4.9	-5.1	-5.6	-6.4	-7.0	-7.3	-7.9	-8.3	-4.3	-8.9
24	-8.3	-8.3	-8.6	-8.9	-9.4	-9.2	-9.2	-9.4	-10.2	-10.3	-8.5	-7.3	-5.0	-3.8	-3.1	-3.1	-3.5	-4.7	-5.1	-5.4	-6.0	-5.8	-5.7	-5.6	-3.1	-6.9
25	-5.3	-4.9	-4.9	-5.1	-5.3	-5.8	-5.6	-5.7	-5.4	-5.3	-5.1	-4.1	-3.0	-2.2	-1.8	-2.0	-1.9	-2.1	-2.7	-3.8	-5.0	-5.8	-6.2	-7.5	-1.8	-4.4
26	-8.7	-9.9	-10.6	-11.6	-12.5	-13.0	-13.5	-13.7	-13.9	-12.2	-10.0	-6.1	-2.7	-1.4	-1.3	-1.6	-1.9	-2.6	-2.9	-3.1	-3.4	-3.7	-3.9	-4.1	-1.3	-7.0
27	-4.1	-3.8	-3.5	-3.5	-3.6	-3.8	-3.8	-3.8	-3.8	-3.1	-2.5	-1.9	-1.2	-1.3	-0.9	-0.9	-0.8	-1.4	-2.2	-2.7	-3.9	-4.4	-4.6	-4.6	-0.8	-2.9
28	-5.1	-6.1	-7.0	-7.7	-7.9	-7.9	-8.0	-8.0	-7.2	-5.8	-3.6	-1.7	-0.5	-0.2	0.1	-0.1	-0.1	-0.4	-1.1	-1.7	-3.1	-4.6	-5.9	-5.4	0.1	-4.1
Hourly Max	0.4	0.0	-0.8	-1.6	-2.2	-2.4	-2.2	-2.8	-2.9	-1.7	-0.6	1.9	1.4	1.8	2.7	4.1	4.4	4.1	3.6	3.4	1.6	1.1	1.0	0.8		
Hourly Average	-12.3	-12.7	-12.8	-13.2	-13.6	-14.0	-14.2	-14.4	-14.3	-13.7	-12.3	-10.8	-9.5	-8.3	-7.6	-7.1	-7.6	-8.3	-9.6	-10.4	-10.8	-10.6	-10.6	-11.6		



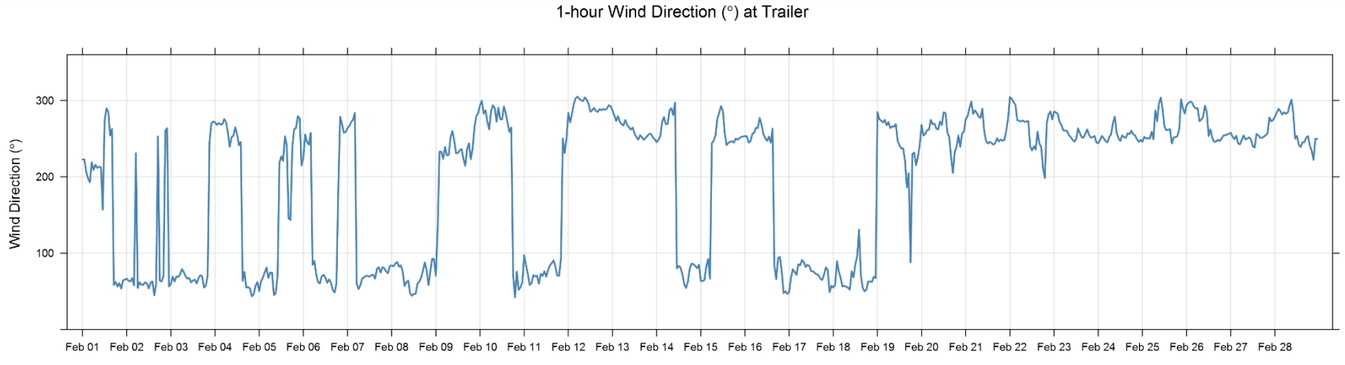
Lagoon Wind Speed (km/hr) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	11.8	14.0	12.8	11.8	7.2	10.1	10.0	12.0	11.0	10.5	9.0	5.9	10.6	14.6	13.9	14.9	13.0	13.1	11.8	12.0	12.1	8.5	8.9	9.5	14.9	11.2
2	12.5	14.7	14.3	16.2	9.8	9.6	25.3	8.8	23.4	19.9	21.7	21.2	14.2	6.1	7.4	20.2	14.1	15.3	15.1	17.2	7.5	26.9	26.8	25.0	26.9	16.4
3	34.3	32.2	32.0	26.8	26.2	24.6	23.3	20.7	19.8	21.0	21.1	19.7	18.4	19.8	20.8	18.4	20.1	18.5	14.6	8.9	4.9	8.1	12.4	16.2	34.3	20.1
4	15.1	19.9	19.8	18.9	19.5	16.7	16.2	16.4	14.2	17.9	17.0	17.3	14.6	12.1	6.2	7.2	16.6	16.4	16.5	14.7	14.4	15.4	14.3	14.4	19.9	15.5
5	15.8	19.0	16.8	16.3	15.3	15.0	18.1	14.2	11.4	9.3	7.3	7.1	9.2	12.1	15.3	10.3	6.2	6.9	10.7	14.1	13.5	16.6	16.0	9.3	19.0	12.7
6	8.5	6.7	10.8	6.8	3.8	7.1	8.2	10.3	14.5	15.1	15.1	16.1	14.4	15.2	12.6	13.2	14.7	8.6	4.9	5.1	17.1	28.1	34.1	31.7	34.1	13.4
7	29.4	27.8	22.4	20.5	15.4	18.8	12.9	13.6	16.9	16.2	16.2	16.1	15.4	17.4	18.3	20.3	21.4	20.8	19.8	19.9	20.7	20.8	21.3	19.2	29.4	19.2
8	20.1	20.9	20.5	22.1	22.4	21.5	18.6	18.6	18.6	19.4	14.6	15.1	15.5	18.5	20.4	19.0	18.0	17.7	16.4	17.1	13.5	7.7	7.0	3.8	22.4	17.0
9	2.6	2.5	9.3	11.4	11.9	12.5	11.5	11.0	12.3	16.2	13.8	13.4	13.7	13.4	12.3	9.8	8.6	9.1	9.3	11.7	16.9	17.6	19.9	21.0	21.0	12.2
10	28.2	29.7	23.8	24.5	20.6	17.4	20.6	23.1	21.2	22.5	20.5	19.0	24.5	19.3	15.3	16.3	18.0	8.1	8.3	14.7	7.5	13.8	15.4	8.3	29.7	18.4
11	3.1	2.8	2.6	9.8	19.4	18.1	16.6	15.2	20.3	16.3	15.2	13.2	18.4	19.5	17.0	17.0	14.9	14.0	10.4	8.5	3.3	3.7	9.3	13.1	20.3	12.6
12	18.6	19.8	23.5	31.4	36.3	37.3	35.9	37.1	34.7	35.2	34.9	32.7	35.8	32.2	33.2	28.9	28.6	29.6	32.5	34.5	37.6	36.5	34.5	34.0	37.6	32.3
13	36.8	34.8	34.5	28.3	28.8	33.9	37.6	34.0	38.3	41.5	38.6	38.0	38.9	37.2	37.1	38.2	41.2	41.7	42.6	41.5	38.7	38.1	37.1	34.0	42.6	37.1
14	31.8	32.3	31.1	21.4	18.3	22.8	19.6	15.3	15.9	12.4	14.6	19.5	17.1	16.0	14.0	16.8	16.7	18.3	18.0	16.6	17.7	15.6	13.5	13.9	32.3	18.7
15	12.9	7.9	8.4	6.7	3.7	3.9	8.2	11.5	13.4	18.6	16.2	18.9	22.0	22.7	26.0	27.4	29.1	32.5	32.6	37.2	39.4	41.4	37.5	34.5	41.4	21.4
16	31.0	31.2	29.9	28.9	25.0	21.9	17.2	19.7	18.7	21.6	26.9	28.8	27.9	22.8	22.5	17.9	8.7	21.5	13.2	9.5	9.3	12.5	11.7	11.0	31.2	20.4
17	14.1	10.3	9.3	9.3	13.6	14.6	16.0	15.4	14.6	15.0	17.2	14.4	14.9	16.2	19.0	19.0	20.1	16.8	14.9	15.2	12.6	10.9	9.3	10.3	20.1	14.3
18	11.7	9.6	11.2	18.9	12.3	14.1	14.6	13.4	11.1	12.8	11.1	11.2	10.7	11.6	10.1	9.8	10.7	10.8	9.7	9.4	11.0	11.6	9.3	5.2	18.9	11.3
19	1.5	7.1	9.8	10.1	11.8	13.5	13.9	13.7	15.1	14.7	15.4	13.6	15.5	12.4	10.5	7.7	5.1	4.4	3.1	3.6	9.3	12.5	12.6	14.5	15.5	10.5
20	16.9	13.9	17.3	20.9	17.8	17.0	17.5	15.4	16.5	13.5	13.4	14.1	13.1	13.0	16.1	15.0	11.3	7.8	7.0	4.0	11.4	11.8	10.0	10.1	20.9	13.5
21	15.0	13.8	16.5	19.4	19.4	23.5	24.9	20.7	20.9	27.1	33.3	36.4	32.9	30.5	33.4	32.3	34.0	25.0	23.0	22.7	24.1	25.4	20.6	16.1	36.4	24.6
22	18.1	16.5	17.7	17.4	15.0	15.5	16.7	16.9	17.6	16.9	14.7	10.5	8.4	7.2	5.7	6.0	7.7	9.4	4.5	3.9	10.9	13.5	15.7	21.1	21.1	12.8
23	19.1	23.4	23.6	25.9	32.5	37.7	39.7	43.1	46.1	47.4	45.1	47.8	43.7	37.7	37.7	41.4	38.5	37.4	41.0	40.7	43.3	41.0	38.5	37.9	47.8	37.9
24	36.3	35.9	38.1	35.8	34.8	33.1	32.5	31.3	28.8	24.2	33.9	28.7	25.6	25.9	30.2	28.1	31.4	29.1	30.0	30.1	28.9	30.8	30.9	30.2	38.1	31.0
25	29.7	35.8	37.4	35.7	27.1	14.0	11.0	9.5	18.0	13.4	13.0	11.9	13.8	14.9	15.7	14.2	15.1	16.5	18.6	15.3	15.4	7.8	13.8	10.6	37.4	17.8
26	15.9	16.3	17.3	20.2	19.9	22.4	19.8	17.8	16.2	17.9	19.0	15.0	23.6	26.1	29.0	35.1	37.6	37.6	36.6	33.8	37.2	38.9	40.2	39.5	40.2	26.4
27	38.8	42.9	44.5	37.5	40.3	34.1	30.9	25.6	23.9	26.0	19.8	20.3	26.8	27.7	28.8	30.4	31.9	26.6	22.1	17.5	15.8	12.9	14.5	15.7	44.5	27.3
28	16.9	19.7	21.0	16.6	14.5	16.2	11.9	9.7	9.4	9.8	15.0	20.1	21.5	26.4	26.5	27.3	25.8	24.3	18.3	14.5	8.2	5.4	6.7	11.8	27.3	16.6
Hourly Max	38.8	42.9	44.5	37.5	40.3	37.7	39.7	43.1	46.1	47.4	45.1	47.8	43.7	37.7	37.7	41.4	41.2	41.7	42.6	41.5	43.3	41.4	40.2	39.5		
Hourly Average	19.5	20.0	20.6	20.3	19.4	19.5	19.6	18.4	19.4	19.7	19.8	19.5	20.0	19.6	19.8	20.1	20.0	19.2	18.1	17.6	17.9	19.1	19.3	18.6		



Lagoon Wind Direction (°) – February 2018

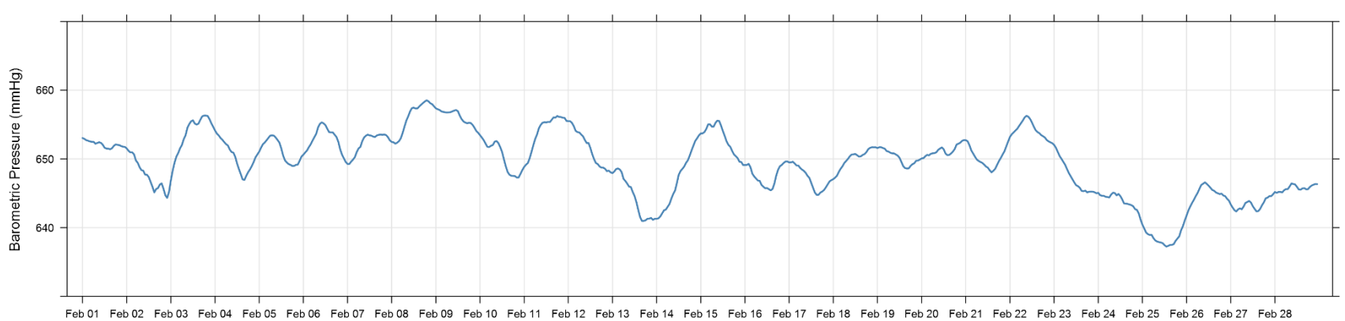
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	222.8	222.7	206.3	198.0	192.9	219.2	209.1	215.9	211.6	213.2	212.2	157.0	273.5	289.6	285.2	254.1	262.9	58.5	62.2	56.4	60.7	53.6	64.4	65.4	289.6	177.8
2	66.7	63.8	63.1	67.2	57.7	230.8	54.4	61.8	58.8	58.6	61.8	60.3	53.9	61.3	63.0	44.7	60.2	253.0	64.0	63.0	70.1	260.3	263.7	56.3	263.7	92.4
3	59.8	69.3	62.9	69.4	68.8	72.1	79.0	75.5	69.6	66.7	67.4	61.8	64.0	65.5	60.3	67.2	71.1	69.7	54.9	57.5	70.5	245.5	269.7	272.4	272.4	91.3
4	271.5	267.9	270.4	268.6	268.9	275.7	271.5	258.1	239.3	251.9	253.8	264.8	255.6	241.3	245.5	63.7	75.3	55.0	55.6	53.7	43.4	46.2	57.0	62.2	275.7	184.0
5	50.3	62.8	68.0	74.8	81.1	67.7	74.5	74.3	45.2	47.4	70.4	218.4	226.7	220.9	253.0	241.7	145.4	143.6	238.2	262.3	263.7	279.3	276.7	214.9	279.3	154.2
6	224.6	255.4	245.4	242.1	257.5	84.6	89.8	72.0	62.0	60.3	69.6	71.5	68.2	61.2	65.7	61.4	51.7	48.5	60.4	184.5	278.7	269.1	257.8	258.5	278.7	141.7
7	264.0	266.4	271.8	274.8	283.8	59.7	52.9	58.3	67.0	68.3	70.4	70.1	69.2	71.3	71.6	66.7	79.4	81.6	74.6	81.5	80.2	76.1	73.7	83.1	283.8	113.2
8	83.9	82.8	86.4	88.4	82.3	84.1	75.9	57.0	62.0	64.1	47.9	44.3	46.6	46.7	59.7	62.8	67.9	76.9	87.8	77.5	58.3	75.8	92.8	92.1	92.8	71.0
9	70.5	131.5	233.0	232.8	223.5	239.1	228.1	228.6	251.4	259.9	247.6	230.8	231.3	234.8	236.3	223.6	214.4	236.1	243.8	223.1	236.7	264.9	279.3	283.3	283.3	228.5
10	293.5	299.7	282.8	287.1	272.2	262.2	285.8	293.8	290.1	272.2	290.5	275.4	275.2	292.2	282.9	270.5	258.7	264.5	72.1	42.0	75.8	52.0	55.5	61.6	299.7	225.3
11	97.3	84.7	72.8	58.4	60.6	71.2	69.6	70.4	60.0	72.8	70.2	76.2	69.2	77.8	84.0	87.0	90.6	82.2	70.5	70.5	92.9	250.3	231.1	249.8	250.3	96.7
12	283.8	271.2	282.7	295.5	302.8	305.0	302.0	300.0	299.2	303.9	301.0	295.5	285.3	287.1	290.2	286.3	284.9	288.6	287.2	288.8	287.7	289.4	293.7	292.6	305.0	291.9
13	286.8	280.3	273.1	279.3	271.9	268.9	267.3	274.4	267.6	264.8	261.8	264.5	256.7	252.0	248.7	254.5	251.9	248.5	250.8	253.7	256.5	255.9	251.4	249.1	286.8	262.1
14	245.4	248.5	253.3	272.3	278.1	268.8	269.3	287.1	289.8	280.8	297.2	79.9	83.4	81.1	72.3	59.6	54.4	62.8	79.9	86.3	85.6	83.3	80.3	84.8	297.2	166.0
15	63.6	63.4	64.9	83.1	92.3	66.5	244.0	247.4	254.1	276.3	283.8	292.6	286.4	257.4	241.5	244.5	245.8	246.6	244.8	250.2	248.6	250.7	252.2	252.8	292.6	210.6
16	253.4	253.2	244.9	246.6	256.0	257.8	264.2	264.0	277.1	268.3	256.1	250.5	247.0	252.6	244.7	263.2	83.4	66.0	93.5	95.2	75.8	47.7	50.1	46.7	277.1	194.1
17	48.8	67.5	78.8	75.5	71.5	85.5	84.1	91.1	88.0	81.9	84.9	83.1	76.5	76.4	73.9	72.4	71.1	66.5	64.9	72.3	81.4	77.6	49.0	57.3	91.1	74.2
18	54.9	58.5	89.5	76.1	67.7	56.4	57.2	56.1	54.7	52.2	76.1	68.4	85.6	96.0	130.8	70.9	54.7	50.0	52.1	63.0	62.8	62.4	69.0	67.4	130.8	68.0
19	284.8	275.6	273.6	271.1	274.6	267.5	271.6	263.7	265.9	265.6	269.1	246.8	241.2	237.1	237.2	220.4	186.1	204.9	88.0	229.9	231.8	215.2	226.3	242.2	284.8	241.3
20	268.0	254.0	256.2	261.3	261.6	274.6	268.8	269.6	263.3	261.9	272.3	267.8	284.4	283.3	258.7	252.2	226.0	205.0	232.4	239.3	254.1	239.3	256.7	259.4	284.4	257.1
21	275.7	279.3	289.8	298.6	282.3	286.9	283.7	278.7	277.2	289.2	260.4	247.3	243.5	245.8	244.3	242.0	244.2	250.5	246.2	248.9	247.2	248.3	260.6	276.2	298.6	264.4
22	304.4	302.0	297.8	294.1	274.2	273.4	272.4	273.8	271.9	272.5	273.1	239.8	234.6	239.9	235.7	259.1	243.8	238.9	210.8	198.4	269.7	281.7	285.7	275.2	304.4	263.4
23	285.6	284.2	282.5	271.9	267.7	260.9	260.6	260.1	255.1	251.9	248.7	246.0	249.3	263.5	257.3	251.6	251.4	256.4	262.2	254.7	251.3	252.1	253.5	245.0	285.6	259.3
24	243.8	248.2	253.6	250.4	246.9	245.1	252.1	255.9	270.4	278.7	257.7	250.3	246.9	254.3	251.9	251.1	257.1	255.7	260.5	255.6	254.4	249.3	245.8	248.4	278.7	253.5
25	245.8	252.2	250.1	250.9	249.9	258.9	249.0	286.8	272.7	296.4	303.8	287.2	265.6	261.1	261.6	262.4	243.6	251.6	251.9	253.3	262.1	301.4	289.8	282.9	303.8	266.3
26	293.8	296.5	298.5	297.2	291.8	289.5	290.1	272.8	274.8	278.6	293.2	284.6	253.4	262.0	250.9	245.8	246.0	248.5	246.9	250.0	254.1	254.5	255.3	256.4	298.5	270.2
27	257.8	252.4	249.2	253.7	243.8	242.4	248.5	254.1	248.9	250.1	251.6	248.8	240.1	238.5	256.0	254.6	251.0	251.1	252.6	254.4	256.7	277.6	272.7	274.2	277.6	253.4
28	278.9	284.0	289.1	285.8	281.5	284.5	282.7	284.1	293.7	301.0	283.1	249.9	253.5	242.1	239.1	245.1	245.4	251.2	253.3	240.9	234.0	222.3	249.9	249.7	301.0	263.5
Hourly Max	304.4	302.0	298.5	298.6	302.8	305.0	302.0	300.0	299.2	303.9	303.8	295.5	286.4	292.2	290.2	286.3	284.9	288.6	287.2	288.8	287.7	301.4	293.7	292.6		
Hourly Average	202.9	206.4	210.4	211.6	209.4	202.1	202.1	203.0	201.5	203.9	204.8	194.1	195.2	196.2	196.5	185.0	172.1	171.9	159.4	168.1	176.6	195.8	198.7	191.4		



