LAFARGE CANADA INC.

AMBIENT AIR QUALITY MONTHLY REPORT

OCTOBER 2018

NOVEMBER 14, 2018

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OCTOBER 2018

LAFARGE CANADA INC.

PROJECT NO.: 171-00556-00
DATE: NOVEMBER 13, 2018

WSP
SUITE 1000
840 HOWE STREET
VANCOUVER, BC, CANADA V6Z 2M1

T: +1 604 685-9381
F: +1 604 683-8655
WSP.COM

November 14, 2018

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

Attention: Janet Brygger

Dear Ms. Brygger

Subject: Ambient Air Quality Monthly Report - October 2018

The operational uptime for the meteorological systems and all analyzers at the Lagoon station was over 96% in October. There were no exceedances of the 24-hour TSP and $PM_{2.5}$ Alberta Ambient Air Quality Objectives (AAAQOs) in October at the Lagoon monitoring location.

All analyzers at the Windridge station had over 99% operational uptime in October. There were 3 exceedances of the 24-hour TSP AAAQO and zero exceedances of the 24-hour $PM_{2.5}$ AAAQO and 1-hour $PM_{2.5}$ AAAQG. TSP exceedances occurred on days with high wind speeds.

Data collected at all of the GRIMM monitors are considered Industrial Ambient Monitors and are meant for assessing the performance of Lafarge Exshaw's Fugitive Dust Control Best Management Practices – Program, the GRIMM monitors are not Air Monitoring Directive (AMD) compliant. The operational uptime at the 3 monitors was as follows: 99.6% at the Berm monitor station due to 3 hours of instrument error; 100% at both the West the Entrance monitor stations. The Entrance GRIMM monitor exceeded the 24-hour TSP AAAQO for 19 days, with zero exceedances of the 24-hour $PM_{2.5}$ AAAQO, while the Berm GRIMM had 11 exceedances of the TSP Objective and zero exceedances of the $PM_{2.5}$ Objective. The West GRIMM monitor recorded zero exceedances of the 24-hour $PM_{2.5}$ Objective and the 24-hour TSP Objective.

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

Sincerely,

Tyler Abel, M.Sc.
Group Manager, Air Quality
Environment

SUITE 1000
840 HOWE STREET
VANCOUVER, BC, CANADA V6Z 2M1

T: +1 604 685-9381
F: +1 604 683-8655
wsp.com

SIGNATURES

PREPARED BY

November 14, 2018

Rowena Seto, B.Sc.
Junior Air Quality Specialist, Environment

Date

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

November 14, 2018

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

Date

[1] Approval of this document is an administrative function indicating readiness for release and does not impart legal liability on to the Approver for any technical content contained herein. Technical accuracy and fit-for-purpose of this content is obtained through the review process. The Approver shall ensure the applicable review process has occurred prior to signing the document.

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1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon, Windridge, 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 October 1, 2018 and October 31, 2018.

This monthly report was prepared by Rowena Seto, Junior 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 OCTOBER 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	17.9	0	8.3	-
SO_2 (ppb)	100.0	13.0	0	2.9	0
$PM_{2.5}$ (µg/m^3)	100.0	13.7	0[1]	7.0	0
PM_{10} (µg/m^3)	96.5	171.9	-	43.0	-
TSP (µg/m^3)	97.0	253.4	-	58.6	0
Temperature (°C)	100.0	18.1	-	11.3	-
Wind Speed (km/hr) /Direction (Degrees)	100.0	40.2/W	-	26.6/WSW	-
Precipitation (mm)	100.0	0.8[2]	-	14.75[3]	-

[1] Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m^3.
[2] Maximum Daily Total Accumulation of Precipitation (mm)
[3] Monthly Total Accumulation of Precipitation (mm)

Data Quality Notes:

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

Calibration/Maintenance Notes:

- The NO_x and SO_2 analyzers had 100% uptime for the month of October.

- The $PM_{2.5}$ analyzer had 100% uptime for the month of October.
- The PM_{10} analyzer had 96.5% uptime for the month of October due to 26 hours of instrument error.
- The TSP analyzer had 97% uptime for the month of October due to 22 hours of instrument maintenance.
- The meteorological analyzers had 100% uptime for the month of October.

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/m³)	100.0	40.1	0*	14.1	0
PM_{10} (µg/m³)	100.0	456.8	-	101.7	-
TSP (µg/m³)	99.9	486.1	-	142.6	3

* Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

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

Calibration/Maintenance Notes:

- The $PM_{2.5}$ and PM_{10} analyzers had 100% uptime for the month of October.
- The TSP analyzer had 99.9% uptime for the month of October due to 1 hour of instrument error.

2.3 WEST GRIMM

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

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/m³)	100.0	24.2	0*	11.2	0

PM_{10} (µg/m³)	100.0	87.2	-	18.4	-
TSP (µg/m³)	100.0	186.9	-	33.4	0

* Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

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

Calibration/Maintenance Notes:

- All PM analyzers had 100% uptime for the month of October.

2.4 BERM GRIMM

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

Table 2-4 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/m³)	99.6	86.3	3*	22.6	0
PM_{10} (µg/m³)	99.6	763.2	-	171.6	-
TSP (µg/m³)	99.6	1864.0	-	502.4	11

* Any exceedances reported for 1-hour $PM_{2.5}$ are over the guideline level (AAAQG) of 80 µg/m³.

Data Quality Notes:

- There were no exceedances of the 24-hour $PM_{2.5}$ AAAQG.
- There were 3 hours exceeding the 1-hour $PM_{2.5}$ AAAQG. 2 of these hours occurred on October 27th when burning was reported in the Exshaw area.
- There were 11 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzers had 99.6% uptime for the month of October due to 3 hours of instrument error.

2.5 ENTRANCE GRIMM

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

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
$PM_{2.5}$ ($\mu g/m^3$)	100.0	48.0	0*	23.7	0
PM_{10} ($\mu g/m^3$)	100.0	473.1	-	158.2	-
TSP ($\mu g/m^3$)	100.0	1441.7	-	385.0	19

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

Data Quality Notes:

- There were no exceedances of the 24-hour $PM_{2.5}$ AAAQG.
- There were no exceedances of the 1-hour $PM_{2.5}$ AAAQG.
- There were 19 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- All analyzers had 100% uptime for the month of October.

3 LAGOON STATION

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

This section provides a summary of the monitoring activities for the Lagoon ambient air quality station, including: a table of instrumentation (Table 3-1), a data summary table (Table 3-2), site visit notes, a wind rose (Figure 3-2) and tables and graphs illustrating the monitoring results for October 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 monitor

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 was calibrated on October 24th. The monitor had 100% uptime in October.

3.1.2 SO_2 MONITORING

The SO_2 monitor was calibrated on October 24th. The monitor had 100% uptime in October.

3.1.3 PM MONITORING

The $PM_{2.5}$ and PM_{10} monitors were calibrated on October 24th, while the TSP monitor was calibrated on October 25th. For the month of October, the $PM_{2.5}$ monitor had 100% uptime, the PM_{10} monitor had 96.5% uptime due to 26 hours of instrument error, and the TSP monitor had 97% uptime due to 22 hours of instrument maintenance.

3.1.4 METEOROLOGICAL MONITORING

All meteorological sensors had 100% operation time.

3.2 MONITORING RESULTS AND TRENDS

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

Figure 3-3 graphically illustrates the time series for hourly concentrations as well as wind speed and direction, while Figure 3-4 shows daily average concentrations recorded during October 2018 for the pollutants listed in Table 3-2.

There were no exceedances of the 24-hour TSP (100 µg/m^3) and $PM_{2.5}$ (30 µg/m^3) AAAQO. Historically in October, the average number of 24-hour TSP AAQO exceedances and 24-hour $PM_{2.5}$ AAAQO exceedances are both zero. The maximum number of 24-hour TSP and exceedances was 1 in 2012 and 2014. The station has not recorded an exceedance of the $PM_{2.5}$ AAQO in October since monitoring began in 2010.

The wind rose (Figure 3-2) indicates that the winds predominantly came from the west-southwest and west directions. These directions follow the general orientation of the valley.

Table 3-2 Summary of October 2018 data at Lagoon

Parameter	Guideline / 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	-	4.9	17.9	22	1	13.5	256.1	8.3	19	100.0
SO_2 (ppb)	172	48	Lagoon	0	0	0.9	13.0	17	11	18.3	286.0	2.9	17	100.0
$PM_{2.5}$ ($\mu g/m^3$)	80	30	Lagoon	0	0	4.6	13.7	10	11	11.7	59.2	7.0	10	100.0
PM_{10} ($\mu g/m^3$)	-	-	Lagoon	-	-	17.1	171.9	12	12	34.5	254.0	43.0	25	96.5
TSP ($\mu g/m^3$)	-	100	Lagoon	-	0	23.0	253.4	17	19	15.7	279.0	58.6	17	97.0
Temperature (°C)	-	-	Lagoon	-	-	4.0	18.1	17	17	20.5	269.6	11.3	20	100.0
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	17.3	40.2/W	12	14	36.6	252.6	26.6/WSW	27	100.0
Precipitation (mm)	-	-	Lagoon	-	-	0.0	0.8					14.8	-	100.0

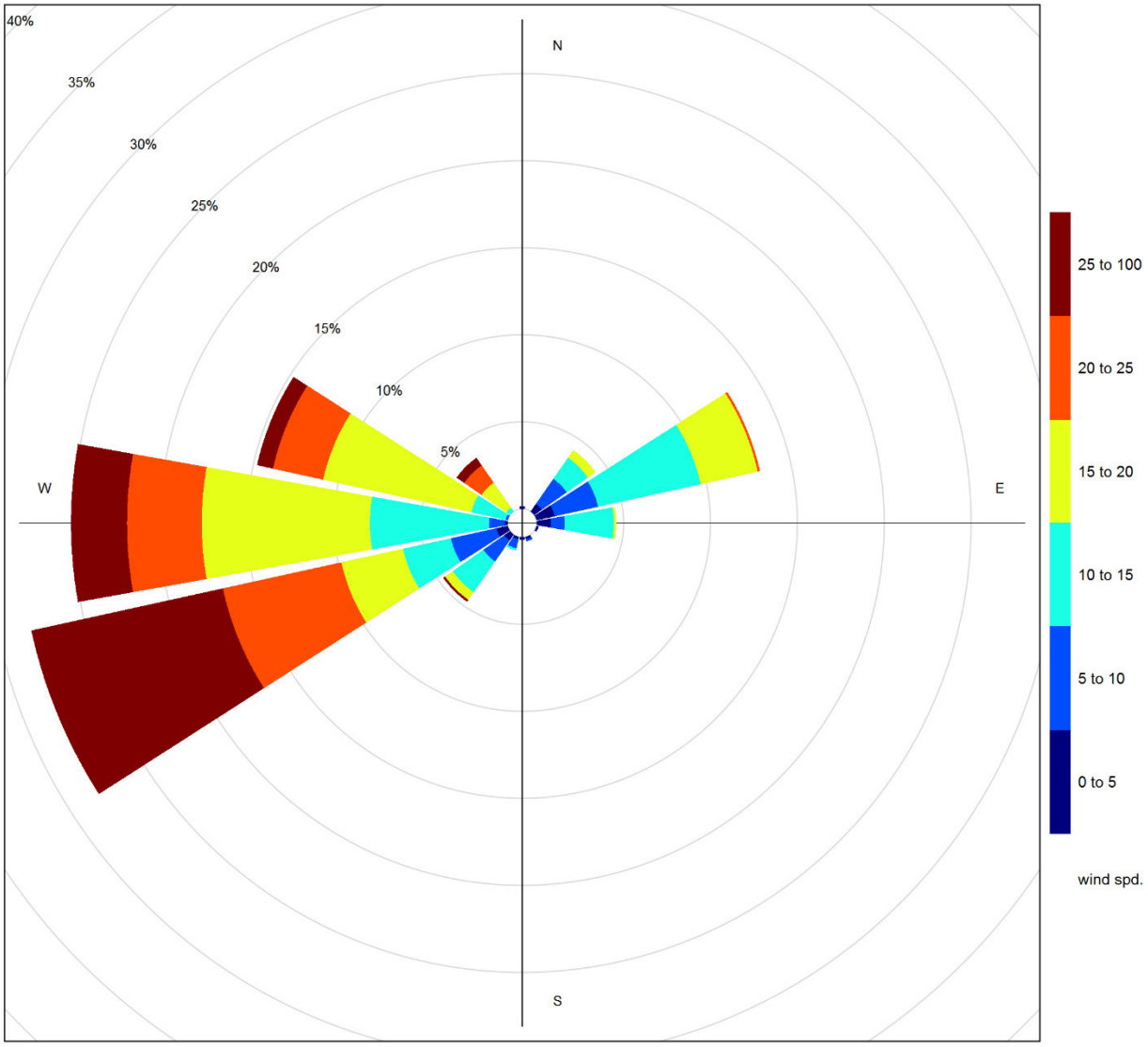

Figure 3-2 October 2018 wind rose from the Lagoon Station

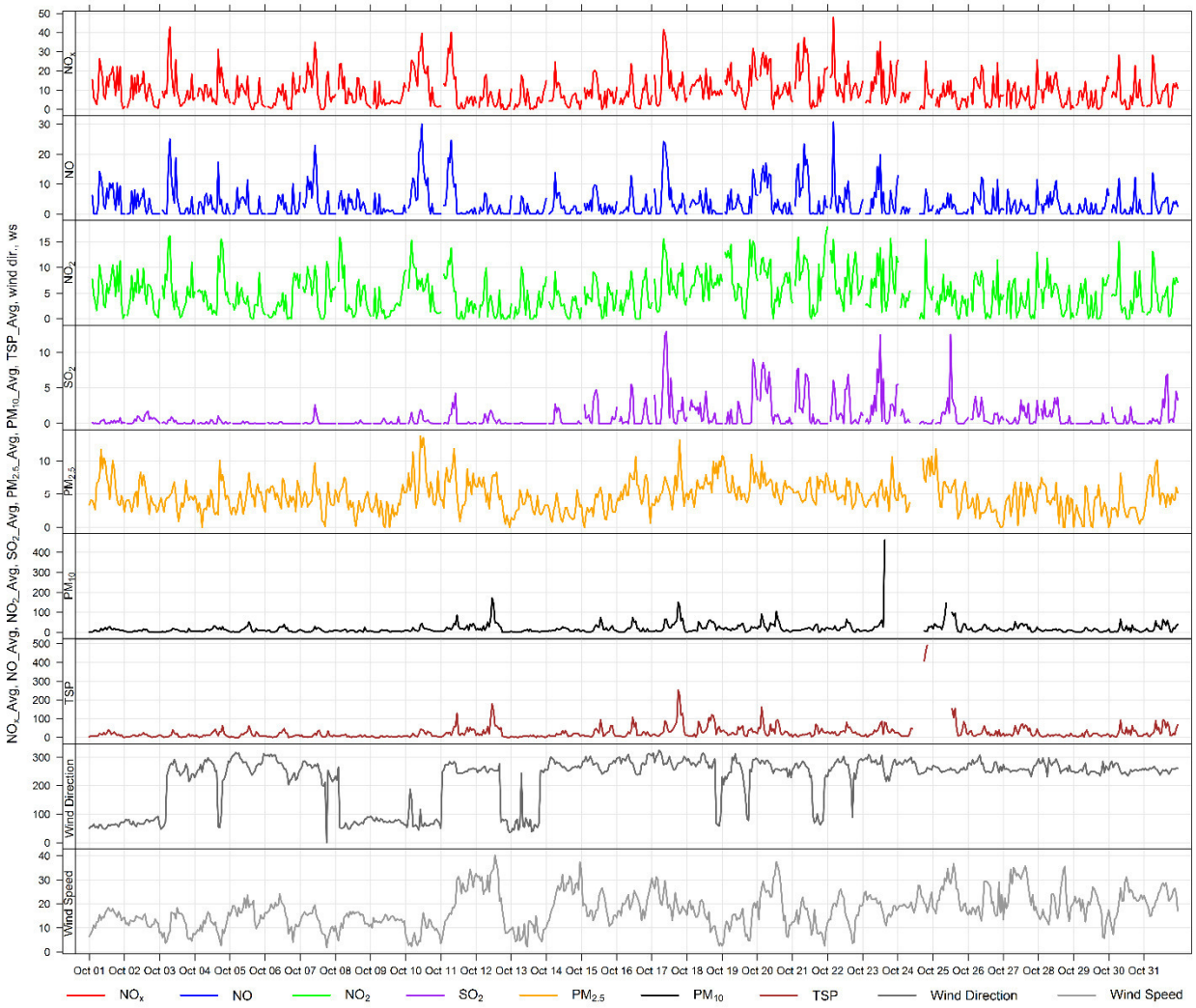

Figure 3-3 1-hour concentrations of NO_x, SO_2, particulate matter, wind direction and wind speed at the Lagoon station

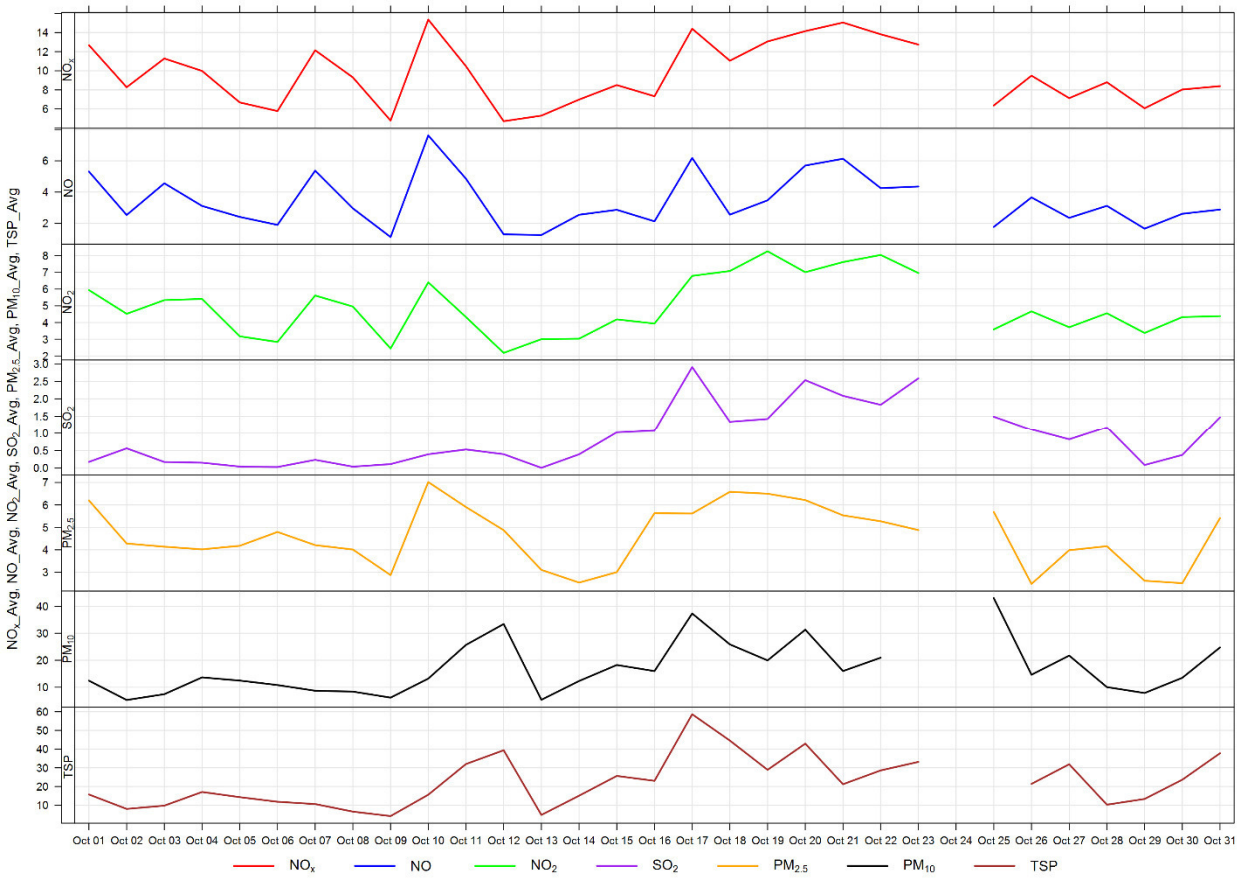

Figure 3-4 24-hour concentrations of NO_x, SO_2, and particulate matter at the Lagoon monitor

Figure 3-5 through Figure 3-7 show the variation in concentrations over various time averaging periods for PM, SO_2 and NO_x. The particulate matter plot in Figure 3-5 shows that PM_{10} and TSP concentrations show a diurnal pattern associated with Lafarge operations, but also daytime emissions from traffic and other activities in Exshaw.

Figure 3-6 shows the variation of SO_2 over various time periods. SO_2 concentrations patterns are dependent on the timing of the highest SO_2 concentrations recorded in the month because in general SO_2 concentrations are very low. Figure 3-7 shows the variation of NO_x, NO and NO_2, with the peak of all three pollutants occurring in the early morning. This may be indicative of a peak in traffic.