Lagoon Pressure (mmHg) – February 2018

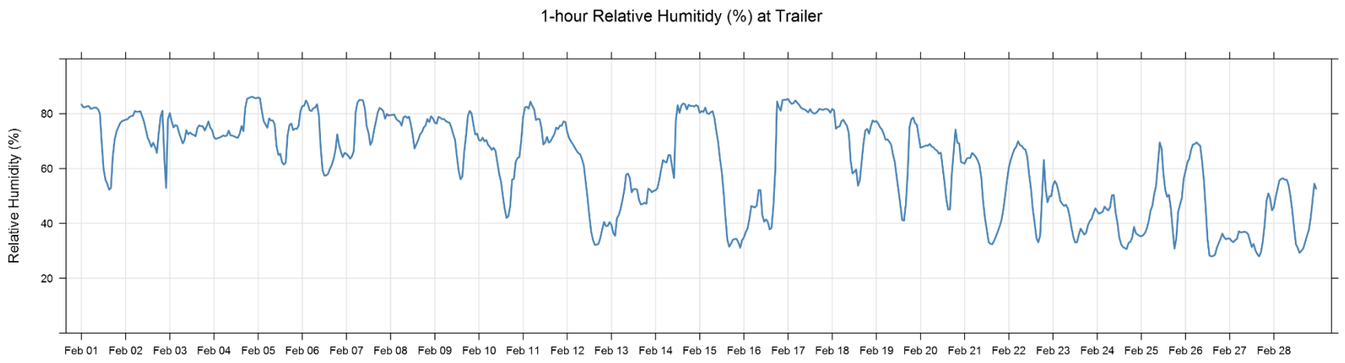
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	653.0	652.9	652.7	652.6	652.5	652.5	652.5	652.2	652.3	652.4	652.3	652.1	651.6	651.5	651.5	651.4	651.5	651.9	652.1	652.0	652.0	651.9	651.8	651.8	653.0	652.1
2	651.5	651.2	650.9	651.0	650.7	649.8	649.4	648.8	648.4	648.3	647.7	647.7	647.4	646.7	645.9	645.1	645.6	645.8	646.3	646.4	645.7	644.7	644.3	645.2	651.5	647.7
3	646.9	648.3	649.4	650.3	650.9	651.5	652.0	652.9	653.4	654.5	655.1	655.5	655.6	655.2	655.0	655.1	655.7	656.2	656.3	656.3	656.3	655.8	655.2	654.7	656.3	653.7
4	654.1	653.7	653.4	653.0	652.8	652.4	652.2	652.0	651.4	651.0	650.9	650.3	649.3	648.5	647.8	647.0	646.9	647.6	648.1	648.5	649.0	649.5	650.2	650.6	654.1	650.4
5	651.1	651.6	652.1	652.4	652.7	653.1	653.4	653.4	653.4	653.1	652.8	652.4	651.5	650.5	649.8	649.5	649.2	649.1	649.0	649.0	649.1	649.2	649.7	650.3	653.4	651.1
6	650.6	650.9	651.2	651.7	652.1	652.7	653.2	653.7	654.6	655.1	655.3	655.2	654.9	654.4	653.9	653.9	653.9	653.5	653.2	652.5	651.4	650.6	650.1	649.6	655.3	652.8
7	649.3	649.3	649.6	649.9	650.3	651.0	651.5	651.8	652.6	653.1	653.4	653.5	653.4	653.4	653.2	653.2	653.4	653.5	653.5	653.5	653.5	653.5	653.2	652.7	653.5	652.3
8	652.5	652.4	652.2	652.4	652.6	653.0	653.8	654.7	655.6	656.2	656.9	657.4	657.5	657.3	657.3	657.6	657.9	658.1	658.4	658.5	658.4	658.1	658.0	657.7	658.5	656.0
9	657.4	657.2	657.1	656.9	656.8	656.8	656.8	656.8	656.8	656.9	657.0	657.1	656.9	656.3	655.8	655.5	655.3	655.2	655.3	655.2	654.9	654.5	654.1	653.8	657.4	656.1
10	653.5	653.1	652.7	652.2	651.8	651.7	651.9	652.0	652.5	652.6	652.3	651.7	651.0	650.0	648.9	648.1	647.7	647.6	647.5	647.5	647.3	647.3	647.8	648.4	653.5	650.3
11	648.8	649.2	649.4	650.1	651.0	652.0	652.9	653.6	654.5	655.0	655.3	655.3	655.3	655.4	655.4	655.7	656.0	656.0	656.2	656.1	656.1	656.0	656.0	655.5	656.2	654.0
12	655.5	655.5	655.2	654.8	654.1	653.9	653.8	653.6	653.3	652.8	652.3	652.3	651.6	650.7	650.0	649.4	649.2	648.9	648.7	648.7	648.6	648.2	648.3	648.0	655.5	651.6
13	647.9	648.2	648.5	648.6	648.5	648.1	647.1	646.8	646.4	646.0	645.9	645.2	644.6	643.7	642.6	641.6	641.0	641.0	641.1	641.3	641.3	641.4	641.1	641.3	648.6	644.5
14	641.3	641.4	641.6	642.1	642.5	642.6	643.0	643.4	644.2	644.9	645.4	646.5	647.7	648.2	648.6	648.9	649.4	649.8	650.5	651.3	651.9	652.6	653.0	653.4	653.4	646.8
15	653.7	653.7	653.9	654.4	655.0	655.0	654.7	654.7	655.3	655.6	655.5	654.8	654.1	653.3	652.6	652.0	651.8	651.2	650.7	650.4	650.1	649.6	649.6	649.1	655.6	652.9
16	649.1	649.1	649.3	648.8	647.9	647.5	647.2	646.9	646.8	646.2	646.0	645.7	645.8	645.6	645.4	645.6	646.4	647.6	648.4	648.9	649.1	649.4	649.6	649.6	649.6	647.6
17	649.5	649.5	649.6	649.3	649.1	649.0	648.7	648.4	648.3	648.0	647.5	647.2	646.5	645.8	645.1	644.8	644.8	645.1	645.3	645.5	645.9	646.3	646.7	646.9	649.6	647.2
18	647.1	647.3	647.6	648.1	648.6	648.9	649.4	649.7	650.0	650.4	650.6	650.7	650.7	650.5	650.3	650.4	650.6	650.7	651.0	651.4	651.6	651.7	651.7	651.7	651.7	650.0
19	651.6	651.7	651.7	651.6	651.5	651.2	651.1	650.9	650.8	650.8	650.6	650.5	650.2	649.6	649.0	648.7	648.6	648.6	649.0	649.2	649.4	649.7	649.8	649.9	651.7	650.2
20	650.1	650.1	650.4	650.6	650.5	650.7	650.8	650.8	651.0	651.3	651.5	651.7	651.4	650.8	650.5	650.6	650.8	651.1	651.4	652.1	652.2	652.4	652.6	652.7	652.7	651.2
21	652.7	652.6	652.0	651.2	650.8	650.3	649.9	649.7	649.6	649.4	649.2	648.9	648.7	648.3	648.0	648.3	648.6	649.1	649.7	650.1	650.6	651.1	651.8	652.5	652.7	650.1
22	653.2	653.6	653.9	654.1	654.4	654.8	655.2	655.6	656.0	656.3	656.1	655.8	655.3	654.7	654.2	653.9	653.7	653.5	653.3	653.1	652.8	652.6	652.4	652.3	656.3	654.2
23	652.0	651.6	651.0	650.4	650.0	649.6	649.1	648.5	648.0	647.5	647.0	646.6	646.2	646.0	645.8	645.3	645.3	645.4	645.1	645.2	645.2	645.2	645.1	645.0	652.0	647.4
24	645.1	644.7	644.6	644.6	644.5	644.5	644.4	644.8	645.1	645.0	644.7	644.9	644.6	644.1	643.5	643.5	643.4	643.4	643.3	643.1	642.7	642.6	642.1	641.2	645.1	643.9
25	640.4	639.9	639.3	639.1	638.9	639.0	638.5	638.1	638.0	637.9	637.8	637.7	637.5	637.2	637.3	637.5	637.5	637.6	638.1	638.4	638.7	639.6	640.2	641.0	641.0	638.6
26	641.8	642.5	643.1	643.6	644.1	644.6	645.1	645.7	646.2	646.4	646.6	646.4	646.1	645.8	645.5	645.4	645.1	645.0	644.9	644.9	644.7	644.6	644.2	643.9	646.6	644.8
27	643.4	642.9	642.6	642.4	642.7	642.8	642.7	643.1	643.6	643.7	643.9	643.6	643.1	642.7	642.4	642.4	642.7	643.3	643.7	644.3	644.4	644.6	644.6	644.9	644.9	643.3
28	645.2	645.1	645.2	645.2	645.1	645.4	645.6	645.6	646.0	646.4	646.4	646.3	645.9	645.6	645.5	645.7	645.8	645.6	645.6	645.9	646.1	646.3	646.4	646.3	646.4	645.8
Hourly Max	657.4	657.2	657.1	656.9	656.8	656.8	656.8	656.8	656.8	656.9	657.0	657.4	657.5	657.3	657.3	657.6	657.9	658.1	658.4	658.5	658.4	658.1	658.0	657.7		
Hourly Average	649.6	649.6	649.7	649.7	649.7	649.8	649.9	649.9	650.1	650.2	650.2	650.1	649.8	649.4	649.0	648.8	648.9	649.0	649.1	649.3	649.3	649.2	649.3	649.3		

1-hour Barometric Pressures (mmHg) at Trailer



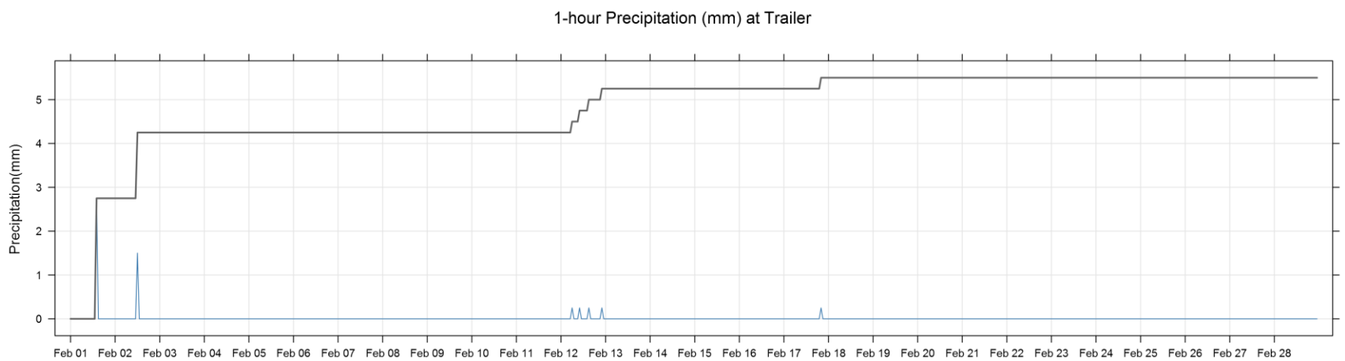
Lagoon Relative Humidity (%) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	83.4	82.4	82.4	82.7	82.8	81.8	82.0	82.2	82.2	81.6	80.0	69.4	59.9	56.0	54.4	52.3	52.9	64.3	70.4	73.4	75.0	76.5	77.3	77.5	83.4	73.4
2	77.8	78.0	78.8	79.1	79.3	80.9	80.7	80.7	80.9	79.1	77.0	74.1	71.2	69.7	67.9	69.4	67.9	65.7	73.0	79.0	81.1	64.3	52.9	78.0	81.1	74.4
3	80.2	77.3	75.0	75.8	75.6	73.1	71.1	69.2	70.4	74.0	72.5	73.1	72.6	72.3	71.8	74.7	75.7	75.4	75.4	73.9	75.3	77.2	74.9	74.0	80.2	74.2
4	71.4	70.8	71.1	71.3	71.6	72.1	71.8	72.0	73.8	72.1	72.0	71.7	71.4	71.2	72.7	75.5	73.6	82.1	85.4	85.8	86.0	86.1	85.7	85.7	86.1	76.0
5	85.9	85.6	81.0	77.3	76.1	74.9	78.3	77.5	77.5	76.1	68.1	65.0	65.4	62.3	61.5	62.1	72.1	75.8	76.4	74.0	74.5	74.4	75.6	80.9	85.9	74.1
6	82.8	82.9	84.8	83.5	81.3	81.0	82.0	82.2	83.4	79.4	67.7	59.4	57.5	57.5	58.1	59.9	61.3	63.5	66.6	72.4	68.5	66.1	64.2	65.7	84.8	71.3
7	65.3	64.6	63.6	64.5	66.5	80.6	84.1	85.0	85.0	84.8	81.9	75.4	73.0	68.6	70.2	74.0	77.1	80.4	82.1	81.7	81.0	78.2	79.9	79.3	85.0	76.1
8	79.5	79.5	79.7	78.2	77.5	77.1	75.6	78.7	79.1	78.5	78.9	76.0	72.3	67.3	68.8	70.4	72.5	73.2	75.0	75.7	78.0	76.9	79.1	78.3	79.7	76.1
9	76.7	76.4	78.8	78.5	78.0	78.1	77.3	76.9	76.7	75.0	72.5	70.6	64.5	59.1	56.1	57.2	66.1	72.1	79.2	81.0	80.1	76.0	72.4	72.8	81.0	73.0
10	70.4	70.2	71.2	69.9	70.4	68.6	67.8	66.8	67.6	66.4	62.2	58.1	55.2	50.0	45.3	42.0	42.6	46.4	55.9	56.3	62.5	63.9	64.2	70.4	71.2	61.0
11	78.8	82.3	82.5	81.8	84.4	82.8	81.7	77.7	78.1	78.0	74.7	68.8	69.5	71.6	69.5	70.0	71.3	72.6	75.0	74.4	75.6	75.6	77.2	76.9	84.4	76.3
12	73.3	71.1	69.9	68.9	67.8	66.6	65.7	65.2	63.5	61.1	55.3	49.4	42.8	37.0	33.9	32.2	32.3	32.6	34.8	37.9	40.6	39.1	39.1	40.5	73.3	50.8
13	39.5	36.5	35.5	41.9	43.1	45.4	48.5	52.2	57.7	58.1	56.6	51.3	52.4	52.6	52.3	48.5	46.9	47.1	47.5	47.2	52.7	52.3	51.3	51.9	58.1	48.7
14	52.1	52.8	55.8	59.6	63.1	62.5	62.2	64.9	64.9	60.7	56.6	77.4	83.1	80.3	83.0	83.7	83.5	81.5	83.3	82.8	82.8	82.6	83.1	82.8	83.7	71.9
15	80.3	80.9	80.6	82.2	80.1	79.9	80.5	80.9	78.3	73.7	69.6	63.5	58.7	51.0	42.0	34.1	31.5	32.6	34.0	34.3	34.4	33.1	31.1	33.8	82.2	57.5
16	34.9	36.8	38.2	41.7	46.3	46.1	45.8	46.6	52.1	52.2	43.1	40.6	41.5	40.6	37.8	38.3	46.0	58.8	84.4	82.4	81.1	84.9	85.1	85.1	85.1	53.8
17	85.4	84.2	83.6	83.9	84.8	84.0	83.3	82.2	81.8	81.6	81.0	80.5	81.7	80.5	80.1	80.2	80.8	81.8	81.5	81.4	81.7	81.7	81.3	80.4	85.4	82.0
18	81.8	81.1	74.5	75.2	75.4	77.2	77.8	76.6	75.6	72.9	62.9	58.2	58.8	59.7	53.8	55.7	62.5	69.2	73.9	74.4	72.7	75.4	77.5	77.0	81.8	70.8
19	77.3	76.4	75.0	74.2	72.6	70.5	70.6	69.8	68.7	65.2	62.4	57.1	52.1	46.9	41.3	41.0	47.0	58.2	75.1	78.0	78.6	76.5	76.0	71.6	78.6	65.9
20	67.6	67.9	68.1	68.5	68.3	69.0	68.1	67.7	66.9	66.5	65.4	65.8	60.6	55.0	48.9	45.1	45.2	58.1	66.2	74.2	69.4	69.2	62.4	62.1	74.2	63.6
21	61.8	63.5	63.9	63.8	65.7	65.1	64.3	63.0	61.3	56.7	48.1	42.0	37.7	33.2	32.5	32.4	33.7	35.3	37.1	39.0	41.3	45.1	50.3	55.8	65.7	49.7
22	60.5	63.1	65.2	67.0	68.0	69.9	68.6	68.2	67.3	66.9	64.2	57.8	52.7	45.2	40.1	34.6	33.1	35.6	49.8	63.1	52.4	47.7	49.9	49.9	69.9	55.9
23	53.9	55.5	54.2	51.6	48.1	47.1	46.4	46.8	45.6	42.6	38.6	35.2	33.1	33.1	35.9	38.1	37.0	35.9	36.6	39.4	40.9	41.7	43.8	45.5	55.5	42.8
24	44.5	43.6	43.9	44.3	46.1	45.3	44.7	46.0	50.2	50.4	43.9	40.2	34.9	32.4	31.4	31.0	30.7	32.8	33.3	34.8	38.7	36.5	35.9	35.4	50.4	39.6
25	35.4	35.7	36.6	38.2	40.8	44.7	46.5	50.8	53.7	61.8	69.5	67.2	58.1	52.1	49.7	50.4	45.6	38.0	30.8	34.6	44.3	46.8	49.3	56.3	69.5	47.4
26	59.1	62.2	63.5	66.8	68.8	68.9	69.5	68.9	68.2	62.6	55.6	45.0	34.0	28.3	28.0	28.1	28.5	31.1	32.8	34.3	36.3	34.9	34.2	34.5	69.5	47.7
27	34.5	33.6	33.2	33.9	34.4	37.1	36.7	36.8	37.0	36.8	36.1	33.8	31.4	32.5	30.2	28.9	28.0	29.5	33.4	39.6	48.2	50.9	49.0	44.8	50.9	36.3
28	45.9	49.6	52.6	55.6	56.2	56.4	55.9	55.9	54.0	50.0	44.8	38.3	32.4	31.0	29.3	30.1	30.9	33.1	35.5	37.5	41.9	48.1	54.5	52.7	56.4	44.7
Hourly Max	85.9	85.6	84.8	83.9	84.8	84.0	84.1	85.0	85.0	84.8	81.9	80.5	83.1	80.5	83.0	83.7	83.5	82.1	85.4	85.8	86.0	86.1	85.7	85.7		
Hourly Average	65.7	65.9	65.8	66.4	66.9	67.4	67.4	67.6	67.9	66.6	62.9	59.5	56.4	53.5	51.6	51.4	52.7	55.8	60.2	62.2	63.4	62.9	62.8	64.3		



Lagoon Precipitation (mm) – February 2018

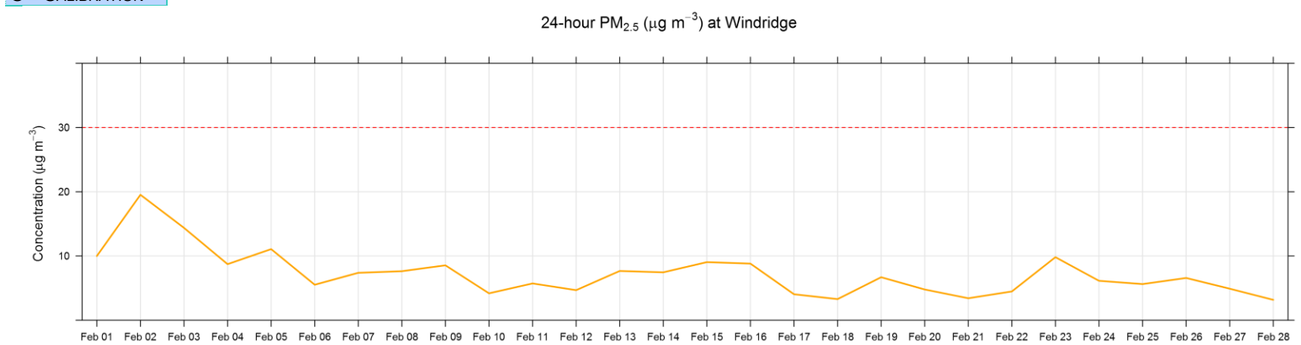
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Total
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.75	2.75
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.50	1.50
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
12	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.25	1.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.3	0.0	0.0	0.0	0.25	0.25
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
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	0.00	0.00
Hourly Max	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	1.5	0.0	2.8	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0		
Hourly Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		



Windridge $PM_{2.5}$ (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	17.2	15.8	14.3	12.1	10.0	8.4	7.3	4.8	2.9	1.5	3.7	7.7	5.9	4.4	3.7	4.0	5.9	5.5	16.5	13.6	13.6	19.8	18.0	23.5	23.5	10.0
2	20.5	23.8	34.8	24.9	14.3	12.8	14.3	13.2	15.4	15.0	**C**	**C**	**C**	28.9	20.5	28.9	18.4	27.8	7.7	29.7	20.5	24.2	7.7	6.6	34.8	19.5
3	23.8	23.8	25.7	26.0	29.3	18.7	18.7	9.9	11.4	16.1	10.3	8.8	7.3	10.7	11.7	8.4	9.9	10.6	11.3	17.2	9.5	9.2	8.1	8.4	29.3	14.4
4	12.5	13.6	8.8	5.9	11.4	12.5	12.0	11.4	7.7	8.1	9.2	10.6	8.1	12.2	9.2	11.4	9.2	5.1	4.8	8.1	5.9	2.6	4.0	5.5	13.6	8.7
5	7.3	6.6	4.0	21.3	15.4	14.3	16.1	13.9	13.6	11.7	11.7	9.9	11.4	28.9	11.7	12.3	9.9	10.3	7.5	4.8	7.0	5.5	5.9	4.8	28.9	11.1
6	0.7	1.8	4.8	3.3	2.9	4.0	8.4	9.5	10.6	5.9	5.5	7.0	6.6	4.4	1.1	2.9	5.5	4.4	2.6	8.1	6.6	10.6	8.8	6.2	10.6	5.5
7	3.8	2.6	4.4	8.1	5.8	5.9	4.8	5.8	5.9	5.1	4.0	4.0	3.3	1.5	2.6	4.8	7.3	14.3	13.9	12.8	10.3	15.0	19.4	11.7	19.4	7.4
8	15.0	9.5	8.4	7.7	11.4	10.0	8.8	7.7	5.9	7.0	6.6	3.7	4.3	3.7	5.5	7.3	7.0	7.0	7.7	11.4	8.4	6.2	5.9	7.0	15.0	7.6
9	7.3	9.5	9.5	5.5	7.0	8.8	12.8	9.5	8.8	8.3	9.5	6.6	6.6	18.3	15.4	18.3	10.2	10.4	5.1	1.5	5.5	6.3	4.0	0.0	18.3	8.5
10	0.7	2.6	3.3	2.2	0.0	2.2	2.9	2.9	3.3	7.3	5.1	1.8	2.2	2.9	6.2	4.8	4.0	2.7	5.9	7.3	8.1	7.7	6.3	7.7	8.1	4.2
11	5.2	4.0	3.7	4.4	4.8	2.9	0.4	5.1	4.8	7.0	5.1	3.7	3.7	5.1	7.3	7.0	7.7	5.5	5.1	13.6	11.4	7.7	7.0	5.1	13.6	5.7
12	5.1	8.4	5.5	3.7	4.0	2.6	1.1	0.0	3.7	3.3	3.3	4.0	2.2	2.6	6.2	9.5	9.5	7.3	5.2	4.4	7.3	7.3	3.7	2.1	9.5	4.7
13	3.7	5.1	5.1	3.7	5.5	4.4	7.0	9.2	9.2	12.1	8.8	6.3	14.4	19.4	12.5	7.5	1.8	4.8	5.1	3.7	7.3	8.1	7.3	12.1	19.4	7.7
14	10.3	17.7	17.2	9.2	7.0	6.6	7.3	9.2	7.3	6.2	8.1	9.5	7.7	8.1	7.7	2.9	2.2	3.3	4.4	6.6	4.4	8.1	5.9	2.1	17.7	7.5
15	1.1	3.3	4.0	2.9	2.1	0.4	2.6	4.4	5.5	6.6	6.2	8.1	8.1	5.1	11.7	18.0	21.6	18.3	12.1	13.6	10.6	11.0	20.9	18.7	21.6	9.0
16	16.9	15.4	9.2	9.5	9.2	8.4	9.2	10.6	7.7	5.5	4.4	7.7	8.4	10.6	8.4	16.5	9.3	6.2	7.5	6.2	7.1	7.0	4.8	5.8	16.9	8.8
17	5.2	5.2	4.0	3.3	3.9	4.0	4.4	2.9	2.2	1.1	0.4	2.2	3.3	2.6	2.2	3.7	3.3	5.2	7.0	7.0	6.6	4.4	4.8	8.1	8.1	4.0
18	7.0	6.3	3.3	0.0	2.1	2.1	0.7	2.7	3.3	2.2	1.5	2.2	2.2	1.5	4.0	4.4	4.8	6.6	5.1	3.8	4.4	4.4	2.2	1.8	7.0	3.3
19	2.2	2.2	3.3	2.7	1.8	4.4	3.7	2.9	3.7	6.2	13.2	10.6	13.7	19.8	9.2	8.8	5.5	4.0	3.7	4.8	11.4	8.1	8.4	6.2	19.8	6.7
20	3.7	2.9	0.8	4.0	7.7	6.2	2.9	2.9	1.8	2.6	5.7	5.9	8.1	6.2	10.6	9.2	7.3	4.8	2.6	3.3	3.7	2.2	4.3	5.1	10.6	4.8
21	2.6	1.8	2.2	1.8	1.8	0.0	0.4	0.7	0.4	3.3	9.9	**C**	**C**	**C**	5.8	4.8	3.7	4.8	5.9	6.2	4.8	3.7	3.7	3.3	9.9	3.4
22	2.6	2.6	3.3	2.6	4.0	1.8	0.0	3.7	3.7	5.5	6.6	5.9	7.0	12.8	12.5	8.4	3.3	0.0	1.1	2.1	2.6	4.0	7.0	4.4	12.8	4.5
23	2.2	4.0	2.6	4.4	8.4	9.2	13.6	9.5	12.9	13.2	13.7	10.6	8.1	7.4	8.8	13.6	12.1	8.1	11.0	15.8	9.9	13.7	12.5	10.3	15.8	9.8
24	9.2	5.1	5.5	6.2	11.3	7.3	5.1	4.4	3.7	4.0	5.5	3.7	3.7	3.3	6.2	5.2	6.2	7.7	8.1	9.5	8.1	5.9	6.2	5.9	11.3	6.1
25	2.6	5.9	8.1	5.9	4.0	3.7	4.0	2.9	0.4	3.7	6.6	3.7	5.5	11.0	13.2	11.7	11.0	9.2	7.0	5.5	3.7	2.2	2.2	1.5	13.2	5.6
26	3.7	2.2	0.7	1.8	2.9	2.9	1.1	2.9	7.0	5.5	10.1	15.0	15.1	9.5	7.3	7.9	5.1	4.4	4.8	6.2	5.5	3.3	11.4	21.3	21.3	6.6
27	11.4	7.8	5.5	5.9	4.4	7.7	4.8	4.8	4.8	3.8	2.9	0.9	4.0	2.2	0.0	1.1	7.0	5.1	19.1	2.1	3.3	3.3	3.7	2.2	19.1	4.9
28	0.0	0.4	1.5	1.5	0.4	1.5	2.6	2.2	4.0	4.0	3.7	2.2	7.3	5.2	5.5	4.8	2.1	4.0	4.4	3.3	6.2	5.5	3.7	0.0	7.3	3.2
Hourly Max	23.8	23.8	34.8	26.0	29.3	18.7	18.7	13.9	15.4	16.1	13.7	15.0	15.1	28.9	20.5	28.9	21.6	27.8	19.1	29.7	20.5	24.2	20.9	23.5		
Hourly Average	7.3	7.5	7.3	6.8	6.9	6.2	6.3	6.1	6.1	6.5	6.7	6.2	6.9	9.2	8.1	8.9	7.5	7.4	7.2	8.3	7.6	7.7	7.4	7.0		