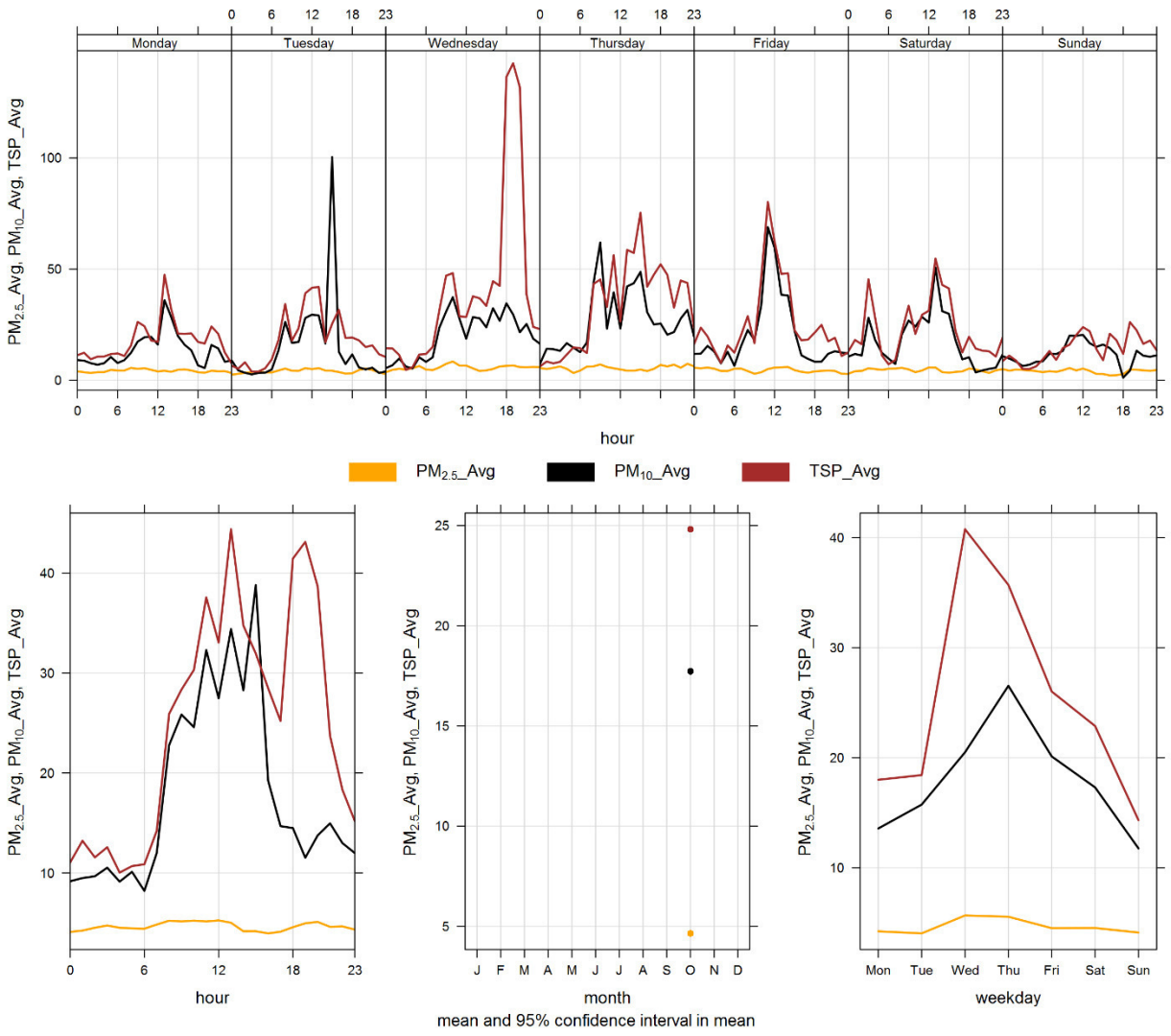

Figure 3-5 Lagoon monitor particulate matter time variation

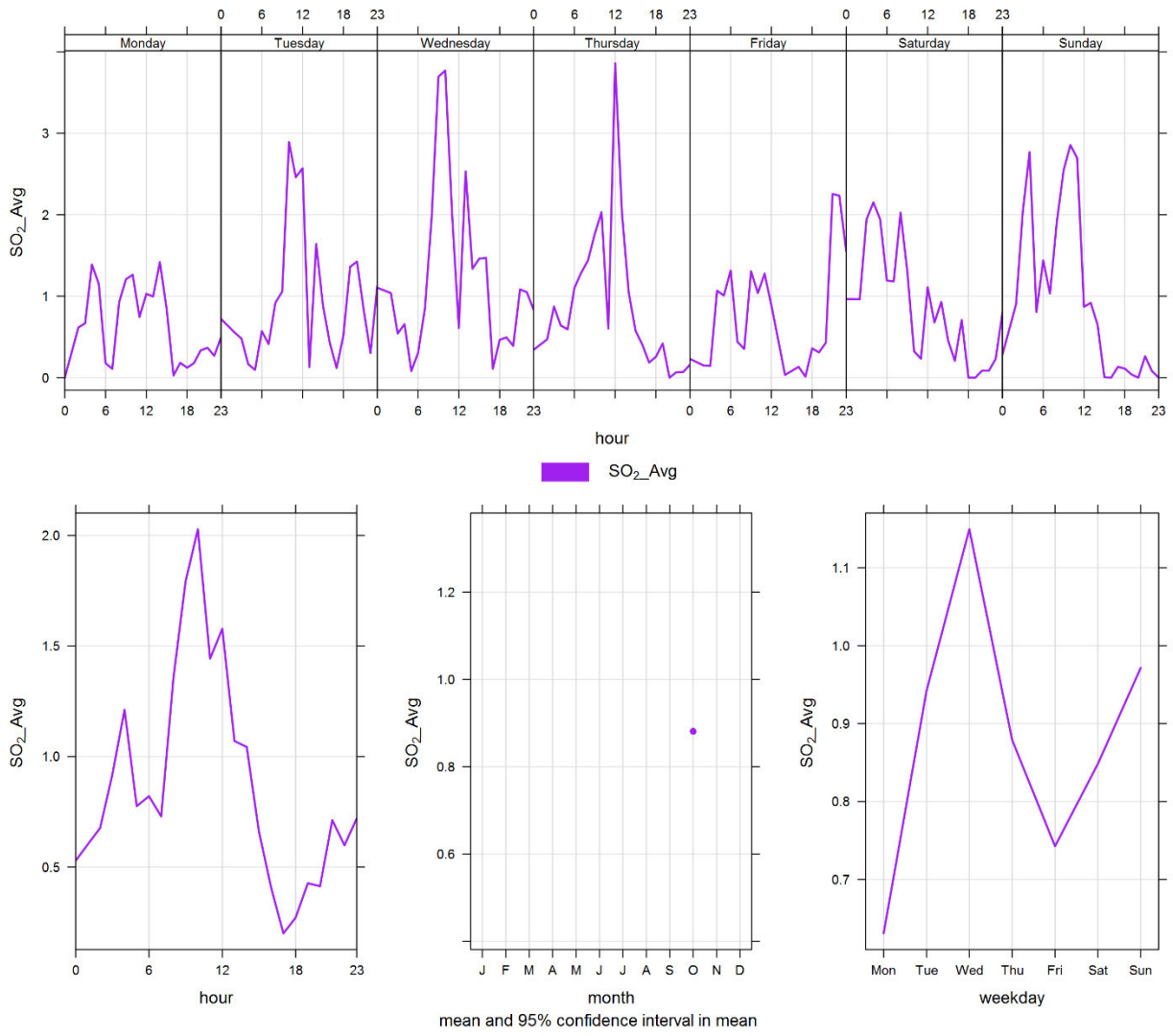

Figure 3-6 Lagoon monitor SO_2 time variation

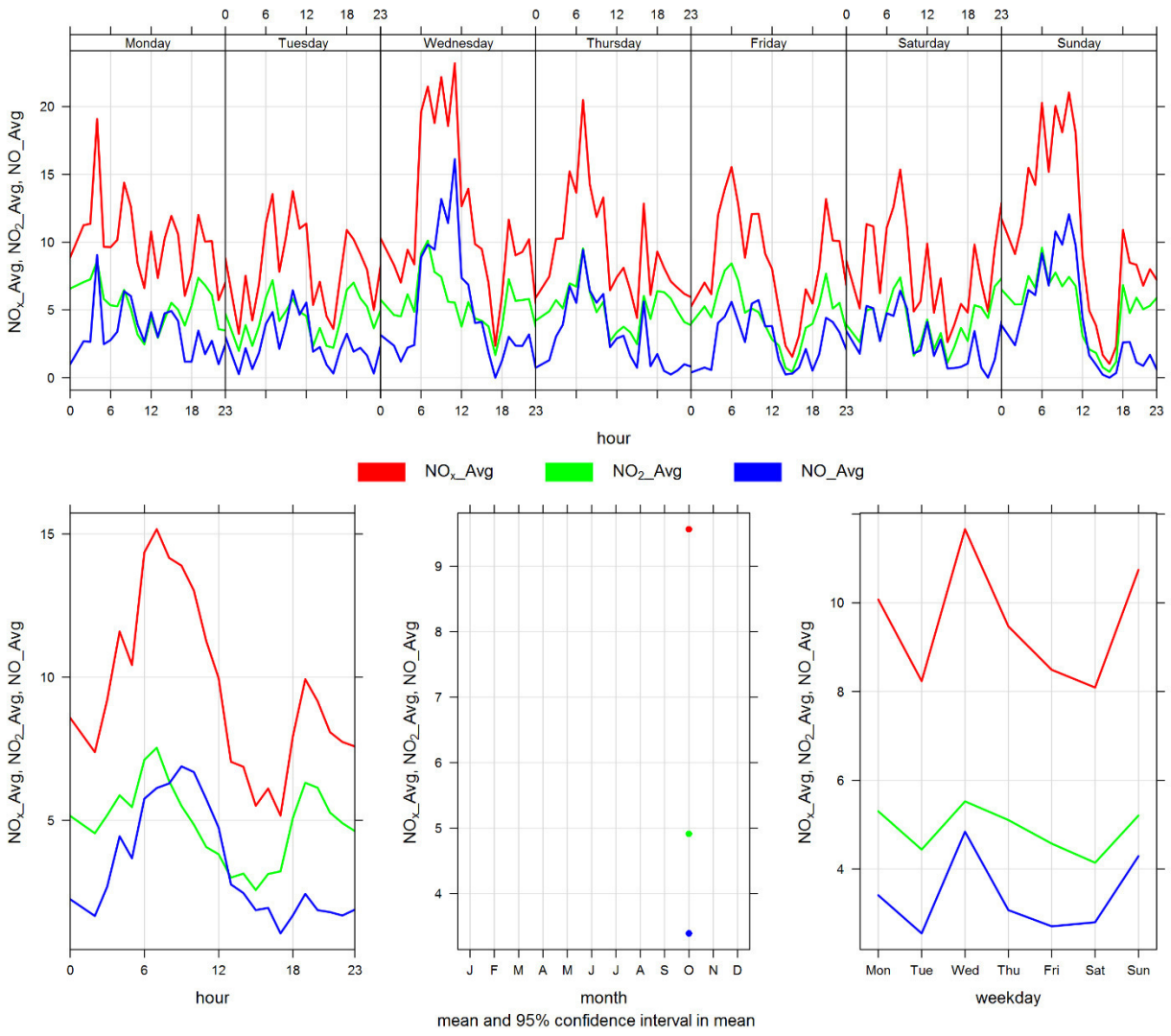

Figure 3-7 Lagoon monitor NO_x time variation

4 WINDRIDGE STATION

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

4.1 SITE VISIT NOTES

All BAM monitors were calibrated on October 17th. In October, the operation time for the $PM_{2.5}$ and PM_{10} analyzers was 100%, while the operation time for the TSP analyzer was 99.9% due to one hour of instrument error.

4.2 MONITORING RESULTS AND TRENDS

Table 4-2 summarizes the hourly and daily concentrations recorded in October 2018 and Table 4-2 summarizes the recorded exceedances. Figure 4-1 illustrates the time series for hourly PM, Figure 4-2 illustrates the time series for daily PM, and Figure 4-3 illustrates the time series for hourly PM over different time periods.

There were zero exceedances of the 24-hour $PM_{2.5}$ AAAQO, zero exceedances of the 1-hour $PM_{2.5}$ AAAQG, and 3 exceedances of the 24-hour TSP AAAQO. TSP exceedances occurred on days with high wind speeds. The highest $PM_{2.5}$ concentrations occurred on October 27th when burning was reported in the Exshaw area.

Table 4-2 Summary of October 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	
$PM_{2.5}$ ($\mu g/m^3$)	80	30	Windridge	0	0	4.4	40.1	27	15	35.8	256.0	14.1	27	100.0
PM_{10} ($\mu g/m^3$)	-	-	Windridge	-	-	27.9	456.8	27	9	31.6	250.5	101.7	25	100.0
TSP ($\mu g/m^3$)	-	100	Windridge	-	3	38.1	486.1	25	10	34.8	254.9	142.6	25	99.9

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						
10/25/2018	143	-	255.5	24.6	42.4	high wind event
10/27/2018	112	-	255.8	26.6	36.9	high wind event; burning
10/31/2018	115	-	254.4	22.5	44.9	high wind event
Total # of Exceedances	3	0				

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

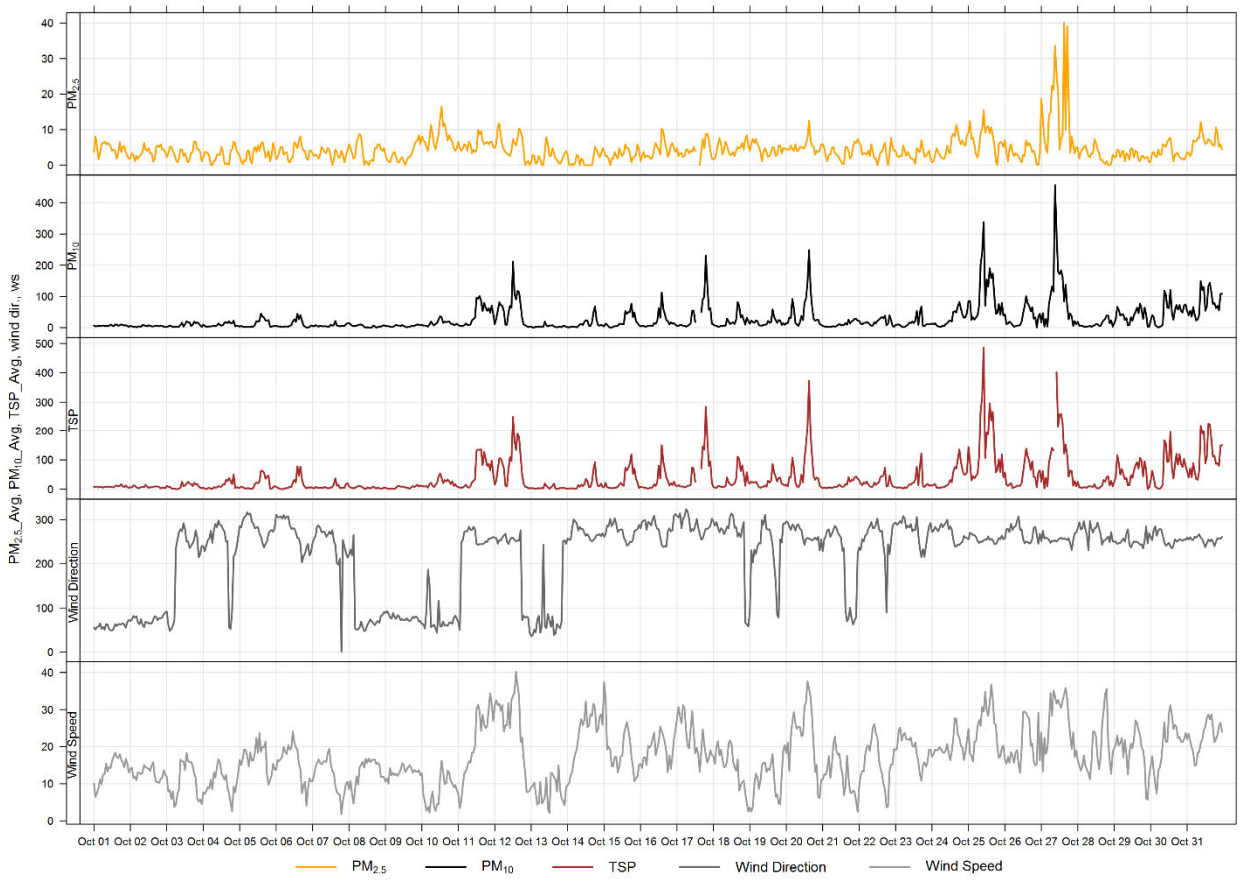

Figure 4-1 1-hour particulate matter concentrations recorded at the Windridge monitor

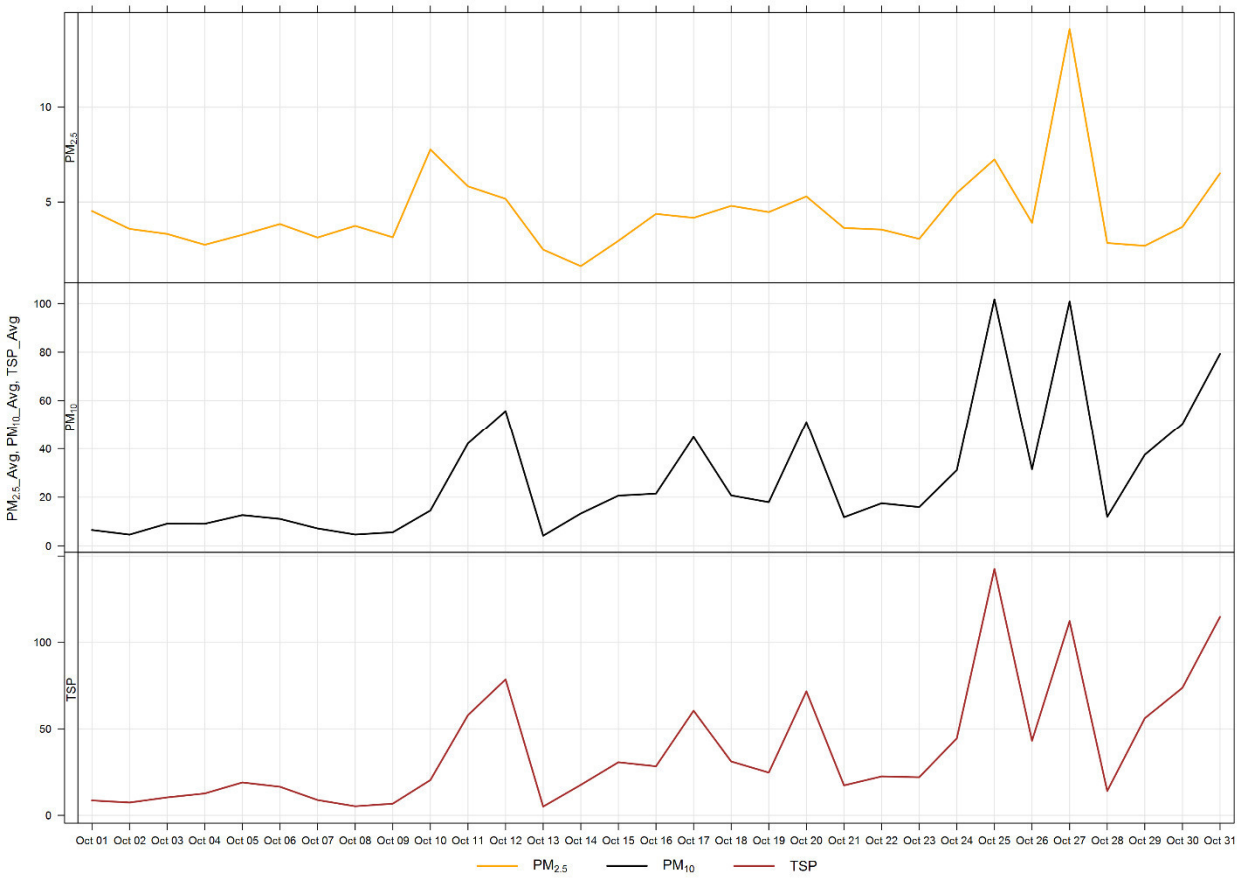

Figure 4-2 24-hour particulate matter concentrations at the Windridge monitor

Figure 4-3 shows the wind rose for the 3 days of TSP exceedances. The wind rose shows that the winds predominantly come from the west and west-southwest directions, and were over 25 km/kr.