C = CALIBRATION

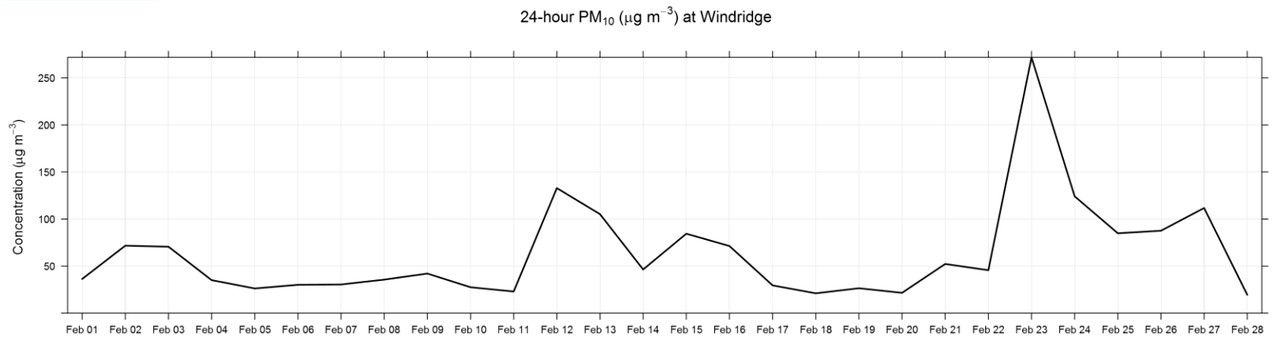


Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Objective	30	UG/M3
Number of Non-Zero Readings	660				
Maximum 1-HR Average	34.8	UG/M3			
Maximum 24-HR Average	19.5	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	6	HRS	Operational Uptime	100.0	%
Standard Deviation	5.3		Monthly Average	7.2	UG/M3

Windridge PM_{10} (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	35.8	45.0	40.7	27.3	18.2	11.8	14.6	14.6	11.1	26.6	32.3	39.3	17.4	46.6	36.5	72.4	65.4	59.0	55.5	37.9	33.0	47.1	37.2	46.6	72.4	36.3
2	41.4	45.7	54.1	35.1	32.3	23.8	42.1	45.0	39.9	33.1	**C**	**C**	**C**	90.8	75.3	74.6	212.7	92.0	147.2	80.2	45.0	55.5	120.4	120.4	212.7	71.7
3	37.9	56.2	90.1	131.0	202.2	142.7	67.5	74.6	55.5	59.8	105.6	112.1	90.1	90.1	78.1	59.1	73.9	62.6	19.6	18.0	11.8	12.5	18.2	25.9	202.2	70.6
4	21.0	33.7	21.0	15.3	16.7	9.7	11.1	12.2	11.8	30.9	36.5	32.3	18.9	80.3	63.3	150.0	32.2	42.8	59.0	58.3	23.1	19.1	27.3	15.3	150.0	35.1
5	9.0	16.9	25.2	21.0	23.1	22.4	15.3	13.2	16.7	18.9	14.8	25.2	54.8	81.6	38.6	64.0	66.8	27.3	19.6	18.2	11.8	10.4	6.9	8.4	81.6	26.2
6	8.2	9.7	8.6	8.5	19.6	21.0	23.8	31.6	30.8	16.7	44.9	36.5	21.7	12.2	11.1	12.5	15.3	18.9	10.4	18.2	27.3	28.0	190.9	96.4	190.9	30.1
7	71.0	54.8	66.8	27.4	21.0	4.7	14.5	9.0	11.1	29.4	13.9	18.6	11.8	11.8	10.4	11.1	18.1	23.1	68.9	67.5	35.1	49.7	41.4	40.0	71.0	30.5
8	25.9	42.8	59.1	57.6	56.2	57.6	67.5	63.3	58.4	53.4	42.8	44.0	15.3	23.8	22.3	51.3	14.6	23.1	14.6	12.5	13.3	11.8	9.7	13.9	67.5	35.6
9	13.9	16.0	55.5	13.3	19.6	21.0	32.3	13.2	13.2	23.1	23.1	46.4	61.2	133.1	88.6	150.0	118.3	16.7	7.6	25.3	25.3	56.2	13.9	22.4	150.0	42.0
10	29.4	23.1	18.2	23.2	25.9	20.3	14.5	9.5	10.4	10.4	16.0	15.3	30.1	72.9	24.5	54.8	72.4	83.7	24.5	37.2	9.7	13.2	11.8	9.7	83.7	27.5
11	11.8	16.0	17.4	33.7	42.8	66.1	52.7	23.8	13.9	49.9	37.9	19.6	13.2	14.6	34.4	11.8	16.7	14.4	12.0	12.5	12.5	9.0	8.3	6.9	66.1	23.0
12	16.7	24.5	40.0	48.5	41.6	48.3	42.1	41.4	54.8	51.3	52.0	76.0	94.3	352.4	236.7	384.8	194.4	169.0	247.3	410.9	185.3	167.6	75.3	133.8	410.9	132.9
13	69.7	107.0	100.0	103.5	70.8	80.2	204.3	210.6	214.9	241.0	148.6	91.5	109.1	37.9	36.5	54.1	114.0	111.9	75.3	69.6	90.9	63.3	59.0	61.2	241.0	105.2
14	52.4	79.5	81.6	76.7	26.6	25.9	37.9	34.4	6.9	22.4	7.6	10.4	137.3	67.4	61.2	42.5	22.4	30.2	37.9	59.8	44.9	81.6	43.5	23.1	137.3	46.4
15	25.2	13.9	9.7	5.5	9.0	8.3	20.8	11.1	15.3	11.8	30.1	49.2	37.2	55.5	68.7	50.6	110.5	137.3	71.0	166.9	184.6	142.8	450.4	340.4	450.4	84.4
16	317.8	212.1	140.8	97.1	47.8	47.8	44.2	38.6	40.0	42.1	62.6	81.6	68.2	59.0	49.2	64.0	61.2	20.7	95.0	35.8	23.8	21.0	25.2	16.7	317.8	71.3
17	9.0	35.8	13.9	14.5	9.2	10.4	11.1	13.2	14.6	24.5	21.0	21.0	45.6	51.3	39.3	60.5	52.7	68.9	52.0	45.0	39.8	19.6	18.7	16.9	68.9	29.5
18	9.6	19.6	9.7	17.4	25.9	21.1	19.6	19.6	23.8	11.8	16.7	18.1	22.4	21.0	34.4	18.7	28.0	33.7	18.2	9.7	28.7	33.7	28.0	16.0	34.4	21.1
19	16.0	9.0	44.3	28.7	21.0	14.5	15.3	31.6	24.5	21.0	59.1	56.9	75.3	61.2	29.4	12.5	12.0	9.7	6.9	6.9	17.7	13.3	28.9	19.6	75.3	26.5
20	14.4	13.3	9.7	46.4	47.1	22.4	16.0	17.4	7.6	28.0	23.1	43.5	48.5	14.6	30.8	61.2	28.7	9.0	6.2	5.5	4.0	6.2	5.5	9.1	61.2	21.6
21	8.3	4.0	1.9	7.5	8.3	39.3	32.7	31.6	18.4	31.6	206.5	**C**	**C**	**C**	40.0	56.9	104.2	80.2	94.3	49.9	51.1	34.4	51.3	145.1	206.5	52.3
22	25.9	10.9	9.0	7.6	9.0	10.4	16.7	42.1	42.1	120.4	104.9	119.0	136.6	133.1	44.9	34.4	13.2	16.0	6.2	17.4	9.0	28.7	97.8	40.0	136.6	45.6
23	200.8	83.0	40.7	198.2	376.4	315.8	492.9	435.6	308.0	440.6	504.7	260.0	93.6	224.7	406.6	418.4	415.8	286.8	306.6	495.1	178.2	290.3	255.8	172.6	504.7	300.1
24	242.4	44.9	68.9	108.4	139.4	25.2	28.7	49.4	54.6	174.7	159.2	142.2	42.8	59.5	51.3	121.1	105.6	294.5	176.8	251.6	149.3	224.1	97.1	167.6	294.5	124.1
25	115.5	277.5	186.0	274.9	190.9	165.5	76.0	71.0	9.7	57.6	45.6	4.0	32.2	48.5	26.3	32.2	40.7	34.4	110.4	99.2	33.0	78.1	19.6	8.3	277.5	84.9
26	9.0	7.6	6.2	4.7	9.0	6.7	5.5	4.0	4.7	6.9	24.5	25.2	52.7	90.8	229.0	243.1	110.5	169.7	190.9	157.0	121.0	204.3	331.3	504.7	504.7	105.0
27	427.8	286.1	228.3	264.3	301.6	181.0	58.3	68.9	75.3	76.7	31.5	17.4	16.7	17.4	18.8	204.3	158.3	90.8	44.9	38.6	25.2	24.5	8.3	16.0	427.8	111.7
28	12.5	9.0	13.9	9.0	5.5	8.3	6.2	6.2	7.6	13.2	12.0	37.9	28.7	51.2	22.4	22.4	18.8	23.1	43.9	54.6	37.2	11.1	7.6	5.4	54.6	19.5
Hourly Max	427.8	286.1	228.3	274.9	376.4	315.8	492.9	435.6	308.0	440.6	504.7	260.0	137.3	352.4	406.6	418.4	415.8	294.5	306.6	495.1	185.3	290.3	450.4	504.7		
Hourly Average	67.1	57.1	52.2	60.9	64.9	51.1	53.0	51.3	42.7	61.7	69.5	55.5	52.9	74.2	68.2	92.6	82.1	73.2	72.2	84.2	52.6	62.7	74.6	75.1		

C = CALIBRATION

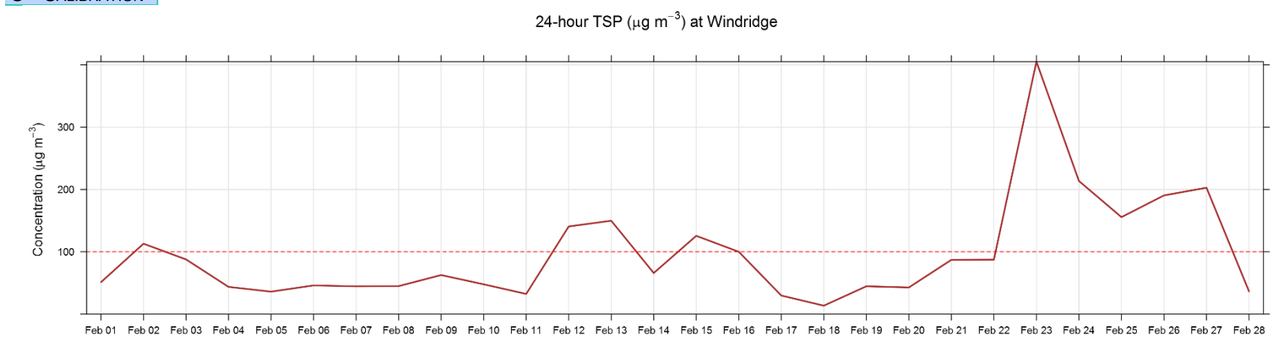


Number of 1HR Exceedances	n/a		Objective	n/a	UG/M3
Number of Non-Zero Readings	666				
Maximum 1-HR Average	504.7	UG/M3			
Maximum 24-HR Average	300.1	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	6	HRS	Operational Uptime	100.0	%
Standard Deviation	84.2		Monthly Average	64.7	UG/M3

Windridge TSP (µg/m^3) – February 2018

Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	45.7	53.4	35.1	33.7	21.0	16.0	6.2	9.7	11.8	42.1	44.9	62.6	40.0	67.5	57.6	123.9	95.0	97.8	95.0	64.0	47.1	58.5	41.4	57.6	123.9	51.1
2	47.1	58.4	58.3	42.1	35.1	26.6	61.9	75.3	52.0	58.5	C	C	C	123.2	123.9	125.3	384.1	138.0	272.0	131.7	58.3	79.5	216.3	203.3	384.1	112.9
3	41.4	78.8	156.4	229.7	253.7	171.2	80.6	89.4	60.5	72.5	116.9	123.2	102.8	104.2	98.5	67.5	68.2	89.4	23.1	16.0	13.9	12.5	12.5	21.0	253.7	87.7
4	22.4	24.5	26.7	23.8	9.0	13.2	8.3	6.9	13.9	69.6	52.7	52.7	23.1	141.5	88.6	272.7	38.6	32.1	33.0	33.7	18.9	11.1	23.1	5.5	272.7	43.6
5	12.4	10.4	38.7	27.3	25.9	21.7	16.0	17.4	17.4	13.9	16.7	25.9	49.2	114.8	66.1	104.2	151.4	44.2	31.6	17.4	11.1	6.9	11.1	9.7	151.4	35.9
6	6.9	7.0	7.6	9.7	19.6	29.4	53.1	45.0	40.7	20.3	61.2	49.9	11.1	7.6	12.3	11.1	21.0	42.8	11.8	23.8	73.9	57.2	322.8	156.3	322.8	45.9
7	114.7	91.5	111.9	49.2	28.0	9.7	18.9	6.9	8.9	75.7	16.7	15.3	12.5	18.1	9.7	10.4	31.5	31.5	86.5	83.7	52.7	67.5	62.6	52.0	114.7	44.4
8	25.2	49.9	72.5	83.7	80.2	95.7	99.3	72.5	47.1	52.0	47.2	35.8	18.9	17.4	28.7	97.8	16.7	38.5	13.9	11.3	17.4	16.7	11.8	24.5	99.3	44.8
9	20.3	18.2	109.1	27.3	28.0	30.1	43.5	14.6	16.0	40.0	22.5	26.6	80.8	198.0	131.0	243.1	208.5	26.6	6.2	42.8	28.7	71.1	30.1	37.9	243.1	62.5
10	50.6	26.6	33.0	38.7	26.6	39.3	12.5	11.1	12.3	10.4	18.9	19.6	42.8	127.4	47.8	107.0	150.0	178.2	48.5	85.8	13.2	19.6	14.6	10.4	178.2	47.7
11	11.8	23.8	15.3	46.4	68.8	138.7	75.3	45.7	25.2	71.7	43.5	20.3	11.1	25.9	16.7	10.4	20.3	22.4	15.3	21.0	9.0	10.4	13.9	10.4	138.7	32.2
12	28.7	53.4	81.6	102.1	97.1	102.1	83.7	66.8	88.7	72.5	69.6	84.4	88.4	372.1	269.9	330.5	248.7	177.0	192.3	213.5	206.4	167.6	81.6	95.0	372.1	140.6
13	55.5	85.1	123.2	162.0	99.9	127.4	255.8	262.8	281.9	317.8	207.8	150.7	158.7	68.9	61.2	82.3	162.0	181.7	110.5	127.4	169.7	107.0	113.3	122.5	317.8	149.8
14	86.5	100.6	130.3	122.5	51.3	37.9	76.0	54.1	13.6	44.2	17.4	16.7	171.9	105.6	107.7	32.2	28.0	28.7	48.5	94.3	48.5	95.0	42.1	25.9	171.9	65.8
15	30.1	16.0	10.4	9.7	16.7	8.3	27.3	13.2	10.4	24.5	40.0	33.0	49.9	85.1	121.1	68.9	221.9	252.9	137.3	290.3	367.2	240.3	504.0	434.2	504.0	125.5
16	339.0	280.5	194.4	138.0	77.4	77.4	80.2	62.6	70.3	77.1	99.2	121.1	108.4	73.8	65.4	90.8	121.1	37.9	150.2	49.9	23.8	23.1	25.2	11.8	339.0	99.9
17	7.6	25.9	10.4	6.8	9.7	12.2	25.9	35.8	22.4	35.1	29.4	29.4	47.1	52.0	41.4	73.9	35.1	76.7	33.0	27.3	25.9	18.9	17.6	12.5	76.7	29.7
18	8.3	11.8	9.0	9.0	32.3	10.4	15.3	11.1	8.3	5.5	9.0	6.9	12.5	11.8	21.0	7.6	6.2	15.3	8.3	9.6	22.4	15.4	28.0	26.6	32.3	13.4
19	25.9	3.3	52.7	32.3	18.2	11.1	38.6	84.4	42.1	23.1	96.3	76.7	199.4	143.0	30.7	20.3	40.0	11.1	7.3	10.4	18.9	21.7	37.1	23.8	199.4	44.5
20	22.4	16.0	20.3	102.8	119.7	49.9	26.6	27.3	12.5	62.6	45.0	79.5	109.8	25.9	79.5	114.7	50.6	19.6	7.6	4.3	4.0	2.6	8.3	11.8	119.7	42.6
21	10.4	6.2	3.0	8.3	10.4	59.8	52.0	49.2	30.9	45.7	291.1	C	C	C	76.7	84.5	183.1	123.2	183.8	108.3	84.4	55.5	99.2	261.5	291.1	87.0
22	47.1	23.0	19.6	9.0	9.7	24.1	21.7	67.5	59.8	203.2	159.9	240.3	277.6	305.1	97.8	68.2	30.1	31.5	20.3	32.3	9.0	70.3	191.6	76.7	305.1	87.3
23	405.4	136.6	70.3	307.9	504.1	493.5	504.1	504.1	504.1	504.1	504.0	446.2	126.0	424.3	503.9	504.0	503.9	423.6	441.2	504.0	267.8	422.2	431.9	290.1	504.1	405.3
24	393.3	83.7	111.7	168.4	188.8	43.5	46.4	78.8	103.5	284.7	252.3	245.9	74.6	97.2	87.2	231.1	193.0	503.9	319.2	411.7	254.4	384.1	178.9	389.8	503.9	213.6
25	258.6	479.3	317.8	442.0	283.3	341.1	133.1	144.4	13.2	136.6	76.7	15.3	61.9	95.7	37.2	56.9	85.1	54.3	248.7	207.8	47.8	149.3	37.2	10.4	479.3	155.6
26	7.6	9.7	7.6	9.0	8.3	9.7	10.2	11.8	12.5	16.7	33.0	40.7	104.2	212.9	473.6	466.6	231.8	336.8	451.8	386.2	305.2	416.3	504.1	504.0	504.1	190.4
27	504.0	390.5	465.2	504.0	504.0	345.3	118.3	192.3	186.0	165.5	67.5	35.1	30.7	30.1	47.1	407.4	328.4	212.7	105.6	76.0	52.7	47.8	12.2	39.3	504.0	202.8
28	23.1	15.3	32.3	16.0	9.0	11.1	11.1	14.6	17.4	30.1	22.4	73.1	58.3	114.0	35.8	35.8	31.5	43.5	71.0	100.6	78.1	11.8	10.4	6.2	114.0	36.4
Hourly Max	504.0	479.3	465.2	504.0	504.1	493.5	504.1	504.1	504.1	504.1	504.0	446.2	277.6	424.3	503.9	504.0	503.9	503.9	451.8	504.0	367.2	422.2	504.1	504.0		
Hourly Average	94.7	77.8	83.0	98.6	94.1	84.2	71.5	74.1	63.7	92.0	91.2	81.8	79.7	117.2	101.4	137.5	131.6	116.9	113.3	113.7	83.2	95.0	110.1	104.7		

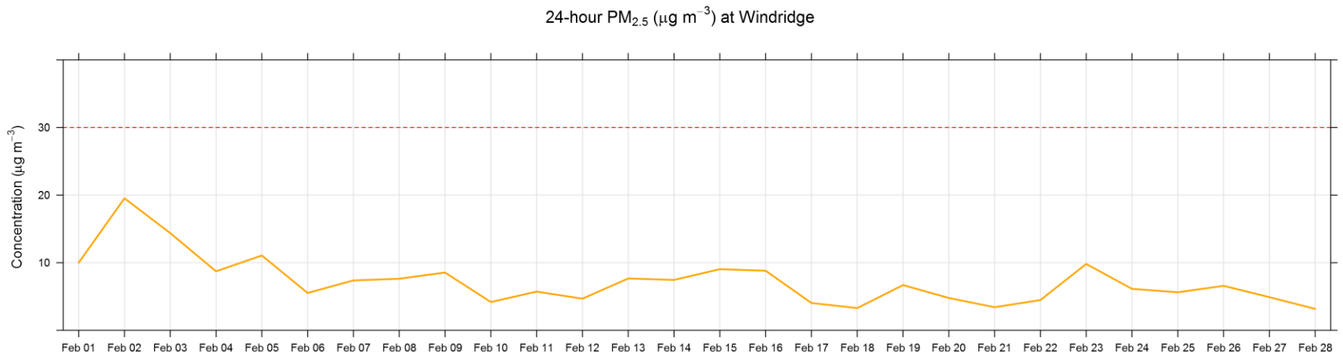
C = CALIBRATION



Number of 24HR Exceedances	9		Objective	100	UG/M3
Number of Non-Zero Readings	666				
Maximum 1-HR Average	504.1	UG/M3			
Maximum 24-HR Average	405.3	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	6	HRS	Operational Uptime	100.0	%
Standard Deviation	119.4		Monthly Average	96.4	UG/M3