Figure 4-4 illustrates the hourly PM concentrations recorded at the Windridge monitor, averaged over different time periods. The plot across the top shows the variation of PM over the course of a week, while the bottom three plots show the changes in PM over the course of a day, month and weekday, respectively. Figure 4-4 is based on data collected during October 2018 and indicates a diurnal pattern that, similar to the Lagoon station, is associated with Lafarge operations, but also daytime emissions from traffic and other activities in Exshaw.

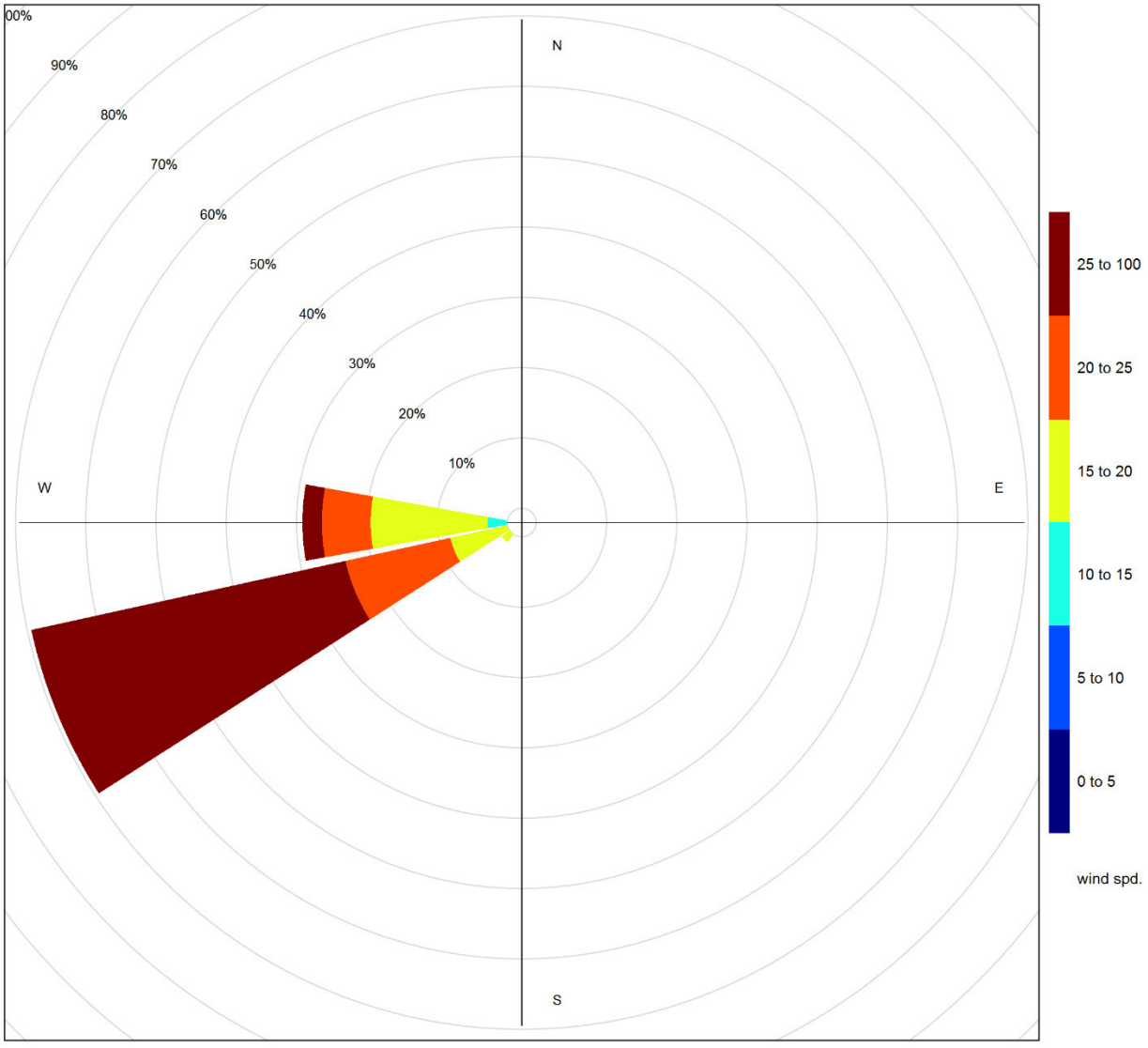

Figure 4-3 Wind rose for TSP exceedance day recorded at the Windridge Station

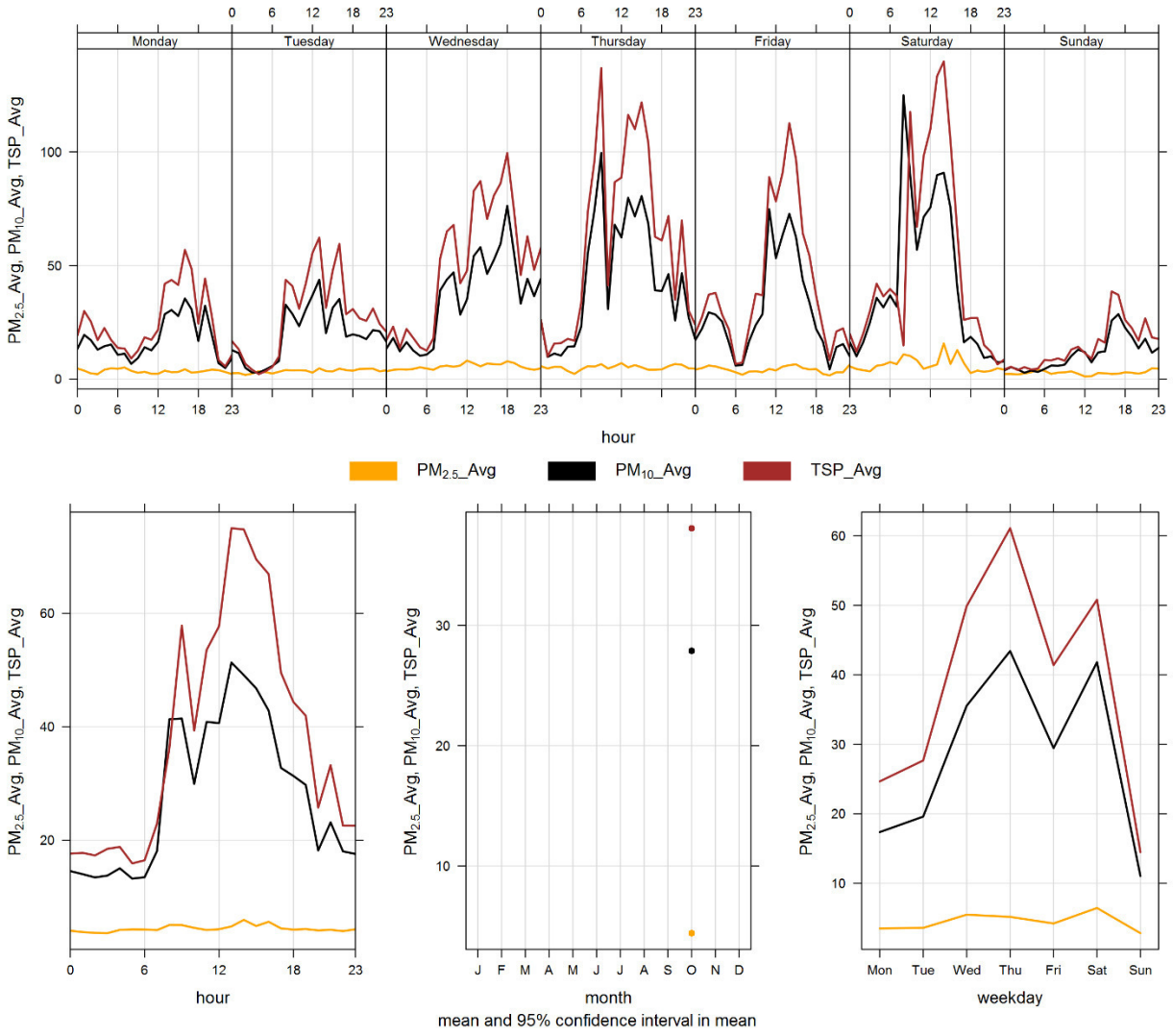

Figure 4-4 Windridge particulate matter time variation

5 WEST INDUSTRIAL GRIMM

5.1 SITE VISIT NOTES

Table 5-1 indicates the equipment that is installed at the West monitoring location. During the month of October, 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 3-2 the majority of winds came from the west-southwest, west, and east-northeast directions during October. Table 5-2 summarizes the maximum 1-hour and 24-hour concentrations recorded over the course of the month. **Error! Reference source not found.** summarizes the recorded exceedances. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

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 no exceedances of the 24-hour TSP guideline (100 µg/m^3) nor the $PM_{2.5}$ (30 µg/m^3) guideline. Historically in October, the average number of 24-hour TSP AAQO exceedances and 24-hour $PM_{2.5}$ AAAQO exceedances are both zero. The maximum number of 24-hour TSP AAQO exceedances was 1 in 2013, while the 24-hour $PM_{2.5}$ AAQO has not been exceeded in October since monitoring began in 2010.