West $PM_{2.5}$ (µg/m^3) – February 2018

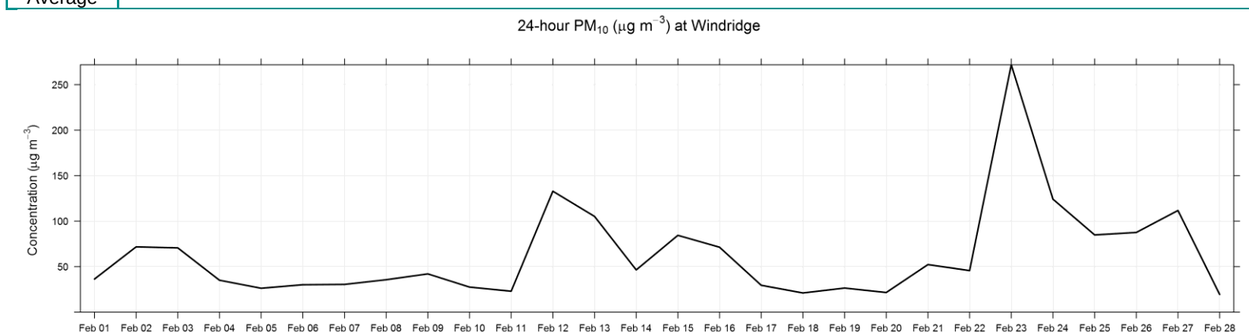
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	15.6	15.5	14.4	10.2	7.5	6.5	4.5	3.5	4.3	7.4	9.4	10.5	10.3	18.0	41.2	9.2	7.4	3.9	23.6	25.3	27.2	28.1	29.9	31.4	41.2	15.2
2	35.7	32.6	30.4	27.2	20.1	18.1	18.1	19.6	18.8	19.3	25.3	36.8	46.0	48.5	33.1	1.6	0.5	0.2	2.4	26.2	13.6	0.3	0.3	19.8	48.5	20.6
3	33.7	32.9	27.2	23.1	16.9	15.0	12.5	10.3	10.9	9.7	8.0	5.8	7.2	6.6	6.8	8.8	12.0	10.9	12.6	8.6	6.5	6.4	8.0	8.8	33.7	12.9
4	7.8	7.0	6.4	6.4	6.0	5.6	5.2	4.6	5.2	6.1	6.0	6.2	5.8	5.2	4.7	6.9	7.4	4.3	1.8	0.9	0.7	0.8	0.9	0.9	7.8	4.7
5	0.8	2.2	20.6	23.0	18.9	16.6	14.2	13.5	17.1	17.0	13.8	15.3	20.3	10.8	8.6	7.8	7.2	6.2	6.1	5.7	5.1	4.6	3.8	3.4	23.0	10.9
6	3.9	3.6	3.4	3.7	3.3	4.8	4.2	5.0	4.4	5.8	7.9	10.1	12.0	12.2	17.1	18.6	16.1	8.9	9.3	7.2	6.1	3.6	1.6	1.3	18.6	7.3
7	1.0	1.0	0.7	0.7	0.8	2.2	5.5	4.5	6.7	7.5	6.0	4.7	4.5	5.4	5.0	6.7	8.8	11.1	9.9	8.8	10.0	10.9	10.1	8.7	11.1	5.9
8	8.5	7.9	7.3	7.3	6.3	6.0	3.9	3.3	4.0	2.6	1.5	1.6	2.7	2.3	3.4	2.7	2.8	4.0	7.1	4.3	3.9	5.4	7.5	9.2	9.2	4.8
9	11.6	9.0	7.5	6.9	6.5	6.1	5.7	5.1	7.3	6.8	5.6	4.5	4.2	4.9	4.8	5.2	5.0	3.1	3.1	3.8	3.5	3.7	2.9	2.7	11.6	5.4
10	2.0	1.5	1.4	1.2	1.1	1.1	1.0	1.4	1.6	2.0	2.5	3.5	5.8	4.0	3.9	3.4	3.4	2.4	2.0	3.0	2.9	3.9	5.3	6.1	6.1	2.8
11	3.2	4.0	5.6	5.8	3.1	2.4	2.8	4.3	3.8	3.0	3.5	6.1	7.8	5.5	5.4	3.9	4.7	2.9	2.7	3.4	2.9	4.0	4.7	6.3	7.8	4.2
12	5.5	3.7	2.9	2.4	2.2	2.2	2.0	2.2	3.2	3.4	4.0	3.0	3.4	2.9	2.8	3.3	4.9	2.8	1.7	1.5	1.6	1.5	1.4	1.3	5.5	2.7
13	1.2	1.2	1.1	1.1	1.1	1.3	1.5	1.2	1.2	1.8	2.0	1.5	1.9	1.5	1.4	1.1	0.9	1.4	0.9	0.8	1.0	1.1	1.2	1.1	2.0	1.3
14	0.9	1.1	1.1	1.3	1.5	1.5	1.5	1.5	1.8	2.0	5.7	7.9	2.6	2.7	2.1	1.0	0.6	1.2	2.1	1.5	2.1	1.9	1.3	1.5	7.9	2.0
15	2.3	1.2	1.1	0.8	1.2	1.6	2.5	2.8	2.8	3.3	2.3	2.8	3.6	2.5	1.6	1.1	2.2	1.8	1.5	1.1	1.4	2.9	2.9	1.6	3.6	2.0
16	2.7	0.7	0.8	0.5	0.5	0.6	1.0	1.4	1.2	2.4	13.6	8.2	7.0	7.0	8.7	4.5	2.8	9.0	6.1	2.3	1.4	1.4	1.2	0.7	13.6	3.6
17	0.8	1.0	0.8	0.8	1.4	3.3	3.1	2.9	5.3	3.5	2.9	4.4	6.0	3.3	3.8	1.8	2.5	3.4	1.2	1.4	2.1	1.5	0.7	0.6	6.0	2.4
18	0.7	1.6	1.4	2.4	1.1	0.9	0.8	0.8	0.7	0.8	0.9	2.3	2.7	5.1	2.2	2.0	0.9	0.7	0.7	0.9	2.3	0.8	0.7	0.7	5.1	1.4
19	0.8	2.8	3.3	1.7	1.6	1.6	1.9	2.4	3.5	3.8	2.8	2.5	4.3	3.3	4.9	3.8	3.0	2.7	2.5	3.3	3.7	5.9	4.8	3.5	5.9	3.1
20	2.3	2.3	1.8	2.0	2.0	2.0	2.1	2.5	3.4	5.2	4.6	3.3	2.8	4.4	5.9	6.6	7.6	0.9	0.7	1.6	2.0	1.4	1.2	1.2	7.6	2.9
21	1.7	1.8	1.5	1.2	1.3	1.2	1.3	1.5	2.2	3.6	5.6	7.7	4.7	5.7	3.9	4.6	4.0	2.3	1.3	0.9	1.4	1.5	1.4	1.3	7.7	2.7
22	1.5	1.6	3.5	1.5	1.7	1.4	2.3	4.9	8.9	11.8	12.6	10.4	16.8	19.1	6.1	8.6	10.9	9.5	1.1	1.4	2.6	3.0	3.3	1.7	19.1	6.1
23	1.7	1.4	1.5	1.9	1.2	1.5	1.7	2.1	4.4	3.7	9.2	10.5	4.9	3.0	2.8	3.3	3.6	3.0	1.7	1.4	1.6	1.8	3.2	1.2	10.5	3.0
24	1.0	1.0	0.8	1.5	1.3	1.7	1.5	2.4	3.3	5.0	5.2	9.2	4.5	3.7	2.6	4.4	2.1	1.0	0.7	0.5	0.5	0.8	0.6	0.4	9.2	2.3
25	1.3	0.6	0.5	0.3	0.3	0.6	0.8	1.1	1.1	1.3	1.5	6.0	10.0	7.4	3.7	3.5	2.6	1.7	0.7	0.3	0.6	1.0	0.9	1.0	10.0	2.0
26	0.8	0.8	0.6	0.6	0.7	0.7	4.0	2.8	6.0	11.3	17.4	12.5	33.8	4.1	4.5	3.4	3.8	7.1	0.9	1.0	1.4	1.1	0.8	1.0	33.8	5.0
27	0.7	1.0	1.9	1.2	0.9	1.1	3.2	3.3	5.3	10.1	7.7	5.8	4.7	7.7	8.6	3.6	2.9	2.6	3.0	0.4	0.6	1.3	0.8	1.1	10.1	3.3
28	0.6	0.6	1.2	0.9	4.8	1.3	2.4	2.6	2.8	7.2	9.5	6.6	3.9	4.3	3.3	5.6	5.2	3.9	2.2	1.0	0.6	0.9	1.2	0.8	9.5	3.1
Hourly Max	35.7	32.9	30.4	27.2	20.1	18.1	18.1	19.6	18.8	19.3	25.3	36.8	46.0	48.5	41.2	18.6	16.1	11.1	23.6	26.2	27.2	28.1	29.9	31.4		
Hourly Average	5.4	5.1	5.4	4.9	4.1	3.9	4.0	4.0	5.0	6.0	7.0	7.5	8.7	7.5	7.2	4.9	4.9	4.0	3.9	4.2	3.9	3.6	3.7	4.3		



Number of 1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Guideline	30	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	48.5	UG/M3			
Maximum 24-HR Average	20.6	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	6.4		Monthly Average	5.1	UG/M3

West PM_{10} (µg/m^3) – February 2018

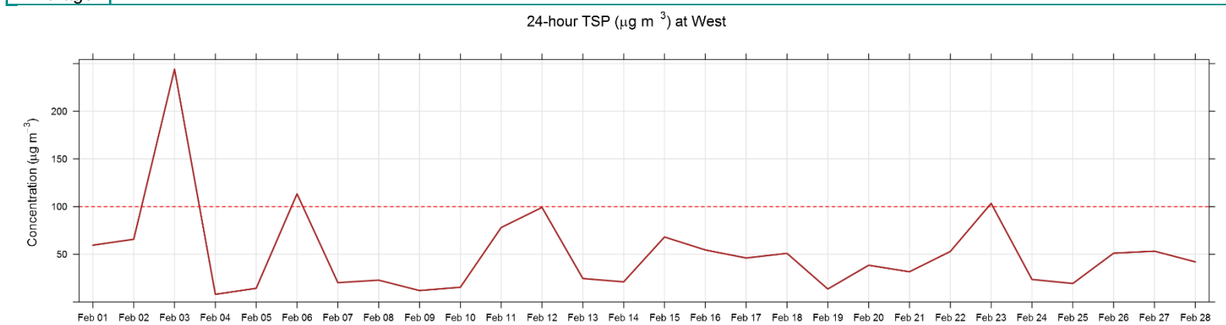
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	22.2	21.7	19.2	12.6	8.9	7.8	5.4	4.5	6.2	11.0	36.4	38.3	49.1	91.1	195.1	46.2	37.8	17.1	92.4	76.4	55.1	42.2	44.9	47.0	195.1	41.2
2	53.5	48.8	45.6	40.8	30.0	26.7	26.6	29.3	28.2	29.0	38.0	92.5	188.5	209.0	114.5	2.2	1.7	0.5	8.6	54.4	20.3	1.2	1.5	41.6	209.0	47.2
3	55.9	49.2	78.7	42.8	24.4	32.9	30.2	14.6	17.1	42.9	31.0	20.3	24.1	21.7	27.2	46.9	36.2	15.9	18.8	12.7	9.1	8.8	10.5	10.5	78.7	28.4
4	8.9	7.8	6.9	7.0	6.5	6.1	5.6	4.9	6.0	7.4	7.2	8.1	8.3	7.1	7.1	24.6	24.4	6.3	2.6	1.1	0.9	0.9	0.9	1.0	24.6	7.0
5	0.8	2.8	21.2	23.4	19.5	17.2	15.6	19.4	25.6	25.4	35.8	31.5	26.0	15.7	10.8	11.7	9.4	7.2	6.7	6.1	5.3	4.9	4.0	3.4	35.8	14.6
6	4.0	3.7	3.4	3.8	3.4	5.0	4.4	5.3	4.5	24.5	70.3	95.1	108.2	109.0	137.3	148.1	124.4	51.9	54.4	32.0	11.2	5.3	2.6	2.4	148.1	42.3
7	1.8	1.9	1.0	0.9	1.5	4.1	8.2	6.5	9.9	11.2	8.8	17.9	17.0	20.6	21.3	20.1	20.4	16.7	14.8	12.8	14.4	15.4	14.6	11.8	21.3	11.4
8	11.9	10.5	9.6	9.8	8.4	7.9	4.4	3.4	4.3	3.1	1.6	2.2	6.7	5.0	18.1	9.3	7.8	16.8	15.0	6.0	5.3	7.9	10.8	13.5	18.1	8.3
9	17.0	13.4	11.2	9.9	8.5	7.6	6.9	6.0	10.8	10.8	10.6	6.7	6.6	13.8	13.8	13.5	18.2	6.3	5.8	5.1	4.3	4.2	3.1	3.0	18.2	9.0
10	2.1	1.6	1.5	1.3	1.2	1.2	1.1	1.7	2.0	5.9	5.8	11.6	20.3	15.3	14.5	12.7	12.7	9.1	4.6	7.4	6.9	12.2	15.6	9.5	20.3	7.4
11	3.8	5.4	8.3	8.5	4.4	3.1	3.8	6.3	5.5	5.1	21.1	52.4	61.9	42.8	36.0	21.5	28.3	6.9	4.2	4.9	3.8	5.3	6.0	7.9	61.9	14.9
12	6.6	4.2	3.3	2.7	2.8	3.9	4.8	6.1	13.9	23.9	22.3	17.0	20.4	14.4	13.2	17.3	24.0	10.9	4.0	3.3	4.8	3.9	3.0	2.8	24.0	9.7
13	2.4	2.5	2.8	3.6	2.7	3.8	5.4	3.1	3.5	6.6	7.5	6.0	8.4	8.9	6.7	6.1	3.6	7.3	3.3	2.1	2.9	3.1	2.3	1.6	8.9	4.4
14	1.1	1.8	1.4	1.4	2.0	1.8	1.9	2.0	3.1	6.0	40.6	42.7	3.7	3.8	3.1	1.4	0.8	2.0	3.0	2.8	3.0	2.6	1.7	2.0	42.7	5.7
15	3.2	1.5	1.3	0.9	1.6	2.0	3.3	3.2	3.2	5.2	4.0	7.4	9.3	10.8	9.7	5.3	12.3	9.0	8.0	4.3	6.5	20.2	18.5	12.0	20.2	6.8
16	23.1	1.9	3.7	0.9	0.7	1.3	3.8	6.2	4.3	8.8	32.2	26.7	27.5	34.8	46.8	21.1	13.2	56.0	10.2	3.0	1.7	1.5	1.3	0.8	56.0	13.8
17	0.8	1.2	0.9	0.9	1.7	4.8	4.5	4.2	7.9	5.1	4.2	6.4	8.9	5.3	10.1	5.5	10.9	18.7	1.6	3.2	5.2	2.4	0.8	0.6	18.7	4.8
18	0.8	2.2	1.8	3.3	1.3	1.1	1.0	1.0	0.8	1.3	2.4	8.4	12.1	21.4	10.1	8.4	1.5	0.9	1.0	1.7	8.4	1.2	0.8	0.7	21.4	3.9
19	0.9	3.5	3.8	1.9	1.6	1.7	2.2	2.9	4.8	7.6	5.4	5.3	7.2	6.0	8.2	8.2	15.1	12.6	7.6	5.4	5.0	8.4	6.4	4.3	15.1	5.7
20	2.7	2.6	2.0	2.6	2.3	2.4	2.7	3.5	6.4	28.7	25.4	15.3	11.6	19.4	26.0	29.2	37.0	2.0	1.0	3.5	2.7	1.7	1.3	1.3	37.0	9.7
21	1.9	2.3	2.1	1.4	2.1	2.8	3.1	4.1	7.5	14.7	27.0	31.7	20.6	24.4	16.6	20.7	16.3	9.5	4.2	2.0	3.4	3.2	2.5	1.8	31.7	9.4
22	2.0	2.3	5.9	2.4	2.3	1.8	3.1	8.7	45.8	60.4	61.8	48.8	57.7	58.0	26.5	44.5	57.8	47.7	2.4	3.2	6.2	7.6	11.6	3.4	61.8	23.8
23	2.6	2.2	2.8	5.1	2.9	4.9	6.5	12.1	21.0	19.0	56.7	57.3	34.5	14.1	11.7	15.7	16.9	14.3	5.3	3.6	5.1	8.1	19.0	5.1	57.3	14.4
24	2.4	2.6	1.4	4.5	3.6	4.6	4.1	8.7	15.1	19.5	18.2	34.5	20.1	13.2	9.6	19.7	9.4	2.3	1.5	1.0	0.6	1.9	1.8	0.7	34.5	8.4
25	3.8	2.5	1.0	0.4	0.6	1.4	2.5	3.6	3.4	4.3	5.8	29.0	41.4	31.0	16.9	17.5	10.9	7.0	1.8	0.6	0.9	2.7	1.2	1.8	41.4	8.0
26	1.1	1.4	0.7	0.7	1.3	0.9	6.0	4.1	18.2	49.8	60.2	42.8	216.8	18.2	18.6	13.7	17.7	35.1	3.1	2.9	6.7	5.9	2.8	4.2	216.8	22.2
27	3.1	3.9	10.5	6.0	2.9	2.9	11.9	13.1	24.7	28.5	32.8	40.8	20.2	41.1	45.1	16.2	12.4	12.9	13.6	0.6	1.5	4.0	1.8	4.6	45.1	14.8
28	1.3	0.8	3.8	2.2	28.8	3.8	9.9	10.8	13.7	45.1	48.1	34.9	19.0	23.4	18.0	26.5	26.0	17.5	10.9	2.2	0.8	1.5	2.2	1.1	48.1	14.7
Hourly Max	55.9	49.2	78.7	42.8	30.0	32.9	30.2	29.3	45.8	60.4	70.3	95.1	216.8	209.0	195.1	148.1	124.4	56.0	92.4	76.4	55.1	42.2	44.9	47.0		
Hourly Average	8.6	7.4	9.1	7.2	6.4	5.9	6.7	7.1	11.3	18.2	25.8	29.7	37.7	32.1	31.9	22.6	21.7	15.0	11.1	9.4	7.2	6.7	6.9	7.2		



Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	216.8	UG/M3			
Maximum 24-HR Average	47.2	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	23.5		Monthly Average	14.7	UG/M3

West TSP (µg/m^3) – February 2018

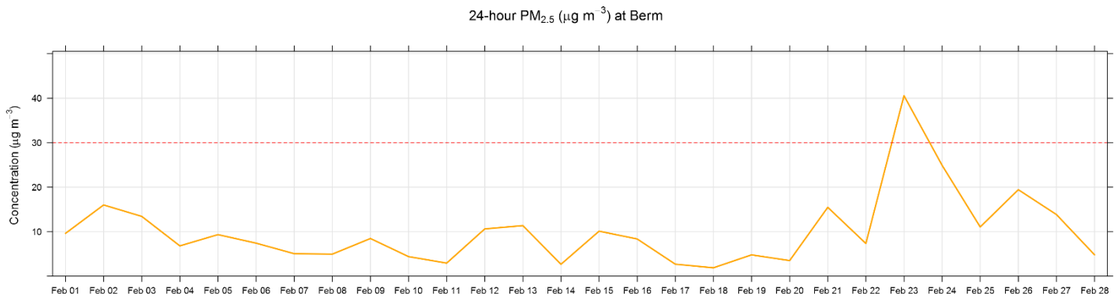
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	15.7	14.8	12.8	8.4	5.8	5.3	3.6	3.7	5.8	11.5	70.9	85.1	109.7	176.1	266.6	109.5	73.7	20.9	155.4	87.2	53.8	42.3	44.3	45.8	266.6	59.5
2	55.0	48.0	42.7	40.5	25.6	20.8	27.7	31.9	29.1	29.5	40.3	183.3	338.6	310.7	147.6	1.7	7.4	5.0	9.8	68.4	19.5	5.4	12.4	76.0	338.6	65.7
3	71.0	53.5	504.3	170.8	25.4	249.8	344.4	15.0	37.2	705.7	545.2	548.9	692.6	316.7	363.4	608.3	525.9	16.3	21.6	12.5	7.3	6.6	7.5	7.0	705.7	244.0
4	5.9	5.2	4.5	4.6	4.3	4.0	3.7	3.2	4.2	5.1	4.9	7.1	14.8	13.3	13.8	32.4	48.0	6.6	2.5	0.8	0.6	0.6	0.6	0.7	48.0	8.0
5	0.5	2.0	13.8	15.7	12.8	11.2	10.7	18.0	24.5	25.1	57.4	43.1	26.9	24.2	10.0	14.0	8.8	4.8	4.4	4.0	3.5	3.3	2.6	2.2	57.4	14.3
6	2.6	2.4	2.2	2.5	2.2	3.3	2.8	3.4	2.9	105.2	338.9	372.5	314.7	313.0	358.7	298.5	306.1	104.9	84.0	31.3	46.0	9.4	5.1	7.4	372.5	113.3
7	4.6	4.6	2.1	0.7	1.8	3.7	8.0	5.8	10.4	12.0	8.8	40.2	50.4	59.7	75.8	62.6	47.6	17.5	14.6	10.8	11.5	11.7	12.1	8.7	75.8	20.2
8	9.4	7.7	6.9	7.4	6.6	6.3	2.9	2.2	2.8	2.1	1.1	12.4	83.7	44.4	146.1	53.8	13.1	60.6	41.4	5.3	4.6	7.9	8.5	11.2	146.1	22.9
9	14.1	11.7	9.7	7.5	6.0	5.1	4.6	4.2	9.9	13.0	14.9	14.1	18.8	31.3	31.2	31.5	35.5	5.3	4.5	3.8	3.0	2.8	2.1	2.0	35.5	11.9
10	1.4	1.1	1.0	0.9	0.8	0.8	0.7	1.4	1.6	15.9	16.7	38.3	43.5	42.6	49.6	39.2	29.7	13.8	9.5	11.8	7.7	12.6	22.3	7.2	49.6	15.4
11	2.5	4.5	8.7	8.8	4.2	2.3	3.3	6.3	5.2	7.3	85.5	227.8	468.0	462.6	194.5	145.3	196.8	13.8	3.5	4.6	3.0	3.8	4.2	5.9	468.0	78.0
12	5.3	2.8	2.3	2.1	2.3	40.8	67.2	118.9	385.9	465.4	371.1	262.7	277.8	114.1	50.3	74.2	58.3	28.7	7.0	6.2	11.1	10.1	7.1	6.6	465.4	99.1
13	6.1	9.3	10.7	18.9	11.6	17.8	79.2	15.1	16.9	45.9	81.9	43.3	46.5	37.5	33.1	34.3	22.1	19.9	7.6	5.3	10.5	10.8	4.0	1.2	81.9	24.6
14	0.8	3.0	1.8	2.0	4.2	3.2	2.5	1.7	9.0	24.3	96.3	302.8	3.6	3.3	3.3	1.2	0.6	11.7	3.0	14.3	8.1	2.2	1.3	1.6	302.8	21.1
15	2.9	1.2	1.0	0.7	1.2	1.6	2.6	2.2	2.1	25.3	40.4	41.0	36.4	45.7	65.5	42.5	116.4	58.4	88.1	54.8	69.8	409.2	317.9	207.4	409.2	68.1
16	301.4	18.9	47.4	5.2	0.7	8.8	9.0	29.3	16.1	22.9	53.8	52.6	69.8	82.4	119.1	54.1	54.3	346.2	10.1	2.4	1.2	1.0	0.9	0.5	346.2	54.5
17	0.6	0.8	0.6	0.7	1.3	4.7	4.6	4.0	8.7	5.0	4.2	7.0	9.8	17.9	139.9	88.9	242.7	458.7	1.3	34.5	54.1	15.2	0.6	0.4	458.7	46.1
18	0.5	2.1	1.6	3.0	0.9	0.8	0.7	0.7	0.6	6.8	28.8	126.5	149.5	460.0	111.3	157.0	6.4	0.6	0.7	11.0	144.6	8.0	0.5	0.5	460.0	51.0
19	0.6	2.5	2.6	1.3	1.1	1.1	1.5	2.1	4.1	52.3	25.3	28.7	27.1	16.4	17.2	14.6	35.5	57.2	11.6	4.8	3.9	7.0	4.5	3.1	57.2	13.6
20	1.8	1.7	1.3	6.8	1.5	1.6	2.1	3.2	10.5	66.9	183.7	175.9	61.9	88.0	81.9	124.9	94.4	3.7	0.7	4.5	2.4	1.2	0.9	0.9	183.7	38.4
21	1.9	1.6	2.3	2.2	4.5	10.1	6.8	16.2	33.0	56.4	86.6	88.0	91.6	99.0	71.8	80.7	49.4	27.9	12.9	2.8	5.0	5.4	2.0	1.3	99.0	31.6
22	1.3	8.8	7.6	1.6	1.8	1.3	2.7	10.7	105.7	145.4	141.1	120.0	99.9	116.3	59.2	120.4	147.5	104.3	2.0	7.0	9.1	8.5	40.2	7.7	147.5	52.9
23	6.7	3.3	7.6	19.8	6.9	35.6	56.4	139.4	280.8	142.8	277.4	254.3	207.5	139.3	97.3	185.9	119.7	107.9	15.2	20.9	19.8	90.4	194.8	50.9	280.8	103.4
24	11.6	15.9	4.3	13.5	8.9	14.9	8.4	21.7	42.2	46.6	38.3	57.3	57.0	44.7	35.6	45.0	52.4	12.2	2.7	0.9	0.8	13.8	15.8	2.1	57.3	23.6
25	25.2	22.3	4.1	0.3	0.7	8.7	3.8	4.3	5.6	16.4	30.8	47.4	52.8	46.4	29.4	116.7	21.7	14.6	3.0	1.8	0.7	5.2	0.8	1.9	116.7	19.4
26	0.7	4.9	0.5	0.4	2.8	0.7	6.5	4.2	74.5	111.3	150.0	82.1	307.0	55.4	62.8	45.9	65.9	110.6	8.4	11.3	27.2	45.5	13.6	35.1	307.0	51.1
27	23.1	31.3	133.5	64.9	18.9	6.2	38.6	37.9	74.9	89.1	83.6	121.6	59.2	116.6	166.5	59.5	41.2	45.9	27.3	0.6	2.7	8.8	4.4	22.1	166.5	53.3
28	1.8	1.2	10.8	3.0	85.5	9.3	29.2	30.5	46.7	120.2	130.8	96.4	64.3	73.3	67.8	88.3	65.9	44.4	30.9	4.2	0.5	1.0	1.5	0.8	130.8	42.0
Hourly Max	301.4	53.5	504.3	170.8	85.5	249.8	344.4	139.4	385.9	705.7	545.2	548.9	692.6	462.6	363.4	608.3	525.9	458.7	155.4	87.2	144.6	409.2	317.9	207.4		
Hourly Average	20.5	10.3	30.3	14.8	8.9	17.1	26.2	19.2	44.7	84.8	107.4	124.3	135.1	119.7	102.5	97.5	88.8	61.5	20.9	15.3	19.0	26.8	26.2	18.5		