Table 5-2 Summary of October 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	4.2	24.2	10	12	16.2	57.6	11.2	10	100.0
PM_{10} ($\mu g/m^3$)	-	-	West	-	-	6.5	87.2	10	12	16.2	57.6	18.4	10	100.0
TSP ($\mu g/m^3$)	-	100	West	-	0	8.7	186.9	10	12	16.2	57.6	33.4	11	100.0

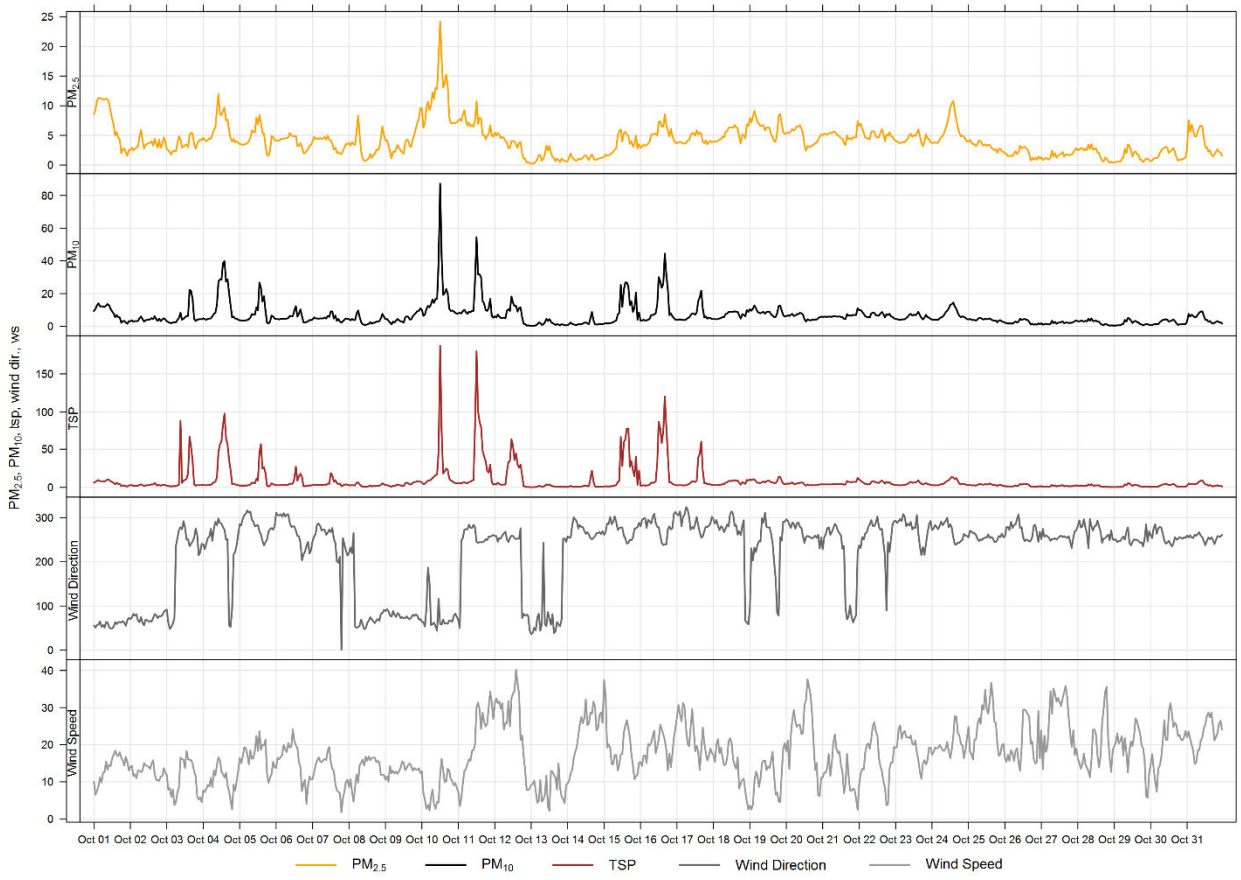

Figure 5-1 1-hour particulate matter concentrations at the West monitor

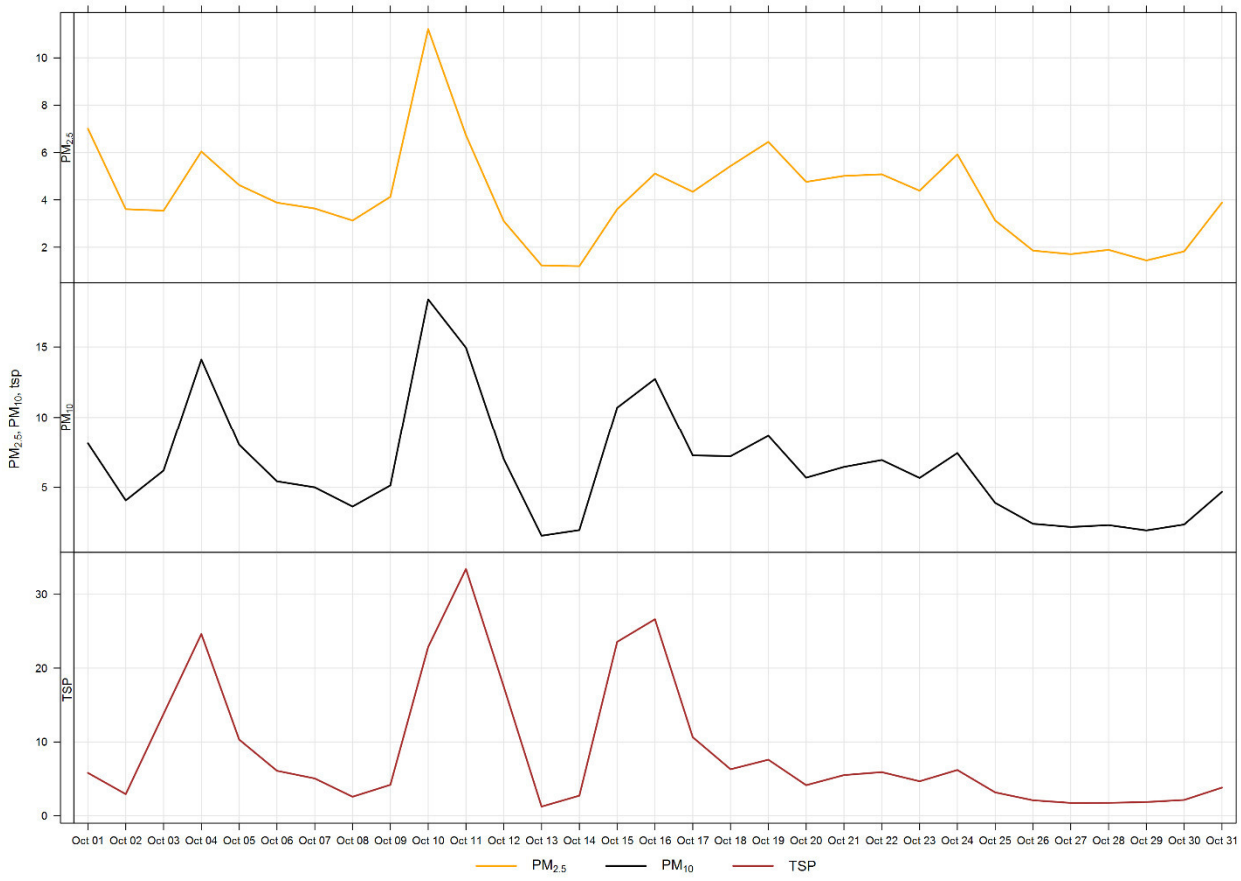

Figure 5-2 24-hour particulate matter concentrations at the West monitor

Figure 5-3 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 5-3 is based on data collected during October 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.

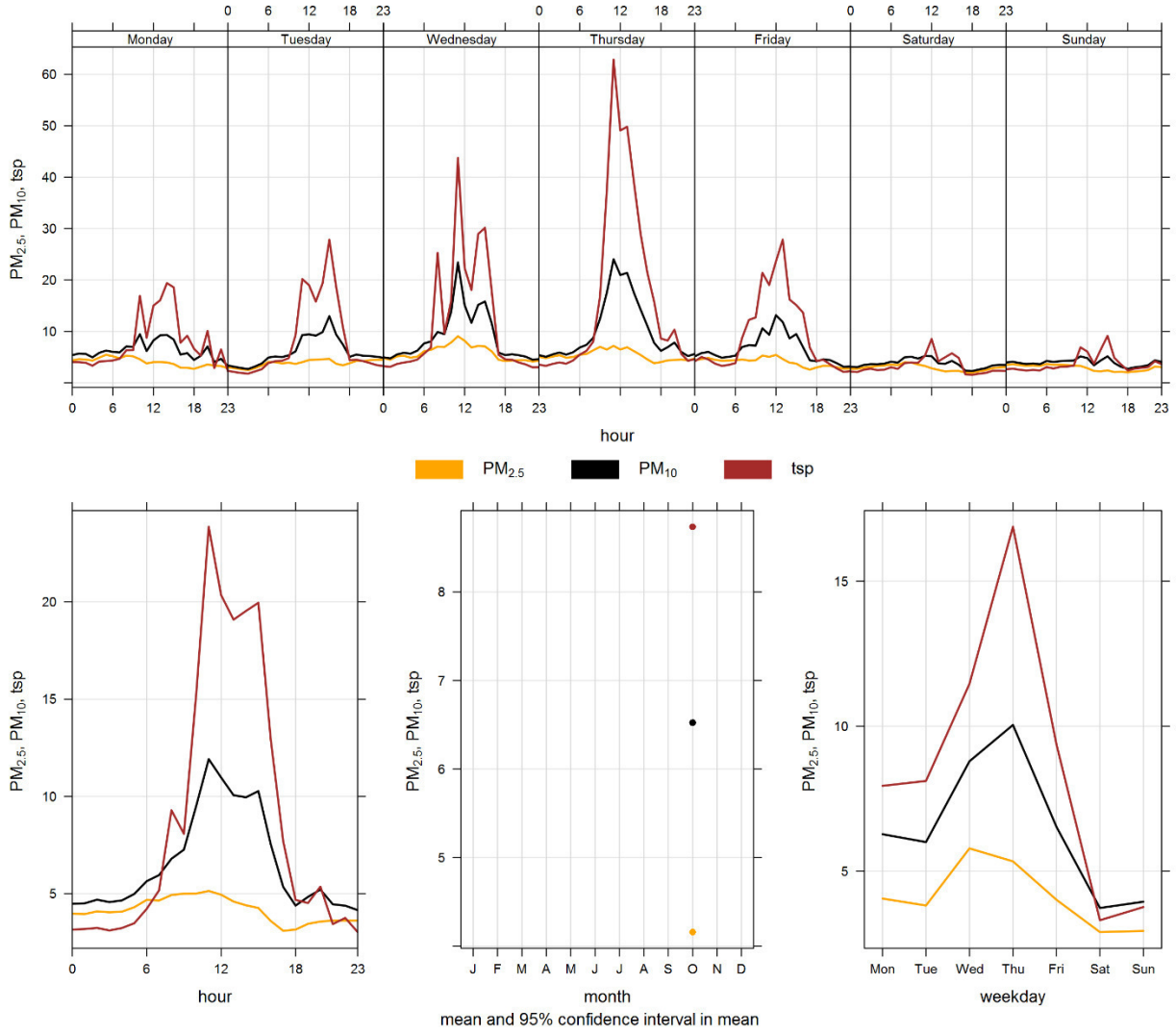

Figure 5-3 West particulate matter time variation

6 BERM INDUSTRIAL GRIMM

6.1 SITE VISIT NOTES

During the month of October, the Berm GRIMM had 99.6% uptime due to 3 hours of instrument error.