Number of 24HR Exceedances	3		Guideline	100	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	705.7	UG/M3			
Maximum 24-HR Average	244.0	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	97.0		Monthly Average	51.7	UG/M3

Berm $PM_{2.5}$ (µg/m^3) – February 2018

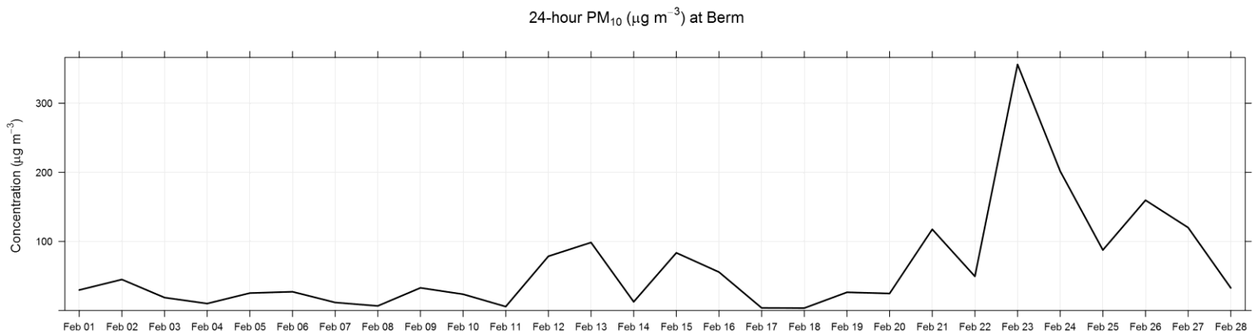
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	14.2	15.8	11.1	6.3	4.4	3.6	2.6	1.8	4.6	6.9	5.8	6.6	7.2	6.5	14.1	19.7	8.6	9.1	9.7	11.7	13.5	14.8	15.9	16.1	19.7	9.6
2	16.0	14.9	13.7	11.6	10.9	12.3	10.5	11.6	13.2	12.8	14.6	14.6	16.7	19.6	22.3	29.8	19.3	18.9	19.7	15.6	15.1	13.4	21.0	15.9	29.8	16.0
3	19.1	22.1	29.0	29.2	21.0	14.9	15.6	9.4	10.1	12.9	16.5	16.1	17.1	10.3	10.5	14.4	12.4	7.1	4.1	4.6	6.5	4.6	6.3	8.4	29.2	13.4
4	6.8	6.3	6.2	5.4	4.8	4.7	4.5	4.9	5.8	7.2	7.4	5.6	16.5	13.2	31.1	8.1	4.3	4.3	5.0	2.8	2.4	2.9	1.5	1.3	31.1	6.8
5	2.0	6.2	17.2	15.4	12.1	10.3	8.3	8.7	8.9	8.7	7.9	17.3	22.5	14.2	17.7	15.0	5.8	4.9	4.6	4.0	3.6	3.3	3.0	2.3	22.5	9.3
6	1.9	1.6	2.5	6.2	5.3	33.2	31.6	6.6	4.6	4.7	8.4	2.3	2.9	3.1	2.8	3.6	1.8	3.5	4.6	5.9	5.8	20.1	9.5	5.4	33.2	7.4
7	4.1	4.9	1.9	1.0	0.8	1.9	2.1	2.6	3.8	4.3	3.4	2.3	3.2	2.8	3.2	6.5	7.1	10.9	12.0	7.7	9.3	9.8	8.2	6.8	12.0	5.0
8	7.7	10.1	9.2	7.4	8.3	7.4	6.5	5.4	6.3	5.4	5.1	2.4	2.2	1.9	4.1	2.4	3.8	3.1	4.1	3.3	2.1	2.8	3.4	3.8	10.1	4.9
9	3.1	4.4	5.2	5.0	5.2	6.6	4.3	5.1	4.5	5.9	6.2	12.4	35.5	26.1	35.0	14.5	2.3	1.1	2.7	3.5	3.2	2.6	3.9	4.5	35.5	8.4
10	3.5	4.9	2.9	3.7	2.5	1.5	1.6	2.5	1.9	2.5	2.6	3.6	9.2	4.3	7.0	10.6	12.8	4.2	9.3	2.7	4.7	2.9	1.7	2.0	12.8	4.4
11	2.6	2.2	3.4	9.5	12.2	1.6	1.2	1.0	1.2	1.0	1.1	1.6	2.4	3.7	1.6	2.0	2.5	2.6	3.0	2.3	2.4	1.2	2.8	4.8	12.2	2.9
12	6.8	6.8	6.6	9.4	9.6	7.6	4.6	7.7	6.5	4.6	5.4	5.5	26.9	16.0	26.2	17.3	14.3	13.5	15.3	14.7	11.8	6.4	7.0	4.3	26.9	10.6
13	7.9	10.0	11.3	6.0	8.0	18.4	19.0	19.8	25.0	13.9	12.6	11.4	7.0	4.2	6.9	14.2	18.8	10.0	10.0	11.8	7.5	7.1	6.5	5.2	25.0	11.3
14	5.8	6.5	5.8	2.9	2.2	3.4	3.9	1.4	3.2	2.0	2.7	8.7	0.6	0.4	0.5	0.5	0.4	1.1	2.6	0.9	1.1	1.1	2.7	3.3	8.7	2.7
15	2.2	0.7	0.8	0.9	0.4	0.5	1.1	2.2	2.5	4.1	4.3	3.9	6.0	7.3	10.0	15.7	19.2	8.6	24.7	17.7	16.3	39.8	30.3	23.3	39.8	10.1
16	24.0	15.2	14.4	8.1	4.8	5.0	3.9	4.3	6.3	6.4	13.1	13.1	12.4	11.1	17.5	15.2	2.2	13.1	1.4	1.3	1.8	1.9	2.2	1.5	24.0	8.3
17	3.9	1.0	1.2	1.2	2.2	2.9	5.5	3.7	6.3	2.8	5.5	4.3	1.1	1.6	2.0	1.1	1.9	3.6	3.3	2.4	2.0	1.5	2.0	1.1	6.3	2.7
18	2.3	1.7	1.1	2.5	1.5	2.0	2.7	1.4	1.3	1.1	0.9	1.5	1.7	2.6	1.0	2.0	3.0	2.2	1.3	2.6	3.6	3.1	1.2	0.7	3.6	1.9
19	0.7	7.0	5.2	2.4	2.0	2.7	3.3	3.9	3.4	7.5	5.8	10.3	14.3	8.2	9.1	5.1	1.5	0.8	0.8	1.1	4.5	6.1	4.6	4.3	14.3	4.8
20	2.2	2.2	5.2	5.7	3.0	1.7	2.0	1.9	2.7	4.4	6.0	6.8	3.6	6.8	11.6	8.3	4.4	1.0	0.4	0.4	0.7	0.6	0.9	1.3	11.6	3.5
21	1.6	1.4	1.3	1.3	2.7	3.0	2.6	2.0	2.1	16.0	36.4	37.4	28.0	24.7	25.2	29.4	25.9	14.7	13.3	12.5	17.4	44.7	24.0	3.4	44.7	15.5
22	2.3	2.0	1.5	1.0	1.8	1.8	4.4	5.6	14.8	10.0	11.9	19.6	14.3	16.7	7.0	3.9	11.9	10.9	1.6	0.8	1.7	5.1	2.8	22.5	22.5	7.3
23	5.6	4.5	19.2	41.9	34.1	62.3	51.7	31.2	66.0	86.4	42.1	28.4	47.3	38.0	46.7	54.0	41.3	38.6	39.6	21.4	38.3	52.0	31.1	52.0	86.4	40.6
24	29.5	21.9	22.1	20.0	17.3	21.4	14.0	13.0	24.7	19.9	26.4	20.9	20.3	12.6	35.7	28.7	53.1	30.6	34.0	21.1	33.1	25.6	27.2	24.6	53.1	24.9
25	30.7	21.4	27.5	14.9	21.7	10.7	12.7	1.6	9.9	7.2	1.6	5.1	8.3	6.2	8.5	9.5	9.0	26.0	18.6	4.2	6.6	1.6	1.0	0.9	30.7	11.0
26	0.6	0.6	0.5	0.4	0.4	0.6	37.3	0.8	1.3	4.2	6.4	10.7	21.8	43.8	46.4	43.7	38.0	32.3	25.8	14.8	21.5	28.3	51.9	34.1	51.9	19.4
27	26.5	19.6	30.2	35.1	23.0	15.5	7.0	10.3	15.7	11.7	7.4	7.5	9.3	10.0	33.5	33.2	15.6	6.0	4.4	3.0	1.8	0.8	3.9	1.4	35.1	13.8
28	0.9	1.9	1.0	0.7	0.6	0.6	0.6	1.0	1.4	1.9	5.4	11.0	11.9	14.7	8.9	13.9	12.3	8.8	9.6	5.5	0.5	0.6	0.4	0.6	14.7	4.8
Hourly Max	30.7	22.1	30.2	41.9	34.1	62.3	51.7	31.2	66.0	86.4	42.1	37.4	47.3	43.8	46.7	54.0	53.1	38.6	39.6	21.4	38.3	52.0	51.9	52.0		
Hourly Average	8.4	7.8	9.2	9.1	8.0	9.2	9.5	6.1	9.2	9.9	9.8	10.4	13.2	11.8	15.9	15.1	12.6	10.4	10.2	7.1	8.5	10.9	9.9	9.1		



Number of 1HR Exceedances	1		Guideline	80	UG/M3
Number of 24HR Exceedances	1		Guideline	30	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	86.4	UG/M3			
Maximum 24-HR Average	40.6	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	11.2		Monthly Average	10.1	UG/M3

Berm PM_{10} (µg/m^3) – February 2018

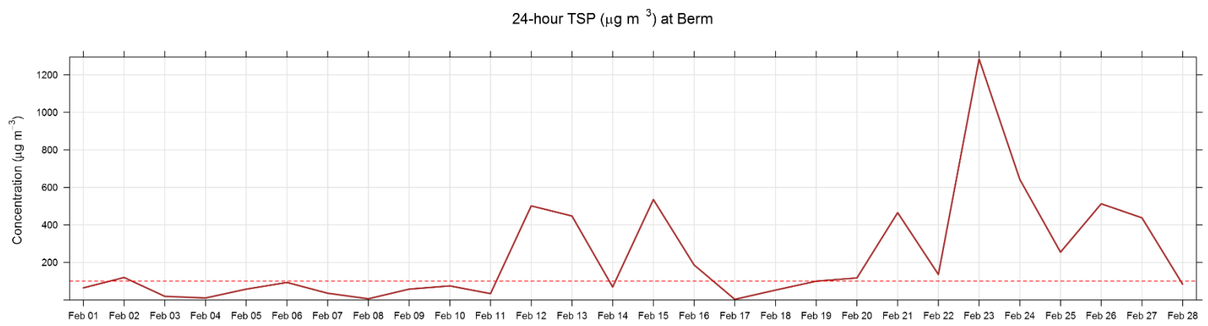
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	19.7	23.0	15.3	7.9	5.0	4.0	2.9	2.1	6.7	10.0	21.4	34.2	50.8	52.1	109.0	138.6	58.4	33.3	17.4	18.0	19.2	20.5	21.3	21.0	138.6	29.7
2	20.9	19.1	16.8	13.8	13.8	17.2	14.5	16.6	19.1	18.2	20.7	20.8	42.0	58.3	66.7	67.4	53.5	147.5	84.7	19.9	26.2	121.7	157.2	20.3	157.2	44.9
3	25.9	30.8	42.2	42.8	30.5	20.8	22.2	12.3	13.5	18.3	23.9	23.2	24.9	14.8	15.1	20.7	17.0	8.8	4.4	4.6	6.9	5.5	8.0	11.3	42.8	18.7
4	8.3	8.0	8.3	6.6	5.7	5.2	5.1	6.1	7.7	10.4	10.7	8.0	38.7	19.8	46.7	12.1	6.0	5.9	7.1	3.6	3.2	3.9	1.9	1.7	46.7	10.0
5	2.7	8.2	18.3	15.7	12.3	10.6	8.9	9.1	9.0	9.3	11.4	68.8	81.8	74.9	119.6	105.2	11.0	5.2	5.0	4.2	3.9	3.6	3.2	2.5	119.6	25.2
6	2.2	1.8	3.3	9.1	7.6	49.7	47.0	8.6	5.4	11.6	41.4	4.2	10.4	9.2	8.6	14.3	5.5	14.1	17.8	27.0	24.6	200.6	79.5	47.4	200.6	27.1
7	35.5	42.9	13.8	5.4	2.3	3.7	2.3	3.0	5.1	5.6	4.2	3.8	6.4	7.0	7.9	29.1	15.0	15.1	16.7	10.1	12.5	12.6	10.4	7.8	42.9	11.6
8	9.9	14.1	12.7	9.9	11.6	10.2	8.9	7.5	8.9	7.7	7.3	3.1	2.7	2.4	5.9	3.1	5.6	3.7	4.6	4.2	2.4	3.0	4.4	4.5	14.1	6.6
9	3.3	6.1	7.3	6.7	6.5	9.1	5.5	6.1	5.7	11.4	19.0	54.8	170.5	130.7	213.8	93.9	6.8	1.4	3.7	4.5	4.4	3.2	5.6	6.4	213.8	32.8
10	4.9	7.1	4.1	5.3	3.5	2.0	2.1	9.7	3.1	10.6	11.3	16.5	73.3	28.4	53.5	94.9	105.6	28.3	66.1	8.0	14.7	6.5	2.8	2.6	105.6	23.5
11	6.3	3.4	9.0	40.9	17.9	1.8	1.4	1.2	1.3	1.1	1.4	2.1	6.3	8.8	2.3	3.0	4.8	3.8	3.6	2.4	2.5	1.3	3.2	6.2	40.9	5.7
12	9.6	9.8	9.6	13.9	14.1	11.2	6.6	11.4	21.3	40.2	60.0	45.1	261.1	149.4	249.8	165.1	145.5	129.6	134.4	135.6	109.1	58.2	65.3	28.9	261.1	78.5
13	61.2	85.2	91.0	52.8	62.9	146.1	154.3	179.2	235.8	142.0	108.5	92.3	44.6	28.5	53.2	115.6	159.5	88.1	109.6	110.6	71.3	65.9	62.1	42.0	235.8	98.4
14	38.9	42.5	44.4	18.3	10.1	18.8	16.5	3.3	21.7	3.4	5.8	57.2	0.8	0.6	0.6	0.6	0.5	1.3	3.6	1.1	1.3	1.3	3.7	4.8	57.2	12.5
15	3.1	0.8	0.9	1.0	0.5	0.6	1.4	2.7	3.3	12.4	15.6	17.5	50.4	52.5	73.7	152.8	177.4	71.4	226.5	164.0	145.1	377.0	259.8	193.5	377.0	83.5
16	211.6	125.9	111.2	53.6	31.1	33.2	23.2	24.3	41.8	44.3	67.2	81.0	77.5	62.8	120.5	105.4	13.9	93.4	1.7	1.5	2.1	2.4	2.9	1.8	211.6	55.6
17	5.6	1.3	1.6	1.5	2.9	4.0	7.9	5.3	9.1	3.9	7.9	6.2	1.3	1.9	2.7	1.3	2.6	5.2	4.7	3.4	2.8	2.0	2.8	1.6	9.1	3.7
18	3.3	2.3	1.4	3.6	2.1	2.8	3.9	1.9	1.7	1.5	1.2	2.1	4.1	9.3	2.1	5.4	8.9	4.4	2.2	7.4	5.1	4.5	1.5	0.8	9.3	3.5
19	0.9	11.0	7.4	3.2	2.5	3.7	4.6	5.6	7.1	49.8	35.7	103.5	146.1	54.0	87.1	58.1	3.5	0.9	0.9	1.9	8.3	13.5	7.4	15.2	146.1	26.3
20	6.2	9.7	42.2	56.5	24.0	4.9	6.8	4.4	13.9	26.3	57.1	67.8	13.6	53.0	94.1	73.1	29.0	1.9	0.5	0.4	1.3	0.7	1.4	2.4	94.1	24.6
21	2.9	3.0	4.3	4.6	20.1	24.6	17.2	10.3	11.3	181.7	330.2	294.4	212.5	181.2	192.2	249.1	204.8	107.6	88.2	76.1	105.7	321.2	159.6	17.5	330.2	117.5
22	8.7	6.5	4.1	1.8	7.0	5.2	27.2	27.3	99.9	63.2	101.6	143.8	91.4	91.6	47.1	28.7	91.1	89.5	5.6	2.1	6.4	35.0	14.4	185.0	185.0	49.4
23	39.5	30.5	143.1	332.1	270.9	520.4	449.9	292.8	591.7	834.9	405.1	263.3	412.7	341.2	421.7	478.5	373.8	356.2	349.3	187.5	322.7	469.5	248.1	414.0	834.9	356.2
24	254.0	182.4	181.4	168.7	137.3	171.0	114.3	94.9	193.2	165.3	214.8	157.0	160.4	91.6	275.4	234.5	448.3	258.6	285.5	188.0	274.0	191.2	212.0	185.6	448.3	201.7
25	251.9	188.1	256.8	126.4	165.2	77.7	101.5	8.2	76.1	55.2	5.2	39.6	64.2	37.5	52.5	77.3	69.6	217.5	142.6	22.6	52.7	7.7	2.4	2.1	256.8	87.5
26	1.0	1.2	0.8	0.9	0.8	1.0	254.2	3.3	3.4	17.6	24.9	71.5	176.2	368.7	361.6	361.3	303.7	252.7	212.0	128.8	187.8	261.2	487.4	348.3	487.4	159.6
27	248.3	185.4	288.4	310.2	217.0	149.2	54.1	88.4	121.5	83.5	45.3	60.3	77.9	85.9	295.5	283.7	126.5	50.2	39.6	21.8	10.6	2.0	25.7	8.4	310.2	120.0
28	4.6	10.6	4.2	1.5	1.5	1.6	1.4	2.9	6.0	7.6	36.7	81.6	92.6	122.8	68.5	94.9	75.2	60.0	66.8	36.5	1.2	1.6	0.6	1.4	122.8	32.6
Hourly Max	254.0	188.1	288.4	332.1	270.9	520.4	449.9	292.8	591.7	834.9	405.1	294.4	412.7	368.7	421.7	478.5	448.3	356.2	349.3	188.0	322.7	469.5	487.4	414.0		
Hourly Average	46.1	37.9	48.0	47.0	38.8	46.8	48.8	30.3	55.2	66.0	60.5	65.1	85.5	76.4	108.8	109.6	90.1	73.4	68.0	42.7	51.0	78.5	66.2	56.6		



Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	834.9	UG/M3			
Maximum 24-HR Average	356.2	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	100.1		Monthly Average	62.4	UG/M3