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. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

In October, there were 11 and zero exceedances of the 24-hour TSP (30 µg/m^3) and $PM_{2.5}$ (100 µg/m^3) guidelines, respectively. There were 3 hours exceeding the1-hour PM2.5 guideline (80 µg/m^3). 2 of those hours occurred on October 27th when burning was reported in the Exshaw area. Historically during the month of October, the Berm monitor records an average of 15 and zero exceedances of the 24-hour TSP and $PM_{2.5}$ guidelines respectively. The maximum number of TSP exceedances recorded during October occurred in 2014 where there were 21 days that exceeded the guideline. The minimum number of TSP exceedances was recorded during October 2016, which had 9 days that exceeded the guideline. The maximum number of $PM_{2.5}$ exceedances occurred in October 2012 where 1 day of exceedance was observed.

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.

Table 6-2 Summary of October 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	
$PM_{2.5}$ ($\mu g/m^3$)	80	30	Berm	3	0	8.3	86.3	27	9	31.6	250.5	22.6	25	99.6
PM_{10} ($\mu g/m^3$)	-	-	Berm	-	-	42.8	763.2	27	8	33.7	253.4	171.6	27	99.6
TSP ($\mu g/m^3$)	-	100	Berm	-	11	109.6	1864.0	27	8	33.7	253.4	502.4	25	99.6

Table 6-3 Days exceeding the Guideline for TSP or $PM_{2.5}$ at the Berm Monitor

Date	TSP (ug/m^3)	$PM_{2.5}$ (ug/m^3)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Berm						
10/11/2018	126.9	-	258.0	21.8	56.0	high wind event
10/12/2018	241.9	-	256.9	25.3	55.5	high wind event
10/17/2018	162.3	-	290.0	21.9	39.8	high wind event
10/20/2018	286.4	-	266.8	22.6	36.6	high wind event
10/24/2018	117.2	-	266.8	20.4	46.1	high wind event
10/25/2018	502.4	-	255.5	24.6	42.4	high wind event
10/26/2018	131.8	-	266.1	20.2	59.9	high wind event
10/27/2018	422.9	-	255.8	26.6	36.9	high wind event; burning
10/29/2018	117.6	-	250.4	18.9	41.4	
10/30/2018	297.2	-	253.8	21.0	44.1	high wind event
10/31/2018	429.4	-	254.4	22.5	44.9	high wind event
Total # of Exceedances	11	0				
Maximum # of Exceedances (October)	21 (2014)	1 (2012)				
Average # of Exceedances (October)	15	0				
Minimum # of Exceedances (October)	9 (2016)	0 (2010, 2011, 2013 ~ 2017)				

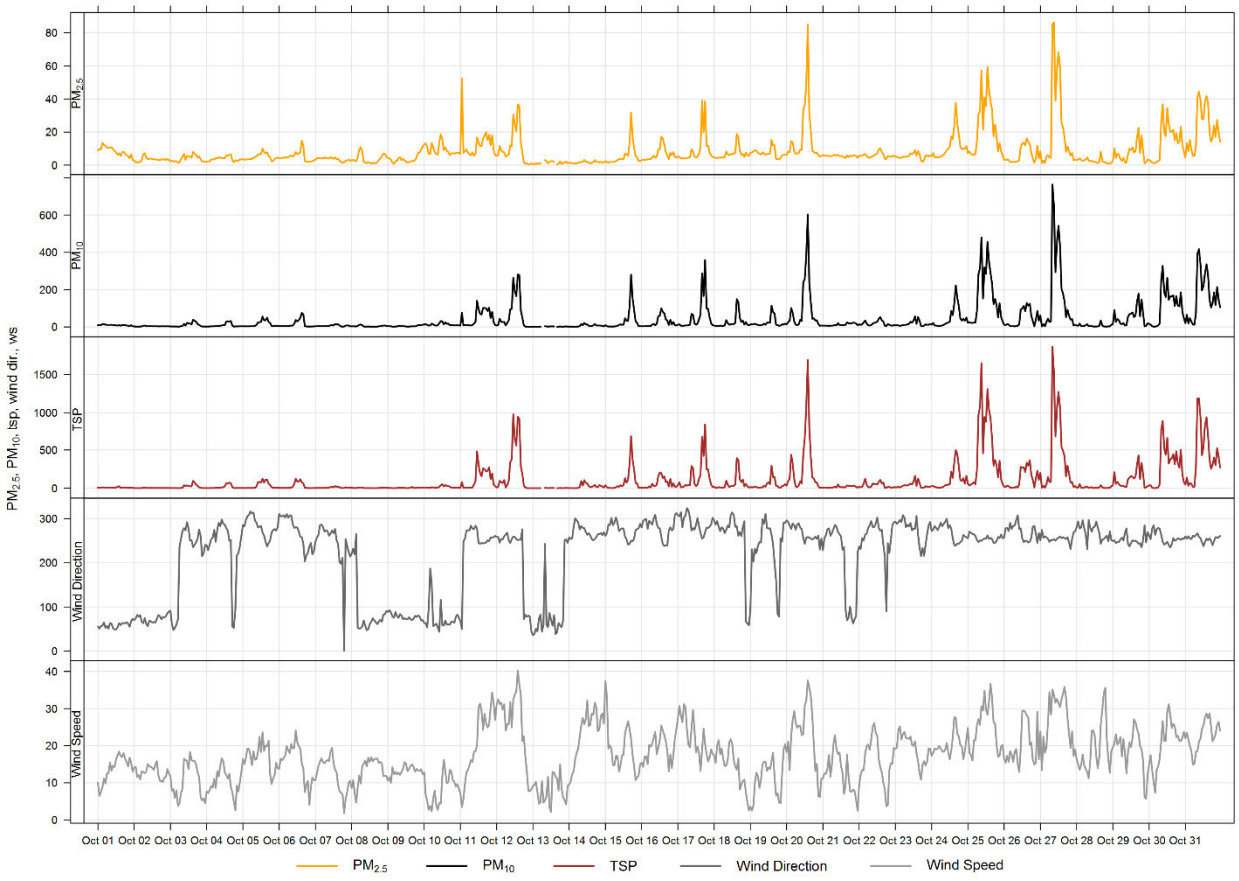

Figure 6-1 1-hour particulate matter concentrations recorded at the Berm monitor

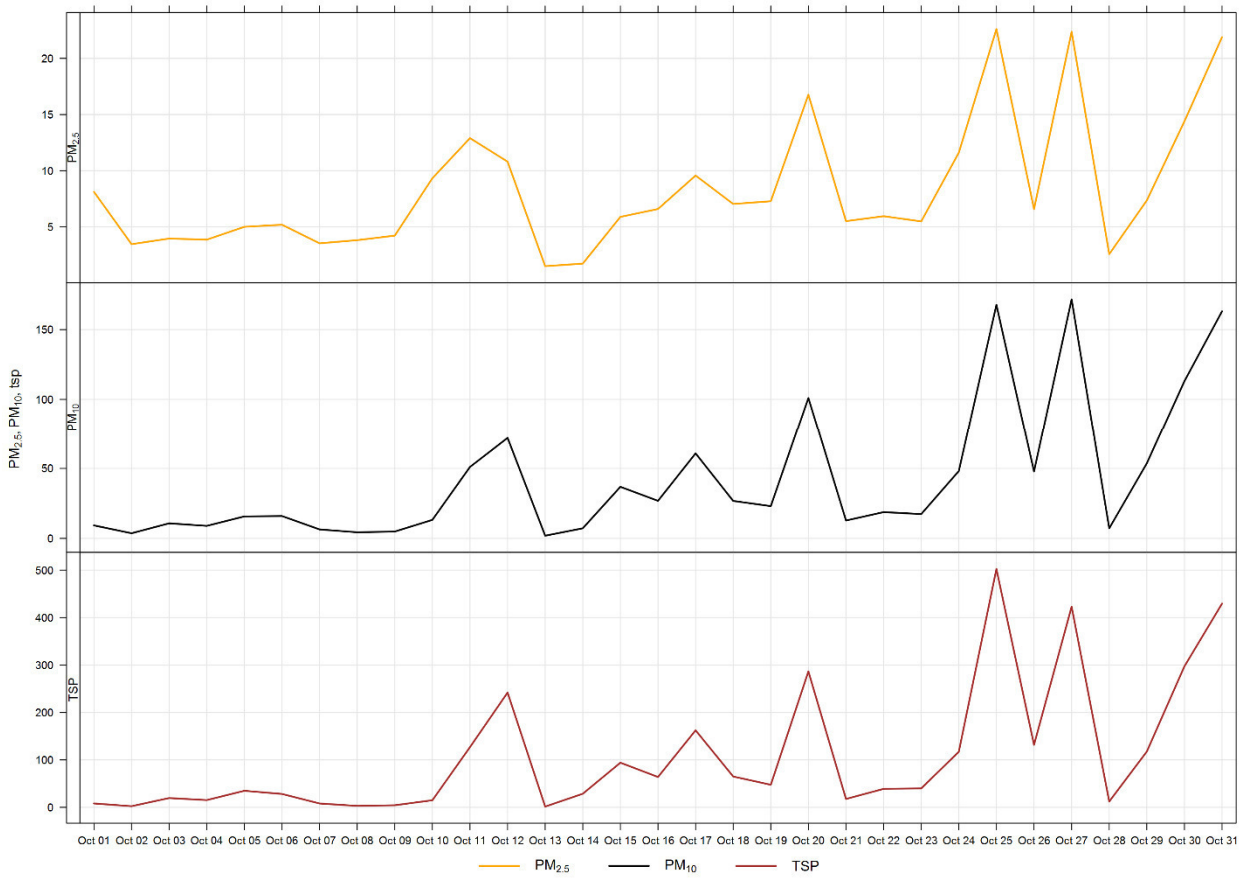

Figure 6-2 24-hour particulate matter concentrations recorded at the Berm monitor

Figure 6-3 shows the wind roses for the 11 days of TSP exceedances. The wind rose shows that the winds predominantly came from the west and west-southwest directions, and were over 20 km/kr.

Figure 6-4 shows the variation of PM recorded at the Berm monitor over various time averaging periods. The Berm monitor diurnal pattern is similar to the Windridge and Lagoon stations, is associated with Lafarge operations, but also daytime emissions from traffic and other activities in Exshaw.