Berm TSP (µg/m^3) – February 2018

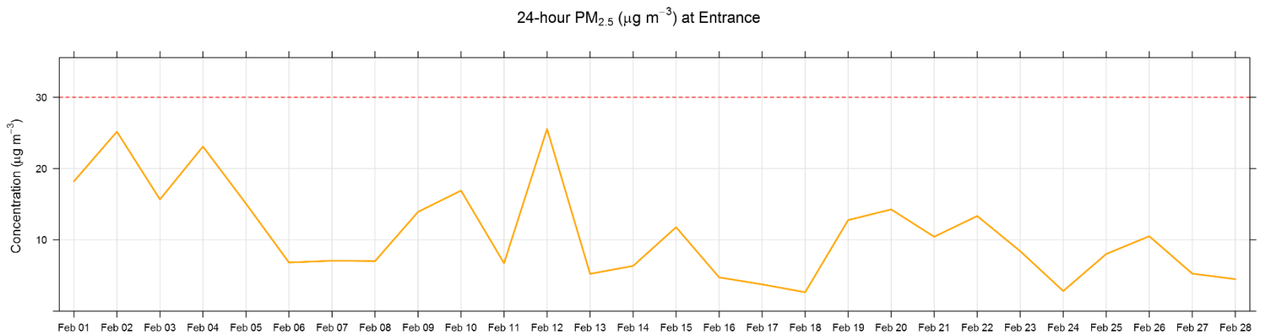
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	16.6	19.8	12.8	6.1	3.4	2.7	1.9	1.5	7.0	10.3	70.5	125.5	169.5	156.9	277.8	332.9	153.6	67.1	26.0	23.9	17.9	18.5	14.8	14.5	332.9	64.7
2	14.5	13.0	11.4	9.3	9.6	14.9	14.2	16.1	20.0	19.4	21.5	43.0	202.0	126.2	155.1	155.2	150.2	516.5	212.7	28.9	62.0	453.8	564.4	43.5	564.4	119.9
3	27.2	32.1	47.2	49.2	35.0	22.0	22.8	11.8	13.2	20.6	26.7	26.2	27.0	15.8	16.2	19.9	18.3	7.6	3.0	3.0	4.5	4.1	6.1	9.0	49.2	19.5
4	6.6	6.5	6.9	4.9	4.1	3.6	3.6	4.9	7.3	10.6	10.8	6.9	60.0	22.2	54.2	12.6	5.6	5.4	7.2	3.1	2.8	3.6	1.6	1.3	60.0	10.7
5	2.3	7.9	13.0	10.3	8.0	7.1	6.0	6.1	5.9	6.3	13.1	144.4	165.3	229.8	329.7	393.0	21.3	3.7	3.4	2.8	2.6	2.5	2.1	1.7	393.0	57.8
6	1.6	1.2	3.0	9.8	7.5	56.4	48.0	6.8	5.6	10.3	50.4	9.8	35.5	19.7	21.1	36.3	8.3	24.7	58.0	48.8	95.3	977.6	396.5	313.2	977.6	93.6
7	186.2	249.8	75.2	25.3	8.9	3.6	1.5	2.2	4.4	4.7	3.3	8.4	31.3	16.5	26.3	101.3	32.2	16.4	17.9	9.7	12.7	12.0	9.5	6.2	249.8	36.1
8	8.9	15.4	13.6	9.9	12.8	11.1	9.3	7.9	9.4	8.3	7.3	2.3	2.0	2.0	6.1	2.8	5.8	2.6	3.3	3.7	1.8	2.0	3.8	3.2	15.4	6.5
9	2.2	5.6	6.4	5.1	4.8	8.0	4.2	4.5	4.8	28.6	31.8	92.1	291.3	228.1	427.4	203.4	13.3	1.0	3.4	3.4	3.9	2.7	5.7	6.8	427.4	57.9
10	5.0	7.6	4.1	5.6	3.6	1.9	1.9	196.7	4.1	27.3	35.1	36.3	234.7	101.5	184.3	347.7	334.4	71.8	157.7	14.2	14.3	9.4	3.0	2.1	347.7	75.2
11	5.2	2.4	7.6	351.1	19.9	1.2	0.9	0.8	0.8	0.7	1.0	1.5	119.4	184.9	10.0	18.3	62.8	11.6	2.6	1.6	1.6	0.9	2.1	5.7	351.1	33.9
12	10.5	10.8	10.9	15.9	16.3	12.8	7.4	12.9	414.2	998.9	1423.0	472.1	1595.8	757.1	1499.5	822.1	626.7	608.3	590.2	748.4	610.5	259.3	360.9	150.7	1595.8	501.5
13	297.6	464.1	421.8	220.9	273.2	584.8	629.6	739.3	1174.8	839.2	528.0	431.2	213.3	135.2	192.0	486.2	713.8	384.1	508.5	479.9	308.2	287.6	258.8	171.3	1174.8	447.6
14	127.7	138.3	178.5	78.0	32.4	78.3	53.1	4.6	80.4	4.5	7.5	863.3	0.7	0.4	0.4	0.4	0.3	0.9	2.8	0.9	1.0	0.9	3.5	4.4	863.3	69.3
15	2.8	0.5	0.7	0.7	0.3	0.4	1.0	2.1	2.7	195.3	142.6	160.7	461.6	358.5	254.0	1086.5	939.9	404.1	1683.4	1437.8	1072.6	2643.6	1222.7	772.0	2643.6	535.3
16	853.4	438.5	347.6	127.5	94.4	97.2	64.0	57.1	116.2	142.4	185.5	210.5	215.3	113.8	269.4	222.0	33.8	876.3	5.9	1.1	1.6	1.9	2.6	1.3	876.3	186.6
17	5.1	1.0	1.2	1.1	2.2	3.5	8.1	5.0	9.3	3.3	8.1	6.3	0.9	1.4	2.2	0.9	2.4	5.6	5.0	3.3	2.5	1.6	2.3	1.3	9.3	3.5
18	3.1	1.9	1.2	3.7	1.9	2.7	3.9	1.8	1.5	1.2	0.9	2.0	85.2	301.7	44.3	186.9	335.7	86.8	13.2	176.3	5.2	4.2	1.1	0.6	335.7	52.8
19	1.5	33.6	7.4	2.8	2.2	3.6	4.7	5.8	26.7	158.5	160.5	449.9	667.6	195.0	339.7	251.6	11.3	0.6	0.6	2.2	8.9	13.3	10.8	45.9	667.6	100.2
20	41.1	133.6	183.9	350.6	107.8	60.8	51.3	26.5	49.5	141.3	430.6	456.3	36.2	193.3	263.6	216.2	68.8	3.6	0.3	0.2	0.8	0.5	1.2	1.8	456.3	117.5
21	5.6	17.5	51.9	45.8	198.7	249.7	219.3	99.3	111.7	1166.3	1942.2	1216.0	700.6	597.2	647.4	915.3	790.5	309.2	243.1	199.9	242.6	782.4	377.5	41.3	1942.2	465.5
22	33.2	39.4	18.8	6.0	18.3	10.9	76.1	66.7	320.1	170.4	325.5	370.6	288.5	234.1	106.6	66.2	196.9	230.2	10.4	3.7	20.7	83.8	39.6	534.4	534.4	136.3
23	116.5	113.4	400.5	1031.3	865.6	1695.2	1603.5	1288.8	2269.7	3099.2	1769.2	1049.8	1457.5	1265.1	1515.3	1725.0	1341.3	1302.8	1314.2	718.7	1023.0	1638.1	855.2	1358.3	3099.2	1284.1
24	902.6	634.3	541.2	514.3	434.6	553.6	386.5	320.9	581.8	513.2	728.4	486.8	447.0	260.8	880.7	704.5	1490.0	866.0	931.2	677.1	845.8	510.7	655.8	556.3	1490.0	642.7
25	823.6	662.7	938.3	451.8	405.7	141.6	201.8	16.0	234.1	162.5	33.5	102.3	184.1	95.3	112.1	226.5	163.1	591.8	334.9	39.4	169.5	19.2	3.5	4.3	938.3	254.9
26	0.7	2.4	0.6	2.8	0.8	1.8	343.1	8.7	4.6	31.9	51.7	201.2	489.5	1136.9	1051.9	1207.8	950.1	852.1	733.8	506.0	670.4	951.7	1823.5	1279.7	1823.5	512.7
27	949.9	724.6	1123.4	1131.7	836.7	586.1	196.8	347.4	421.7	230.3	109.9	185.7	233.7	272.2	1061.1	1031.7	480.1	186.6	166.6	65.2	29.5	3.3	102.1	35.7	1131.7	438.0
28	15.1	40.7	21.0	2.2	4.3	3.8	3.1	6.6	12.9	15.1	89.0	203.4	252.1	330.2	188.4	267.9	157.5	153.7	141.6	97.8	1.7	2.8	0.4	1.3	330.2	83.9
Hourly Max	949.9	724.6	1123.4	1131.7	865.6	1695.2	1603.5	1288.8	2269.7	3099.2	1942.2	1216.0	1595.8	1265.1	1515.3	1725.0	1490.0	1302.8	1683.4	1437.8	1072.6	2643.6	1823.5	1358.3		
Hourly Average	159.5	136.4	158.9	159.8	121.9	150.7	141.7	116.7	211.2	286.4	293.1	263.0	309.6	262.6	354.9	394.3	325.3	271.1	256.5	189.3	186.9	310.4	240.4	191.7		



Number of 24HR Exceedances	14		Guideline	100	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	3099.2	UG/M3			
Maximum 24-HR Average	1284.1	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	397.8		Monthly Average	228.9	UG/M3

Entrance $PM_{2.5}$ (µg/m^3) – February 2018

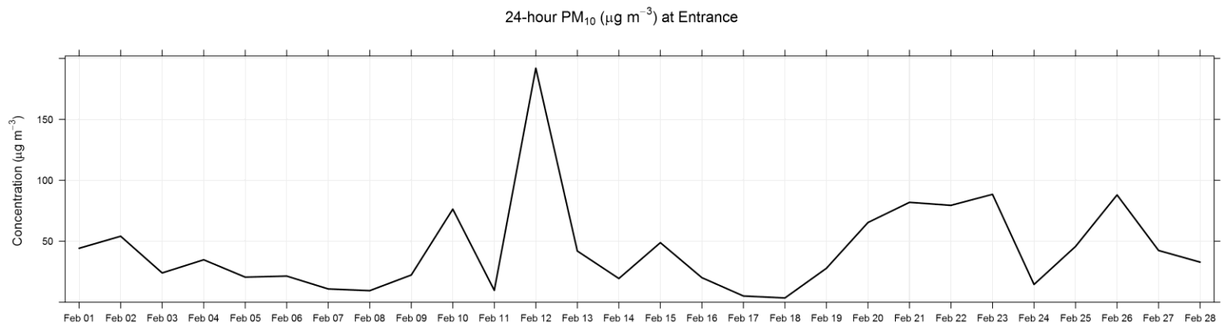
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	17.2	17.0	18.0	22.5	12.3	13.4	8.3	7.1	24.3	16.8	18.2	25.0	12.9	9.0	4.8	6.8	3.7	27.7	28.8	28.0	26.3	30.2	31.6	27.2	31.6	18.2
2	27.9	26.1	21.7	18.3	18.6	33.5	18.6	21.1	23.8	24.4	30.8	31.0	37.1	40.5	44.6	17.0	51.0	11.9	24.6	26.6	27.4	2.1	3.3	22.4	51.0	25.2
3	25.7	26.7	33.1	30.8	21.2	18.0	16.7	12.0	14.0	13.2	13.1	12.5	9.7	6.2	5.9	5.2	8.0	7.5	7.1	5.5	7.0	14.2	28.3	34.5	34.5	15.7
4	46.4	33.9	35.8	43.6	41.2	56.8	32.3	58.8	35.7	17.2	19.4	32.2	33.1	7.2	6.0	9.5	5.5	7.6	6.2	6.5	5.2	5.1	3.7	5.4	58.8	23.1
5	5.8	6.9	25.3	25.1	19.7	16.0	14.0	14.0	14.8	15.7	12.4	14.2	25.8	13.8	11.1	10.6	13.4	10.9	16.2	13.7	12.8	18.5	20.5	10.9	25.8	15.1
6	6.8	5.1	5.6	6.0	6.9	7.9	11.2	8.5	7.0	7.8	7.5	4.2	4.2	4.2	4.1	4.0	5.8	4.9	7.4	11.9	19.3	6.6	3.9	2.9	19.3	6.8
7	2.7	2.5	1.5	3.1	2.0	3.5	3.5	5.7	6.2	6.5	6.5	3.6	5.4	5.3	4.6	7.6	10.7	15.7	12.8	11.0	14.3	13.1	11.6	10.4	15.7	7.1
8	12.1	15.0	13.9	12.6	12.7	11.2	8.4	6.5	6.8	5.3	4.2	3.0	3.1	4.0	5.4	3.0	3.3	4.1	5.9	4.0	6.8	4.6	6.0	6.4	15.0	7.0
9	6.1	16.1	11.1	10.0	8.9	17.9	9.3	11.3	17.6	26.1	22.9	17.8	13.7	7.1	4.9	4.3	5.3	5.2	6.2	25.0	18.5	24.9	19.0	25.2	26.1	13.9
10	12.6	11.0	27.4	24.8	33.5	21.4	16.4	25.6	20.0	34.1	31.0	32.9	10.6	26.5	10.9	6.1	15.8	15.3	9.0	4.3	4.9	3.5	3.6	4.5	34.1	16.9
11	7.1	6.1	9.5	9.6	8.5	14.2	12.1	3.9	10.7	13.6	8.1	2.5	3.0	2.7	2.3	2.6	3.3	3.8	4.1	5.6	3.8	4.2	6.3	13.7	14.2	6.7
12	15.4	19.7	24.8	26.8	25.1	18.9	18.6	21.8	31.0	60.4	69.0	65.5	43.1	33.3	15.4	12.8	11.1	10.4	12.9	14.7	14.0	11.5	17.0	20.2	69.0	25.6
13	13.4	8.3	8.0	4.5	11.7	8.1	9.0	11.5	9.2	9.0	4.4	4.2	2.7	1.9	2.4	1.5	2.3	1.5	1.4	1.9	2.0	2.5	2.3	2.0	13.4	5.2
14	1.4	1.5	1.7	6.6	12.5	4.9	5.2	17.7	19.8	32.1	15.1	15.4	2.5	0.8	0.8	1.2	1.4	2.1	3.0	1.7	1.4	1.4	1.2	1.3	32.1	6.4
15	1.6	1.7	2.1	2.8	2.4	4.2	5.4	28.5	39.4	37.7	33.4	33.1	12.3	5.5	3.1	6.0	4.8	6.2	8.7	9.4	6.7	13.5	8.5	5.8	39.4	11.8
16	8.1	4.1	2.3	1.3	1.6	1.3	1.5	3.0	3.4	6.2	6.5	5.3	5.1	5.3	2.7	18.4	11.2	10.6	4.2	2.4	2.4	3.1	2.1	1.8	18.4	4.7
17	4.6	1.5	1.6	1.4	2.3	2.1	2.7	2.7	5.1	5.9	10.0	23.2	3.2	2.2	2.4	2.8	4.0	3.5	1.7	1.5	1.2	1.1	2.1	1.2	23.2	3.8
18	1.4	1.1	1.0	1.0	1.1	1.2	1.7	1.6	2.0	2.5	1.6	1.4	2.1	4.9	1.9	2.5	3.3	4.4	2.7	6.1	5.6	4.8	5.0	2.7	6.1	2.7
19	1.4	7.2	5.6	3.6	8.6	8.2	5.7	73.0	60.0	28.8	24.4	11.2	8.1	4.2	3.9	3.6	1.9	1.6	2.2	4.8	6.6	8.7	6.9	16.4	73.0	12.8
20	19.7	17.9	7.4	8.7	10.2	11.3	11.9	40.6	69.1	33.6	17.8	10.0	14.3	8.4	4.0	2.3	2.1	4.0	3.9	1.6	5.3	7.7	10.0	21.1	69.1	14.3
21	23.4	11.5	7.3	9.7	30.8	16.9	24.6	21.8	21.7	20.2	18.6	8.1	6.5	4.1	3.7	3.1	4.3	2.9	2.1	1.4	1.4	1.4	1.2	3.9	30.8	10.4
22	16.7	31.5	40.3	24.8	12.7	16.0	13.4	18.7	27.0	16.4	15.4	12.1	16.9	14.1	3.9	2.3	3.5	2.7	2.8	1.9	14.6	3.2	5.0	4.6	40.3	13.4
23	3.3	10.4	4.4	7.7	8.2	10.9	11.2	12.7	25.3	23.8	12.9	6.0	5.0	6.2	6.1	7.1	4.7	7.5	7.9	3.8	2.5	5.5	6.9	1.9	25.3	8.4
24	1.6	1.9	2.2	1.3	1.4	1.2	1.7	2.5	2.5	2.7	3.1	3.4	2.9	4.2	5.0	4.6	6.4	3.5	6.5	2.4	2.4	1.5	1.5	1.5	6.5	2.8
25	2.9	5.8	4.6	2.3	0.8	2.6	1.9	16.4	5.7	14.8	13.0	14.2	9.9	10.7	10.1	11.5	2.1	6.7	5.7	6.4	4.7	9.9	21.2	8.9	21.2	8.0
26	6.2	6.2	4.9	4.4	5.7	7.9	5.1	13.4	25.3	24.9	30.9	20.7	7.0	13.2	12.5	8.4	9.9	7.5	5.3	3.4	5.5	5.7	12.0	6.1	30.9	10.5
27	7.8	9.0	7.3	15.8	7.3	2.8	2.2	3.9	7.7	4.4	5.1	4.7	4.7	3.6	8.0	7.6	7.7	2.9	2.2	2.4	1.8	3.1	2.2	2.3	15.8	5.3
28	3.5	3.0	5.5	4.3	4.3	4.5	3.1	5.2	3.7	6.5	6.7	6.1	6.1	5.5	5.1	4.7	3.4	2.4	1.8	2.4	6.6	6.8	3.2	3.3	6.8	4.5
Hourly Max	46.4	33.9	40.3	43.6	41.2	56.8	32.3	73.0	69.1	60.4	69.0	65.5	43.1	40.5	44.6	18.4	51.0	27.7	28.8	28.0	27.4	30.2	31.6	34.5		
Hourly Average	10.8	11.0	11.9	11.9	11.9	12.0	9.8	16.8	19.2	18.2	16.5	15.1	11.1	9.1	7.0	6.3	7.5	7.0	7.3	7.5	8.2	7.8	8.8	9.6		



Number of1HR Exceedances	0		Guideline	80	UG/M3
Number of 24HR Exceedances	0		Guideline	30	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	73.0	UG/M3			
Maximum 24-HR Average	25.6	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	11.0		Monthly Average	10.9	UG/M3

Entrance PM_{10} (µg/m^3) – February 2018

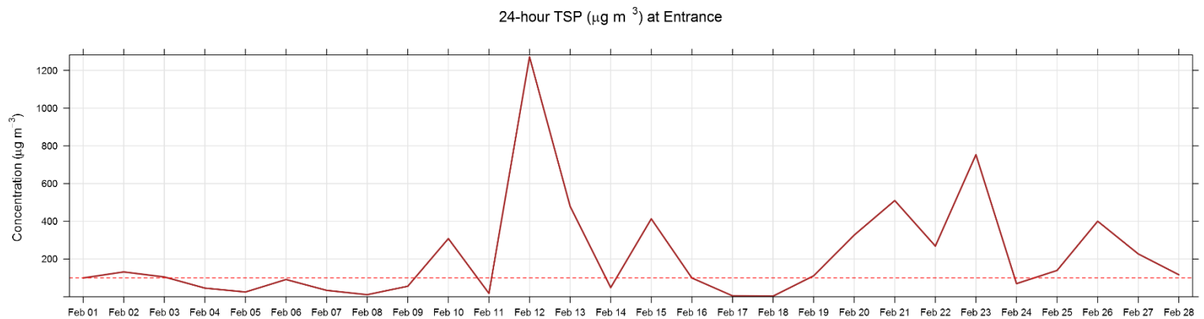
Day/Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	23.3	22.4	23.5	32.7	17.6	19.9	11.6	9.9	36.2	25.2	45.4	141.7	73.6	47.2	22.6	41.0	18.6	124.3	100.3	54.7	38.9	44.8	46.8	40.3	141.7	44.3
2	41.3	36.3	29.1	24.1	26.1	49.9	27.4	31.4	35.1	36.1	46.1	51.7	114.2	140.5	162.5	52.6	178.3	45.3	50.4	37.1	40.1	5.6	11.4	26.8	178.3	54.1
3	33.7	37.3	48.8	44.2	29.9	23.5	42.6	32.3	32.5	18.5	23.1	22.0	13.7	8.4	8.4	6.6	9.2	8.0	7.7	6.0	7.9	19.1	41.8	51.4	51.4	24.0
4	69.5	50.8	53.7	65.4	61.7	85.2	48.3	88.1	52.9	24.7	28.5	48.1	49.3	14.8	12.6	17.3	10.9	10.6	9.0	9.0	6.7	6.7	4.5	7.6	88.1	34.8
5	7.4	9.4	27.5	26.3	20.1	16.6	14.7	15.0	15.5	18.9	22.2	26.2	38.9	17.3	14.9	14.9	33.0	18.1	24.0	20.2	19.1	27.8	30.7	15.5	38.9	20.6
6	8.2	6.1	6.7	7.6	9.4	10.9	14.9	10.9	7.3	10.5	15.6	10.9	7.3	11.4	9.5	10.5	32.5	18.5	34.4	53.8	128.6	47.8	25.8	15.5	128.6	21.5
7	16.7	15.9	5.5	7.8	7.1	5.3	4.5	7.9	8.3	7.5	7.6	5.6	11.0	7.7	6.9	8.8	12.9	21.4	17.1	13.9	19.2	16.3	14.2	12.2	21.4	10.9
8	15.8	20.6	19.1	17.1	17.9	15.6	11.1	9.0	9.6	7.4	5.7	3.6	3.6	5.0	8.0	4.6	4.3	4.4	6.5	4.5	10.0	6.4	8.7	9.4	20.6	9.5
9	8.2	24.2	16.3	14.1	12.2	26.2	13.4	16.2	26.2	38.9	74.8	22.4	16.3	11.8	9.8	7.9	12.0	7.7	9.0	37.4	27.6	37.3	28.5	37.7	74.8	22.3
10	24.2	30.3	41.1	70.8	174.9	97.5	66.2	131.2	86.0	170.0	187.3	201.7	69.9	183.7	64.8	28.8	57.0	61.1	42.6	9.4	10.7	7.6	6.7	9.1	201.7	76.4
11	10.6	8.3	14.0	14.2	12.5	20.6	17.7	5.3	15.5	20.1	11.8	3.3	3.9	3.7	3.6	5.0	7.7	4.9	5.6	6.6	4.4	5.6	8.7	20.2	20.6	9.7
12	23.1	29.6	37.2	74.1	114.5	150.3	154.4	164.3	239.7	450.1	610.2	645.9	432.9	309.2	144.8	119.0	83.9	84.2	120.5	113.6	105.4	85.5	163.0	152.4	645.9	192.0
13	104.7	71.3	74.8	37.2	68.6	70.4	103.5	133.1	110.5	95.9	25.9	20.3	7.2	4.4	5.8	4.7	6.3	8.1	6.2	9.6	9.3	14.5	7.5	8.2	133.1	42.0
14	2.5	2.9	4.5	18.1	33.3	12.6	14.3	61.2	75.4	127.4	52.7	38.1	3.3	1.0	0.9	1.6	1.9	2.8	4.2	2.2	1.7	1.6	1.4	1.5	127.4	19.5
15	2.1	2.2	2.9	3.9	3.4	6.0	7.9	42.5	58.4	56.6	50.1	119.7	87.0	24.7	11.6	44.8	33.6	43.9	94.7	101.0	74.7	160.2	88.9	52.2	160.2	48.9
16	71.1	37.1	16.5	5.0	8.6	5.5	5.6	10.7	12.0	24.5	19.1	15.9	14.7	20.7	8.5	77.6	57.7	52.3	5.9	3.1	3.0	3.9	2.4	2.1	77.6	20.1
17	5.7	1.8	2.0	1.7	2.7	2.4	3.4	3.5	7.2	8.3	14.7	34.4	4.2	2.5	3.0	3.8	5.9	4.7	2.1	1.9	1.5	1.3	2.8	1.3	34.4	5.1
18	1.7	1.3	1.1	1.1	1.3	1.4	2.2	1.9	2.7	3.1	2.1	1.8	2.9	7.1	2.6	3.4	4.5	5.1	3.3	7.5	8.1	6.8	7.3	3.9	8.1	3.5
19	1.8	10.6	8.1	5.2	12.8	12.2	8.3	84.0	82.2	108.1	185.4	20.7	12.9	7.8	7.3	6.8	2.9	2.3	3.7	8.0	9.5	12.5	11.2	44.0	185.4	27.8
20	137.1	144.7	39.3	52.5	59.7	83.0	88.4	112.1	139.6	104.7	129.9	43.9	85.7	23.8	8.6	5.2	7.4	19.6	16.5	5.4	9.8	12.6	73.3	165.9	165.9	65.4
21	161.9	76.4	44.0	81.1	327.9	175.9	165.7	154.6	161.3	177.1	209.8	55.9	30.2	16.3	19.2	20.4	27.5	12.0	6.9	3.5	3.9	5.2	2.4	27.3	327.9	81.9
22	135.9	243.4	284.5	175.7	91.1	124.6	101.1	82.6	66.0	120.9	76.5	48.1	28.6	27.7	14.2	10.2	12.3	9.6	15.7	7.5	133.7	23.3	31.8	42.7	284.5	79.5
23	22.4	93.4	40.8	90.4	97.4	128.1	143.8	163.1	317.8	324.3	157.4	49.2	38.3	50.2	46.1	55.3	36.8	50.3	58.2	24.8	15.7	47.0	65.3	8.3	324.3	88.5
24	6.3	10.0	12.6	3.3	4.6	3.9	7.8	8.1	9.4	11.6	14.7	12.0	10.9	13.0	22.6	22.7	41.6	26.8	45.4	18.3	16.4	7.9	9.6	10.6	45.4	14.6
25	26.7	52.3	36.4	17.3	2.6	18.4	7.2	92.3	19.1	100.1	78.2	69.2	34.0	37.7	36.6	51.3	7.6	33.4	29.8	27.6	18.6	55.9	166.0	80.4	166.0	45.8
26	40.9	34.5	23.0	24.0	40.3	54.4	43.8	86.8	192.2	166.2	295.3	226.4	50.0	121.7	116.5	76.4	85.3	72.9	44.9	30.6	57.7	54.7	114.8	59.2	295.3	88.0
27	78.6	94.8	73.1	153.8	74.9	21.7	16.8	21.5	56.5	33.1	24.1	23.4	26.2	19.8	63.8	67.5	51.7	19.8	14.9	15.3	9.2	27.3	16.1	15.3	153.8	42.5
28	20.0	21.0	56.4	45.8	44.3	51.5	19.3	37.3	31.3	61.5	45.2	30.8	32.5	27.8	32.9	28.1	17.4	13.6	7.3	14.0	52.5	60.8	22.1	16.1	61.5	32.9
Hourly Max	161.9	243.4	284.5	175.7	327.9	175.9	165.7	164.3	317.8	450.1	610.2	645.9	432.9	309.2	162.5	119.0	178.3	124.3	120.5	113.6	133.7	160.2	166.0	165.9		
Hourly Average	39.3	42.5	37.2	39.8	49.2	46.2	41.6	57.7	68.1	84.0	87.8	71.2	46.5	41.7	31.0	28.4	30.7	28.1	28.1	23.1	30.1	28.8	36.2	33.5		



Number of 1HR Exceedances	n/a		Guideline	n/a	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	645.9	UG/M3			
Maximum 24-HR Average	192.0	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	64.2		Monthly Average	43.8	UG/M3

Entrance TSP (µg/m^3) – February 2018

Day/ Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Max	24-hour Average
1	15.6	14.8	16.1	28.5	14.4	19.1	9.1	7.9	38.7	27.1	97.8	418.7	245.8	153.2	64.9	122.9	47.5	410.7	328.4	157.9	34.8	40.1	40.8	33.9	418.7	99.5
2	35.7	26.9	20.6	17.1	20.3	52.3	29.6	31.9	38.4	40.3	51.3	147.4	622.5	327.3	449.3	218.3	565.0	114.0	140.9	32.7	34.9	33.5	59.6	45.2	622.5	131.5
3	33.3	40.2	56.4	51.1	33.9	24.4	723.2	581.9	457.0	20.9	224.0	126.0	14.7	6.8	7.0	4.7	6.1	5.2	5.1	4.0	5.2	13.9	32.9	40.0	723.2	104.9
4	55.3	45.3	50.0	64.7	66.4	95.3	53.6	100.1	59.4	25.0	29.1	53.5	53.4	43.8	76.7	22.9	157.0	9.8	8.4	7.5	5.3	6.0	3.4	6.8	157.0	45.8
5	6.1	8.4	20.0	17.6	13.5	11.0	10.2	10.4	10.3	13.9	74.5	51.5	48.7	30.0	20.3	22.8	65.2	20.3	26.0	20.4	19.6	30.5	33.7	15.7	74.5	25.0
6	5.8	4.8	4.8	5.6	7.0	9.1	10.0	7.6	4.7	7.1	15.8	30.3	22.4	33.9	27.8	26.5	97.8	46.3	83.5	121.1	664.4	465.2	268.7	220.1	664.4	91.3
7	200.1	210.6	61.4	45.3	14.0	10.2	3.2	6.2	7.5	5.6	6.0	12.6	51.4	15.6	23.1	12.7	10.9	23.2	17.7	13.8	20.0	15.6	13.3	10.3	210.6	33.8
8	15.7	22.8	21.0	18.4	20.1	17.7	11.5	9.8	10.4	7.9	5.8	2.8	2.8	4.3	13.0	26.5	3.8	3.1	4.6	3.4	10.1	5.8	9.3	9.5	26.5	10.8
9	6.4	27.9	15.8	13.2	10.0	27.4	13.3	16.6	29.7	44.5	709.8	47.2	21.6	29.2	71.2	23.7	17.9	8.2	8.9	41.7	29.7	42.8	32.8	43.8	709.8	55.6
10	100.3	152.0	47.8	355.5	1004.2	482.8	204.4	388.0	307.3	850.8	741.3	904.1	374.7	697.1	223.0	114.3	128.5	121.9	109.0	29.3	13.4	26.1	11.6	9.1	1004.2	308.2
11	11.9	7.3	14.5	15.3	13.7	23.5	20.0	5.3	17.6	22.4	13.1	2.7	3.6	15.3	25.3	53.8	103.0	12.7	4.3	4.5	3.1	5.1	6.9	22.1	103.0	17.8
12	26.8	34.4	43.3	488.9	1145.6	1854.2	2029.9	1958.1	2037.2	2844.0	3102.6	3023.7	2289.9	1668.9	957.6	908.0	554.2	620.9	1049.6	766.8	780.5	544.6	1037.2	752.8	3102.6	1271.7
13	688.5	662.6	885.0	469.0	391.5	788.3	1223.4	1857.9	1604.6	1663.0	414.1	234.5	41.4	22.5	30.9	29.2	36.3	55.4	52.9	79.7	59.6	104.7	57.7	51.3	1857.9	479.3
14	8.8	9.2	20.5	41.9	37.4	29.3	19.8	105.9	147.8	245.2	68.8	411.4	3.2	0.7	0.7	1.2	1.5	2.3	3.6	1.7	1.2	1.2	1.0	1.0	411.4	48.6
15	1.8	1.8	2.7	3.3	3.3	5.7	7.7	43.2	61.6	65.7	58.2	418.1	440.6	159.5	58.2	239.8	170.3	394.2	958.6	1430.2	1215.3	2347.5	1133.9	691.6	2347.5	413.0
16	736.1	395.5	131.9	32.6	53.5	22.5	20.2	50.0	34.5	84.5	48.1	48.0	46.4	38.2	17.3	122.8	92.0	393.9	6.2	2.6	2.4	3.0	1.6	1.4	736.1	99.4
17	4.9	1.2	1.4	1.2	1.9	1.7	2.9	3.0	7.0	8.4	16.5	39.6	4.1	1.6	2.2	2.9	5.8	3.7	1.6	1.4	1.0	0.9	2.1	0.9	39.6	4.9
18	1.2	0.9	0.7	0.8	0.9	1.0	1.6	1.4	2.2	2.3	1.8	1.4	2.5	7.8	2.4	2.8	3.9	3.7	2.4	5.8	8.3	6.6	7.9	4.0	8.3	3.1
19	1.5	11.9	8.9	5.3	14.4	13.3	8.6	141.4	92.5	812.6	1095.7	63.9	28.5	28.1	28.0	19.2	5.4	7.0	4.3	7.8	7.6	9.5	25.4	217.3	1095.7	110.8
20	820.5	1035.7	315.7	490.9	381.3	580.6	576.7	501.5	550.9	463.1	553.6	282.5	335.0	77.7	21.6	22.0	23.7	54.6	29.9	7.7	13.7	19.3	225.2	458.4	1035.7	326.7
21	500.0	288.7	192.7	464.1	2167.0	1260.8	1068.7	919.9	782.1	1083.2	1870.7	569.0	220.6	92.6	145.3	137.8	224.8	44.2	18.8	13.8	12.5	30.4	6.8	123.1	2167.0	509.9
22	528.0	768.7	879.4	658.1	384.5	539.0	366.6	239.6	210.4	399.1	199.7	143.1	48.6	50.4	28.9	40.3	34.7	17.7	49.5	20.3	418.4	99.1	138.8	180.6	879.4	268.5
23	108.9	363.9	199.1	504.2	701.8	1087.6	1235.3	1485.8	2853.4	3319.1	1974.8	602.0	361.8	322.3	297.4	498.3	292.5	310.7	330.7	144.4	90.2	348.0	589.2	52.8	3319.1	753.1
24	38.5	85.2	108.6	15.5	28.6	17.0	40.2	39.4	35.0	46.4	71.2	39.7	33.1	38.2	80.7	79.7	197.8	141.7	194.8	108.2	79.9	52.2	41.5	51.4	197.8	69.4
25	148.9	299.6	208.3	106.2	14.1	134.4	8.5	220.0	34.5	324.0	199.7	124.8	39.1	33.5	38.5	101.8	18.6	81.9	77.5	41.7	43.8	98.1	674.5	275.3	674.5	139.5
26	139.6	109.0	50.8	57.8	133.7	321.7	339.0	297.8	779.1	629.1	1293.6	989.4	181.6	472.6	443.5	375.1	464.0	404.3	257.4	166.2	311.9	329.9	662.4	396.8	1293.6	400.3
27	488.8	630.4	481.1	963.8	487.6	127.3	82.1	98.5	198.3	144.2	62.7	65.1	86.0	68.6	315.1	398.5	244.9	99.7	71.7	58.4	35.7	103.9	68.3	66.5	963.8	227.0
28	56.5	93.9	312.4	221.2	285.1	279.3	72.9	115.3	111.1	168.3	154.0	77.3	115.0	99.2	121.3	118.3	59.7	57.9	25.1	39.3	74.1	93.2	23.0	23.3	312.4	116.5
Hourly Max	820.5	1035.7	885.0	963.8	2167.0	1854.2	2029.9	1958.1	2853.4	3319.1	3102.6	3023.7	2289.9	1668.9	957.6	908.0	565.0	620.9	1049.6	1430.2	1215.3	2347.5	1133.9	752.8		
Hourly Average	170.9	191.2	149.0	184.2	266.1	279.9	292.6	330.2	375.8	477.4	469.8	318.9	205.0	162.1	128.2	133.8	129.7	123.9	138.3	119.0	142.7	174.2	186.1	135.9		



Number of 24HR Exceedances	15		Guideline	100	UG/M3
Number of Non-Zero Readings	672				
Maximum 1-HR Average	3319.1	UG/M3			
Maximum 24-HR Average	1271.7	UG/M3			
IZS Calibration Time	0	HRS	Operational Time	672	HRS
Monthly Calibration Time	0	HRS	Operational Uptime	100.0	%
Standard Deviation	434.6		Monthly Average	220.2	UG/M3

MetOne BAM $PM_{2.5}$ Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	February 1, 2018
START TIME (MST):	12:00	END TIME (MST):	12:34

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM2.5	Audit Device S/N	624
Serial Number	T19087	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-4.3	649	0.00	16.7	12:33
As Found Data	MEASURED (AF)	-3.5	649	0.30	17.00	12:34
	AF Difference (AF-I)	0.8	0	0.30	0.30	0:01
Adjusted Data	MEASURED (M)	-3.5	649	0.30	16.75	12:34
	Adj Difference (M-I)	0.8	0	0.30	0.05	0:01
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: Inspected and cleaned

Status of sampling tape: slightly under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

MetOne BAM PM_{10} Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	February 1, 2018
START TIME (MST):	12:30	END TIME (MST):	13:05

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM10	Audit Device S/N	624
Serial Number	A3315	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-3.7	649	0.00	16.7	13:01
As Found Data	MEASURED (AF)	-3.7	649	0.40	16.90	13:00
	AF Difference (AF-I)	0.5	0	0.40	0.20	0:01
Adjusted Data	MEASURED (M)	-3.7	649	0.40	16.68	13:01
	Adj Difference (M-I)	0.0	0	0.40	-0.02	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleanded

Status of sampling tape: just under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

MetOne BAM PM_{10} Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Lenin Flores
LOCATION:	Exshaw - Lagoon	DATE:	February 23, 2018
START TIME (MST):	9:00	END TIME (MST):	12:00

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM10	Audit Device S/N	624
Serial Number	A4643	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-15.5	644	0.00	16.7	11:30
As Found Data	MEASURED (AF)	-15.5	644	0.80	16.66	11:30
	AF Difference (AF-I)	0.5	0	0.80	-0.04	0:00
Adjusted Data	MEASURED (M)	-3.7	644	0.80	16.66	11:30
	Adj Difference (M-I)	11.8	0	0.80	-0.04	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleanded

Status of sampling tape: New tape installed

Nozzle Inspection / cleanliness: clean

COMMENTS:

Install calibration - temporary replacement BAM as prev one is having issues.

performed self-test and full calibration - all good

MetOne BAM TSP Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	February 1, 2018
START TIME (MST):	13:00	END TIME (MST):	13:25

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	624
Serial Number	A3589	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-3.0	649	0.00	16.7	13:21
As Found Data	MEASURED (AF)	-3.6	649	0.70	16.75	13:20
	AF Difference (AF-I)	-0.6	0	0.70	0.05	0:01
Adjusted Data	MEASURED (M)	-3.6	649	0.70	16.75	13:21
	Adj Difference (M-I)	-0.6	0	0.70	0.05	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleaned

Status of sampling tape: just under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date	February 1, 2018	Previous Calibration	January 4, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon

Reason: Routine | Installation | Removal | Other:

Start Time (MST)	10:00		End Time (MST)	14:30	
Barometric Pressure	652	mmHg	Station Temperature	22.1	Deg C
Calibrator	SABIO 2010		Serial Number	4090809	
NO Cal Gas Conc	51.4	ppm	Cal Gas Expiry Date	February 14, 2020	
NOx Cal Gas Conc	51.5	ppm	Cal Gas Serial #	cc27839	

DACS Information

DACS make: Campbell Scientific CR1000 | DACS serial No.: 67802

Parameter		NO2	NOx	NO
Before	Data Slope	1.000345	0.994834	0.992617
	Data Offset	1.011397	1.332581	1.292509
After	Data Slope	1.005809	0.996277	0.997004
	Data Offset	1.445425	0.860160	0.717368
Channel #		3	1	2
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model: T200 | Analyzer serial #: 642

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO Slope	1.056		1.040	
NO Offset	0.0	mV	0.0	mV
NOX Slope	1.056		1.043	
NOX Offset	0.6	mV	0.6	mV
HVPS	771	V	771	V
Moly Temp	317.1	degC	315.1	degC
O3 Flow	82	ccm	81	ccm
RxCell Press	6.4	inHg	6.4	inHg
Sample press	23.9	inHg	23.8	inHg
Sample flow	440	ccm	438	ccm

Notes: Minor span ajustment performed.

Calibration Report

Parameter **NOx-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date: February 1, 2018 Station Location: Exshaw - Lagoon

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	5000	0.00	0.0	0.0	0.0	-1.3	-1.2	-1.1	N/A	N/A
1	5000	39.00	398.6	397.8	0.8	398.8	397.6	0.7	0.9994	1.0007
2	5000	20.00	205.2	204.8	0.4	205.7	206.3	-1.1	0.9975	0.9928
3	7000	14.00	102.8	102.6	0.2	102.5	101.8	-0.2	1.0025	1.0075
AFZ	5000	0.00	0.0	0.0	0.0	-1.3	-1.2	-1.1	0.0000	0.0000
AFS	5000	40.00	408.7	407.9	0.8	402.1	403.0	-1.4	1.0164	1.0123
							Average Correction Factor		0.9998	1.0003

As Found Concentrations: NO_X= 404.8 NO= 405.5 As Found Percent Change NO_X= -1.0% NO= -0.6%

GPT Calibration Data

Dilution Flow 5000 ccm Source Gas Flow 39.00 ccm

O3 Setpoint (V)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-1.2	-1.2	0.0	-1.3	-1.2	-1.1	N/A	N/A	N/A	N/A
NO point	400.3	400.3	0.0	399.6	400.3	-1.2	1.0016	1.0000	N/A	N/A
0.84V	400.3	83.6	316.6	398.3	83.6	313.8	1.0049	1.0000	1.0090	99.1%
0.52V	400.3	228.9	171.4	397.9	228.9	168.1	1.0059	1.0000	1.0193	98.1%
0.33V	400.3	321.4	78.9	399.2	321.4	77.0	1.0026	1.0000	1.0243	97.6%
					Average Correction Factor		1.0044	1.0000	1.0175	98.3%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.0	-0.1	0.1	ppb	-0.2	0.5	-0.2	ppb
Auto span	392.5	-0.2	392.3	ppb	391.0	1.3	390.9	ppb

Calibration Performed By: _____

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

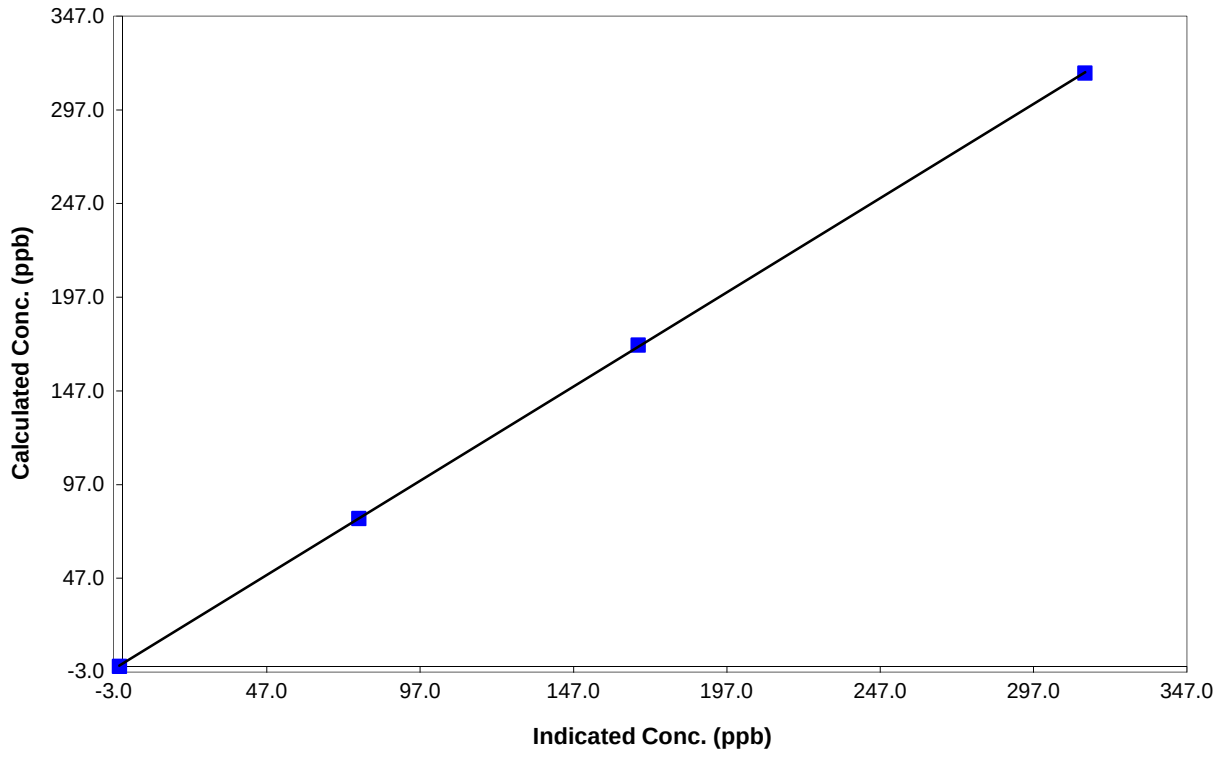
Station Information

Calibration Date	February 1, 2018	Previous Calibration	January 4, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:30
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.1	N/A		
316.6	313.8	1.0090	Correlation Coefficient	0.999982
171.4	168.1	1.0193		
78.9	77.0	1.0243	Slope	1.005809
			Intercept	1.445425

NO_2 Calibration Curve



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

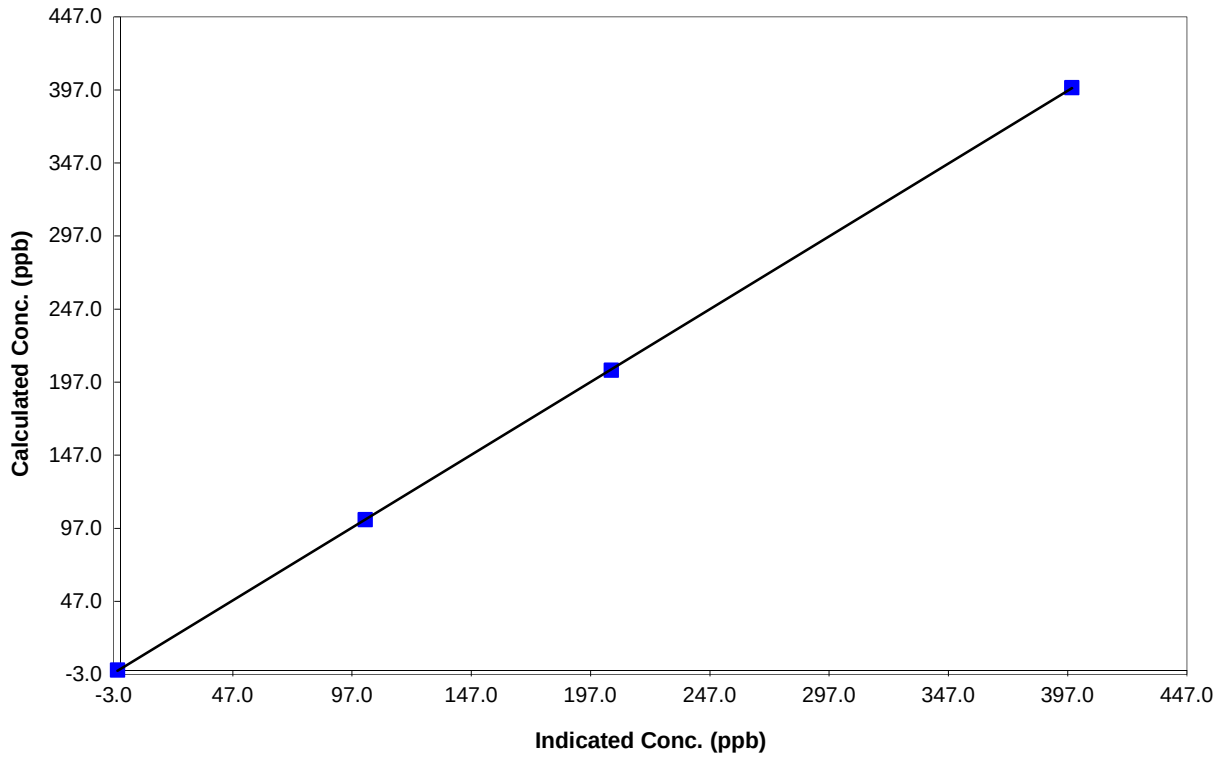
Station Information

Calibration Date	February 1, 2018	Previous Calibration	January 4, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:30
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.3	N/A		
398.6	398.8	0.9994	Correlation Coefficient	0.999991
205.2	205.7	0.9975		
102.8	102.5	1.0025	Slope	0.996277
			Intercept	0.860160

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

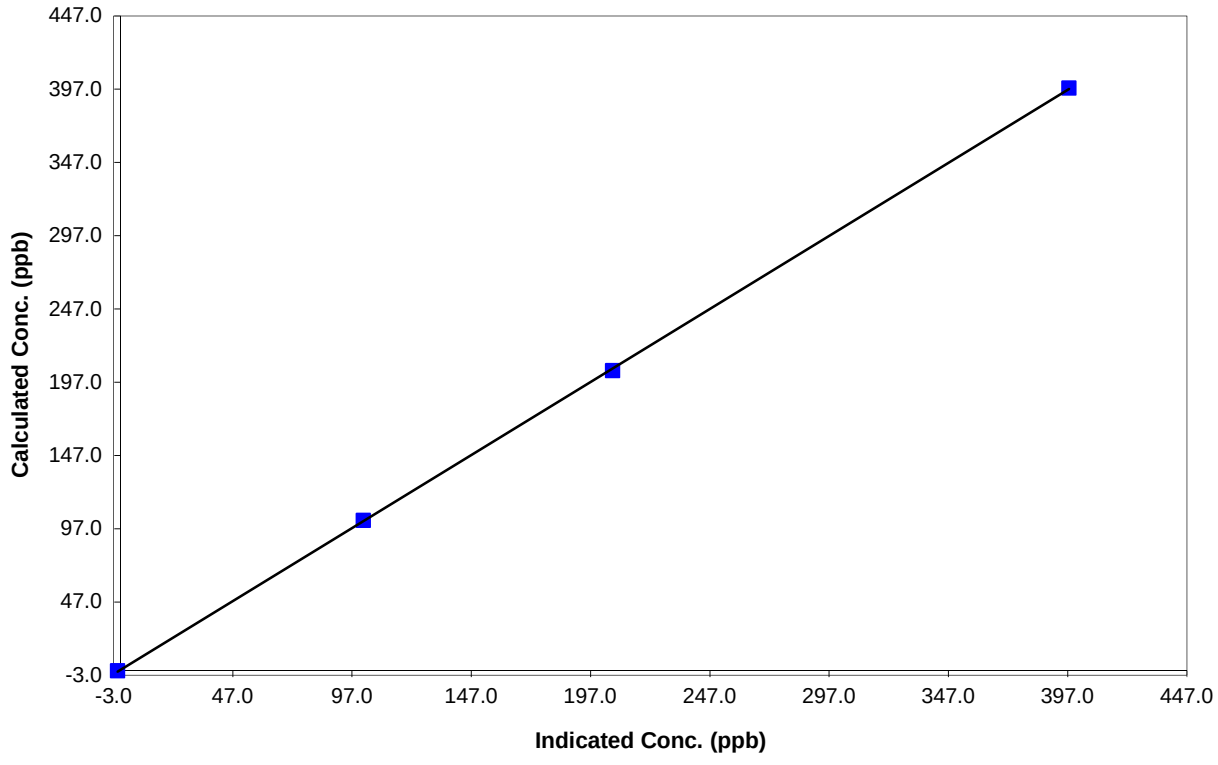
Station Information

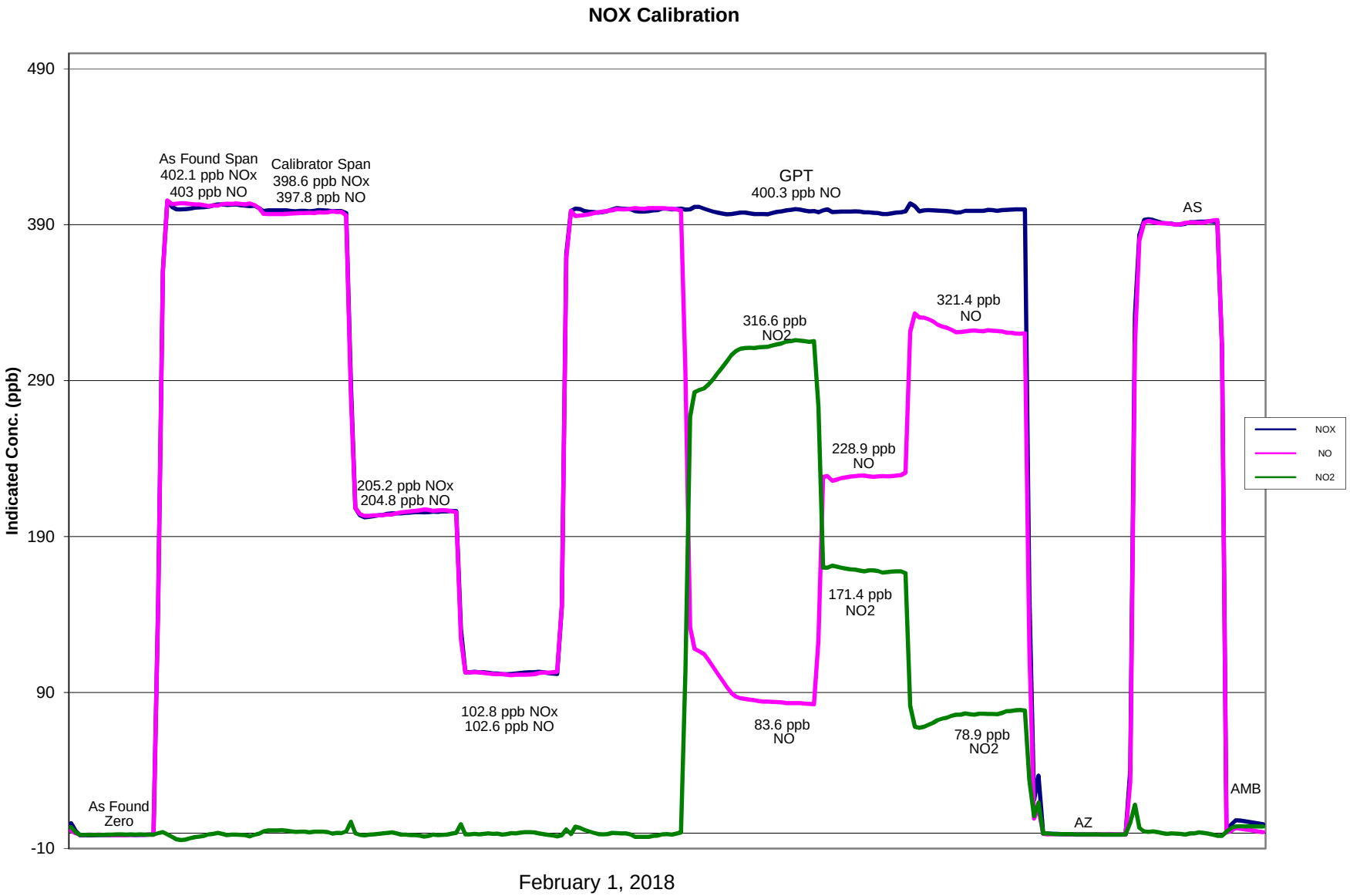
Calibration Date	February 1, 2018	Previous Calibration	January 4, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:30
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.2	N/A		
397.8	397.6	1.0007	Correlation Coefficient	0.999960
204.8	206.3	0.9928		
102.6	101.8	1.0075	Slope	0.997004
			Intercept	0.717368

NO Calibration Curve




NOX Calibration
Indicated Conc. (ppb)
490
390
290
190
90
-10
As Found Span
402.1 ppb NOx
403 ppb NO
Calibrator Span
398.6 ppb NOx
397.8 ppb NO
GPT
400.3 ppb NO
AS
321.4 ppb
NO
316.6 ppb
NO2
228.9 ppb
NO
205.2 ppb NOx
204.8 ppb NO
171.4 ppb
NO2
102.8 ppb NOx
102.6 ppb NO
83.6 ppb
NO
78.9 ppb
NO2
As Found
Zero
AZ
AMB
NOX
NO
NO2
February 1, 2018

Calibration Report

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

AIR QUALITY MONITORING

Station Information

Calibration Date	February 1, 2018	Previous Calibration	January 4, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Reason: Routine	Install	Removal	Other:
Start Time (MST)	10:05	End Time (MST)	14:30
Barometric Pressure	652 mmHg	Station Temperature	22.1 Deg C
Calibrator	SABIO 2010	Serial Number	4090809
Cal Gas Concentratio	50.8 ppm	Cal Gas Expiry Date	July 14, 2020
Gas Cert Reference	cc27839		
DACS make	Campbell Scientific CR1000	DACS serial No.	67802
DACS voltage range	0 - 5 VDC	DACS channel #	4
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.995532	Calculated slope	0.998833
Calculated intercept	-0.228171	Calculated intercept	-1.112410
Analyzer make	API Model 102A	Analyzer serial #	393

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Slope	0.927		0.918	
Offset	44.4	mV	44.4	mV
Pressure	23.8	in Hg	23.7	in Hg
Sample Flow	491	ccm	490	ccm
UV Lamp	2694	mV	2683	mV
HVPS	690	V	690	V
PMT Temp	7.3	degC	7.3	degC

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
5000	0.00	0.0	0.6	N/A
5000	39.00	393.2	394.4	0.9969
5000	20.00	202.4	204.3	0.9908
7000	14.00	101.4	102.9	0.9850
5000	0.00	0.0	0.6	As found zero
5000	39.00	393.2	395.5	As found span
			Average Correction Factor	0.9909

Calculated value of As Found Response: 392.9 ppb Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.9	ppb
Auto span	383.5	ppb	388.4	ppb

Notes: Minor span adjustment made.

Calibration Performed By: Darrin Pike

Calibration Summary

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

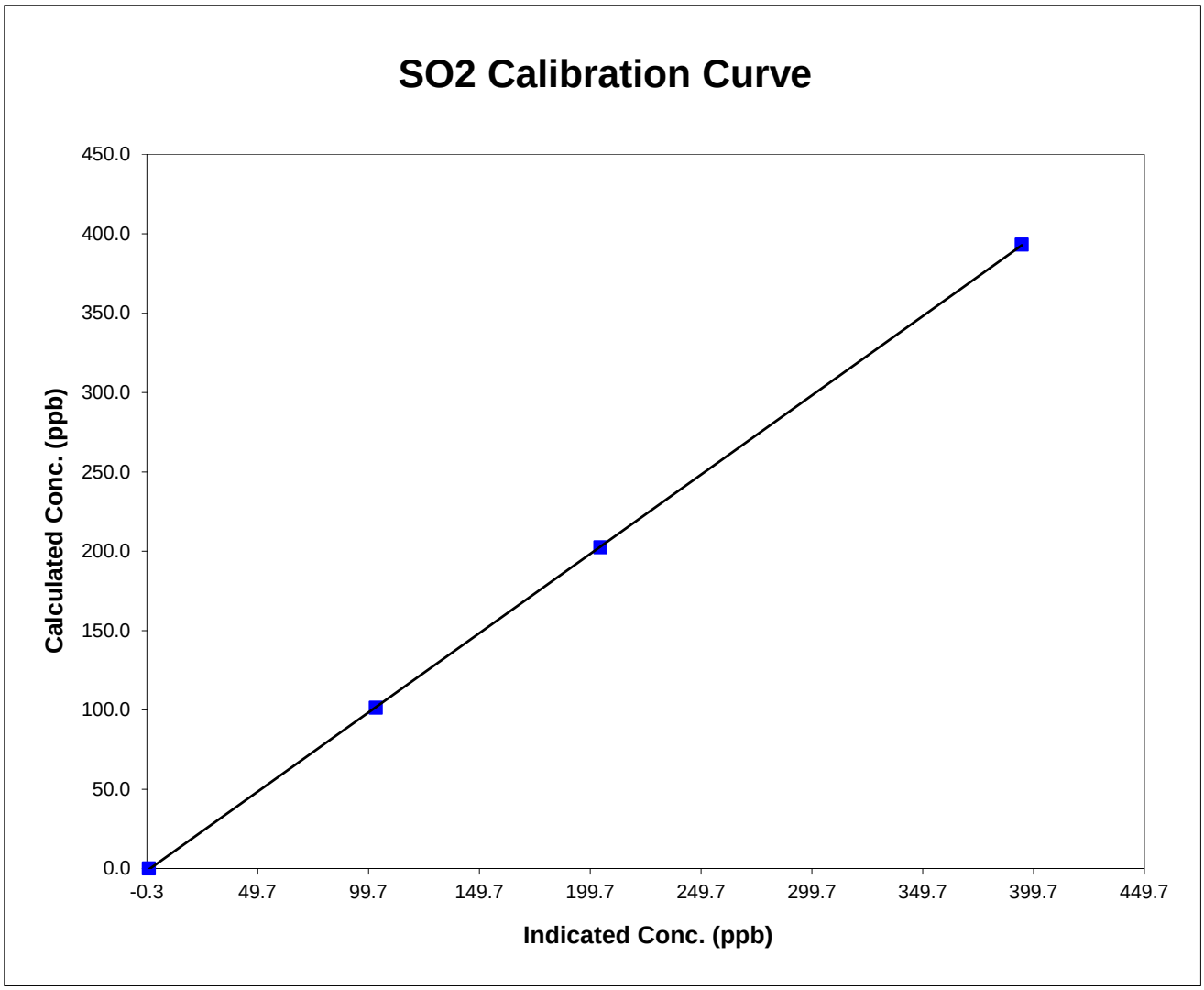
WSP AIR QUALITY MONITORING

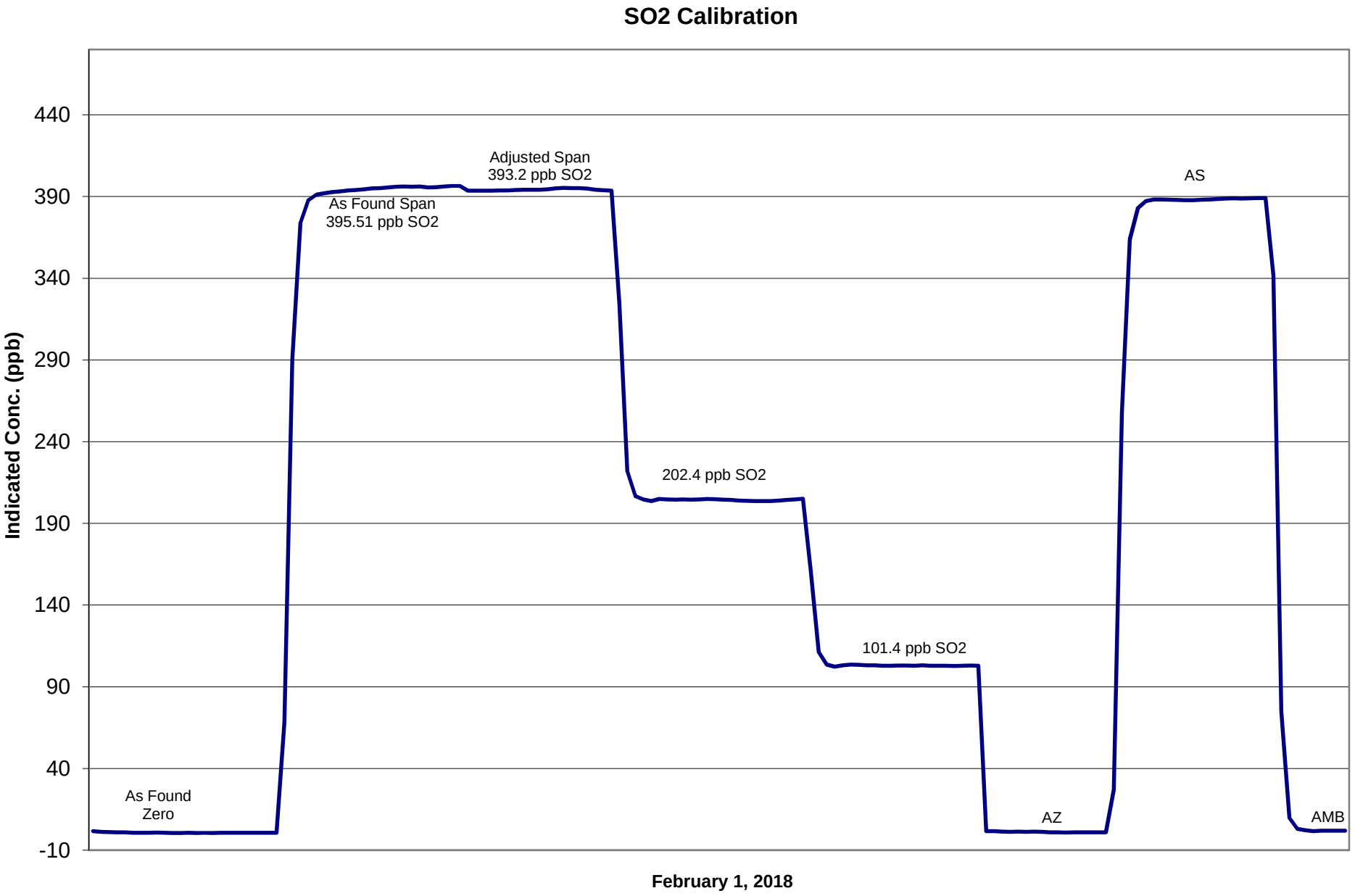
Station Information

Calibration Date	February 1, 2018	Previous Calibration	January 4, 2017
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:05	End Time (MST)	14:30
Analyzer make/model	API Model 102A	Analyzer serial #	393

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A		
393.2	394.4	0.9969	Correlation Coefficient	0.999991
202.4	204.3	0.9908		
101.4	102.9	0.9850	Slope	0.998833
			Intercept	-1.112410




SO2 Calibration
Indicated Conc. (ppb)
440
390
340
290
240
190
140
90
40
-10
As Found Zero
As Found Span 395.51 ppb SO2
Adjusted Span 393.2 ppb SO2
202.4 ppb SO2
101.4 ppb SO2
AZ
AS
AMB
February 1, 2018

AIR QUALITY MONITORING

Field Service Report

Air Monitoring Network / Client: Lafarge – Exshaw

Station Information

Visit Date: February 1, 2018 Project Number: 151-09626-00
Station Location: Exshaw – Lagoon Station Name: Lafarge – Exshaw
Reason for Visit: Routine monthly calibrations
Arrival Time: 9:00 MST Departure Time: 15:30 MST
Weather Conditions: winds from the W, clear and -4 degC.

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
DP	TRA	3	2	47mm filters
DP	CAL	6.5		

Station Information

Time (MST) Comments

09:00 – Signed in at Lafarge Plant

09:30 - Arrived at station. Started unloading and setting up gear

10:05 - Started AF calibrator Zero on NOx and SO2.

10:30 – AF Zero was good. Started AF calibrator Span.

12:00 – Flagged all PM channels for calibrations.

10:52 - NOx/SO2 spans adjusted

11:56 - SO2 calibration completed, no issues noted. NOx GPT reference point started, no issues noted in the first portion of the calibration.

12:24 - Started introducing O3 for GPT portion of calibration.

12:34 - BAM PM2.5 calibration completed with no issues. Fixed the precipitation gauge base as it seems to have been tipped by very high winds yesterday.

13:05 - BAM PM10 calibration completed with no issues

13:25 - BAM TSP calibration completed with no issues.

13:40 - GPT portion of calibration went well, no issues noted. Started AIC on NOx and SO2.

14:30 - Performed a test on Precip gauge by pouring water into precip gauge – 11 tips recorded. Hourly Precip average for the 15:00 hours came in at 2.75 which is correct (0.25mm/tip x 11 tips = 2.75mm)

Field Service Report

15:30 Left plant after signing out.

NOTES:
- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technicians – Darrin Pike

AIR QUALITY MONITORING

Field Service Report

Air Monitoring Network / Client: Lafarge – Exshaw

Station Information

Visit Date: February 21, 2018 Project Number: 151-09626-00
Station Location: Exshaw – Lagoon Station Name: Lafarge – Exshaw
Reason for Visit: Repair / Swapping PM10 BAM
Arrival Time: 09:00 MST Departure Time: 12:00 MST
Weather Conditions: very high winds from the W, clear and -12 degC.

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
LF	TRA	3	1	Sample tape
LF	CAL	2	1	BAM 1020 s/n F4643
LF	MT	2		

Station Information

Time (MST) Comments

08:30 – Signed in at Lafarge Plant

09:00 - Arrived at station. Started unloading and setting up gear. The PM10 analyzer has been off-scaling since yesterday afternoon. Connected to instrument and downloaded internal data. Seems the issue is with the reference membrane. Will have to swap with a replacement BAM as I need to take this one to the shop in Calgary for further troubleshooting and maintenance.

09:40 Installed s/nF4643.

10:00 Started leak check and calibration.

11:00 Flagged PM2.5 and TSP to check some setup settings, this will cause interruption in the sample and thus the analyzers will go to top of scale for the hour. Left station after all BAMs came back down to ambient. Went to Windridge to check on some BAM settings as well.

12:00 Flagged all PM's at Windridge to perform a check on settings same as I did with TSP and PM2.5 at Lagoon. All good.

12:30 Left plant after signing out.

NOTES:
- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technicians – Lenin Flores

MetOne BAM $PM_{2.5}$ Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Windridge	DATE:	February 2, 2018
START TIME (MST):	10:00	END TIME (MST):	10:38

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM2.5	Audit Device S/N	624
Serial Number	U21074	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-18.0	644	0.00	16.7	10:34
As Found Data	MEASURED (AF)	-18.0	641	0.40	16.04	10:36
	AF Difference (AF-I)	0.0	-3	0.40	-0.66	0:02
Adjusted Data	MEASURED (M)	-18.0	641	0.40	16.78	10:34
	Adj Difference (M-I)	0.0	-3	0.40	0.08	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleaned

Status of sampling tape: slightly under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

MetOne BAM PM_{10} Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Windridge	DATE:	February 2, 2018
START TIME (MST):	10:33	END TIME (MST):	11:05

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
	PM10	Audit Device S/N	624
Serial Number	U21075	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-17.5	645	0.00	16.7	11:00
As Found Data	MEASURED (AF)	-18.0	641	0.40	16.14	11:01
	AF Difference (AF-I)	-0.5	-4	0.40	-0.56	0:01
Adjusted Data	MEASURED (M)	-18.0	641	0.40	16.72	11:00
	Adj Difference (M-I)	-0.5	-4	0.40	0.02	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleaned

Status of sampling tape: slightly under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

MetOne BAM TSP Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Windridge	DATE:	February 2, 2018
START TIME (MST):	11:00	END TIME (MST):	11:30

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	624
Serial Number	U21073	Certification Date	30-Nov-17

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	-18.0	644	0.00	16.7	11:23
As Found Data	MEASURED (AF)	-18.0	641	0.50	15.60	11:24
	AF Difference (AF-I)	0.0	-3	0.50	-1.10	0:01
Adjusted Data	MEASURED (M)	-18.0	641	0.50	16.71	11:23
	Adj Difference (M-I)	0.0	-3	0.50	0.01	0:00
	LIMITS	± 4.0 ^{0}C	5 mm Hg	1.0 L/min	± 1.0 L/min	±2 min

Sample Head Inspect/Cleaning: inspected and cleaned

Status of sampling tape: just under half a roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed Self-tests - all passed.

AIR QUALITY MONITORING

Field Service Report

Air Monitoring Network / Client: Lafarge – Exshaw

Station Information

Visit Date: February 2, 2018
Station Location: Exshaw – Windridge
Reason for Visit: Routine monthly calibrations
Arrival Time: 9:30 MST
Weather Conditions: clear and -14 degC.

Project Number: 151-09626-00
Station Name: Lafarge – Windridge

Departure Time: 14:30 MST

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
DP	CAL	5		
	TRV	3		

Station Information

Time (MST) Comments

9:30 – Arrived at LaFarge plant, signed in at the Plant

10:00 - Flagged all PM channels at Windridge site

10:38 - BAM PM2.5 calibration completed with no issues.

11:05 - BAM PM10 calibration completed with no issues. .

11:30 - BAM TSP calibration completed with no issues.

11:45 – left Windridge to audit Grimm's

West Sharp:
No access

Berm Sharp:
Measured Sample flow = 1.15 LPM
Sharp AmbT = -17 degC
Audit AmbT = -18 degC

Entrance Sharp:
Measured Sample flow = 1.15 LPM
Sharp AmbT = -16.6 degC
Audit AmbT = -14 degC

13:30 - Visited lagoon site to further secure the precipitation base platform that I repaired yesterday. Precipitation base fixed and secured.

14:30 - Left site after signing out of control room.

AIR QUALITY MONITORING

Field Service Report

NOTES:
- All analyzers in sample mode → OK
- Confirmed operation of manifold intake fan → OK
- All sample lines connected properly → OK

Technician: Darrin Pike