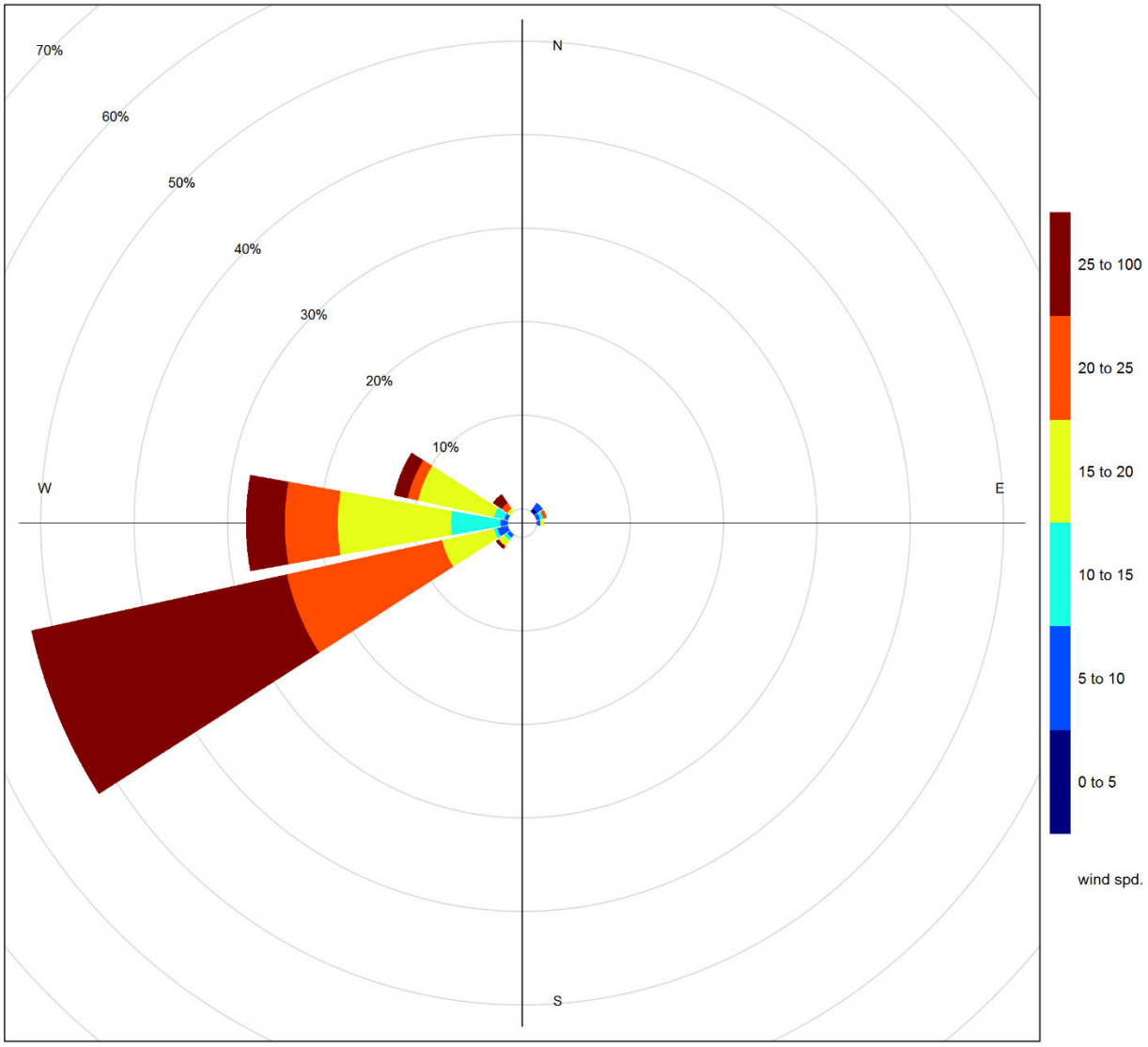

Figure 6-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM

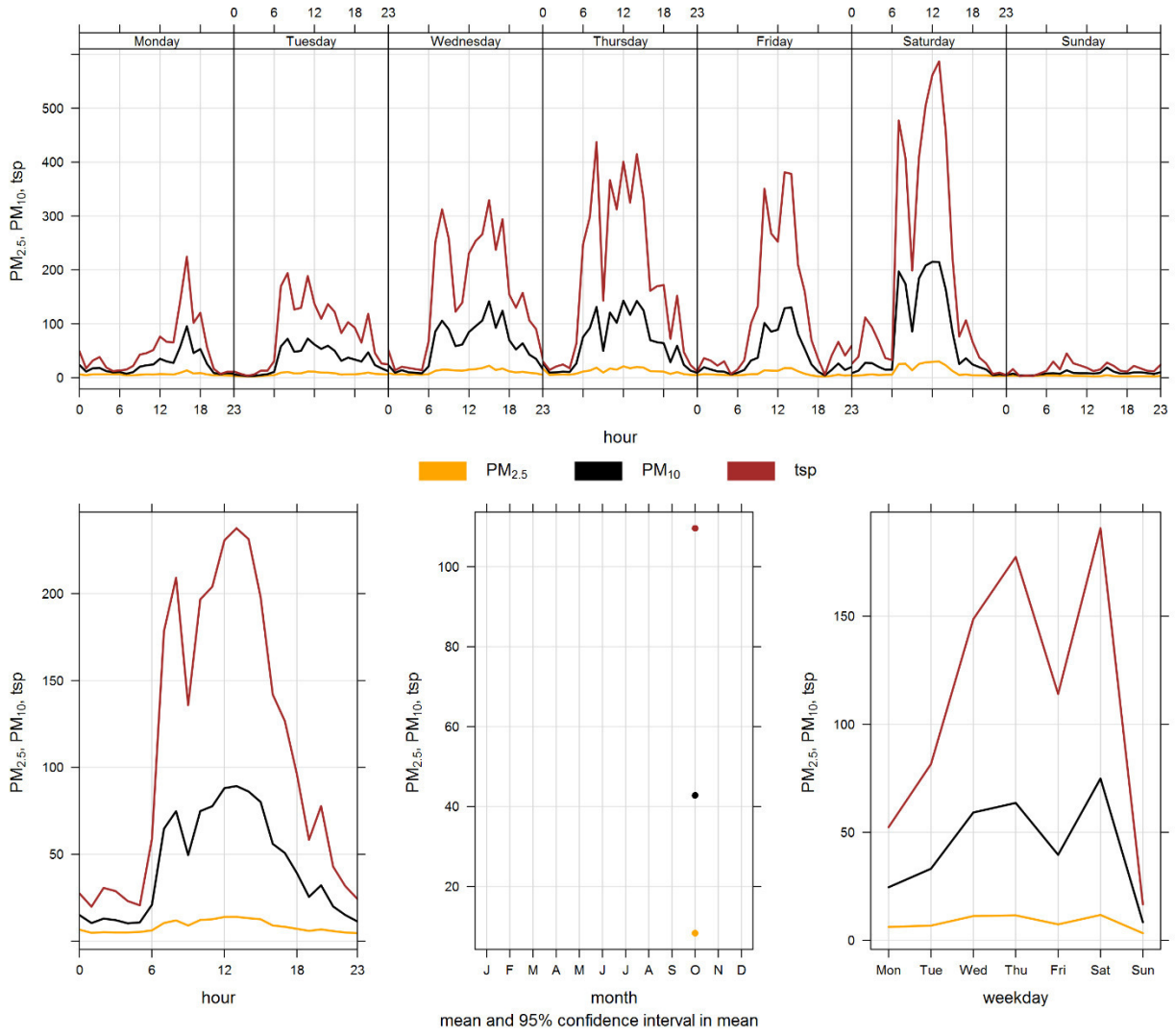

Figure 6-4 Berm particulate matter time variation

7 ENTRANCE INDUSTRIAL 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 October, 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. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

During October, there were 19 and zero exceedances of the 24-hour TSP (100 µg/m^3) and $PM_{2.5}$ (30 µg/m^3) guidelines, respectively. Historically, the Entrance monitor records an average of 15 and zero exceedances of the 24-hour TSP and $PM_{2.5}$ guidelines respectively, during the month of October. The maximum number of TSP exceedances recorded during October occurred in 2014, which had 26 days that exceeded the guideline. The minimum number of TSP exceedances recorded during October occurred in 2011, which had 5 days that exceeded the guideline. On the other hand, the maximum number of $PM_{2.5}$ exceedances recorded during the month of October was 2 days of exceedances in 2010 and 2012. The fewest number of $PM_{2.5}$ exceedances for October was 0 days of exceedances occurring in 2011, and 2013 to 2016.

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 high wind events. Trucks also pass near to the Entrance monitor as they enter and exit the Lafarge facility for loading and deliveries. 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. The CPR rail crossing is in disrepair and may be contributing to PM concentrations at the Entrance monitor. Lafarge has been informed the crossing is scheduled to be repaired in the spring of 2019.

Figure 7-3 shows the wind roses for the 19 days that exceeded the TSP Guideline at the Entrance GRIMM. High wind speeds were a primary factor in TSP exceedances in October at the Entrance station. On those days without high wind speeds other sources, such as industry, traffic and rail may have contributed to the exceedances.

Table 7-2 Summary of October 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	11.7	48.0	18	8	16.1	284.4	23.7	22	100.0
PM_{10} ($\mu g/m^3$)	-	-	Entrance	-	-	59.9	473.1	18	8	16.1	284.4	158.2	23	100.0
TSP ($\mu g/m^3$)	-	100	Entrance	-	19	147.3	1441.7	11	10	20.1	278.2	385.0	23	100.0

Table 7-3 Days exceeding the Guideline for TSP or $PM_{2.5}$ 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						
10/5/2018	100.6	-	281.6	16.8	63.8	
10/10/2018	205.6	-	67.2	8.0	79.3	
10/11/2018	243.8	-	258.0	21.8	56.0	high wind event
10/12/2018	233.8	-	256.9	25.3	55.5	high wind event
10/14/2018	127.2	-	268.2	24.5	50.5	high wind event
10/15/2018	164.6	-	271.4	18.2	40.3	
10/16/2018	256.5	-	282.1	19.9	43.0	
10/17/2018	316.3	-	290.0	21.9	39.8	high wind event
10/18/2018	323.5	-	286.7	14.0	42.3	
10/19/2018	238.5	-	266.1	11.9	58.8	
10/20/2018	250.0	-	266.8	22.6	36.6	high wind event
10/21/2018	117.1	-	270.9	12.6	48.5	
10/22/2018	328.1	-	274.0	16.1	48.3	
10/23/2018	385.0	-	279.1	19.2	38.9	

10/24/2018	271.4	-	266.8	20.4	46.1	high wind event
10/25/2018	199.7	-	255.5	24.6	42.4	high wind event
10/26/2018	132.7	-	266.1	20.2	59.9	high wind event
10/30/2018	102.6	-	253.8	21.0	44.1	high wind event
10/31/2018	105.0	-	254.4	22.5	44.9	high wind event
Total # of Exceedances	19	0				
Maximum # of Exceedances (October)	26 (2014)	2 (2010, 2012)				
Average # of Exceedances (October)	15	0				
Minimum # of Exceedances (October)	5 (2011)	0 (2011, 2013 ~ 2016)				

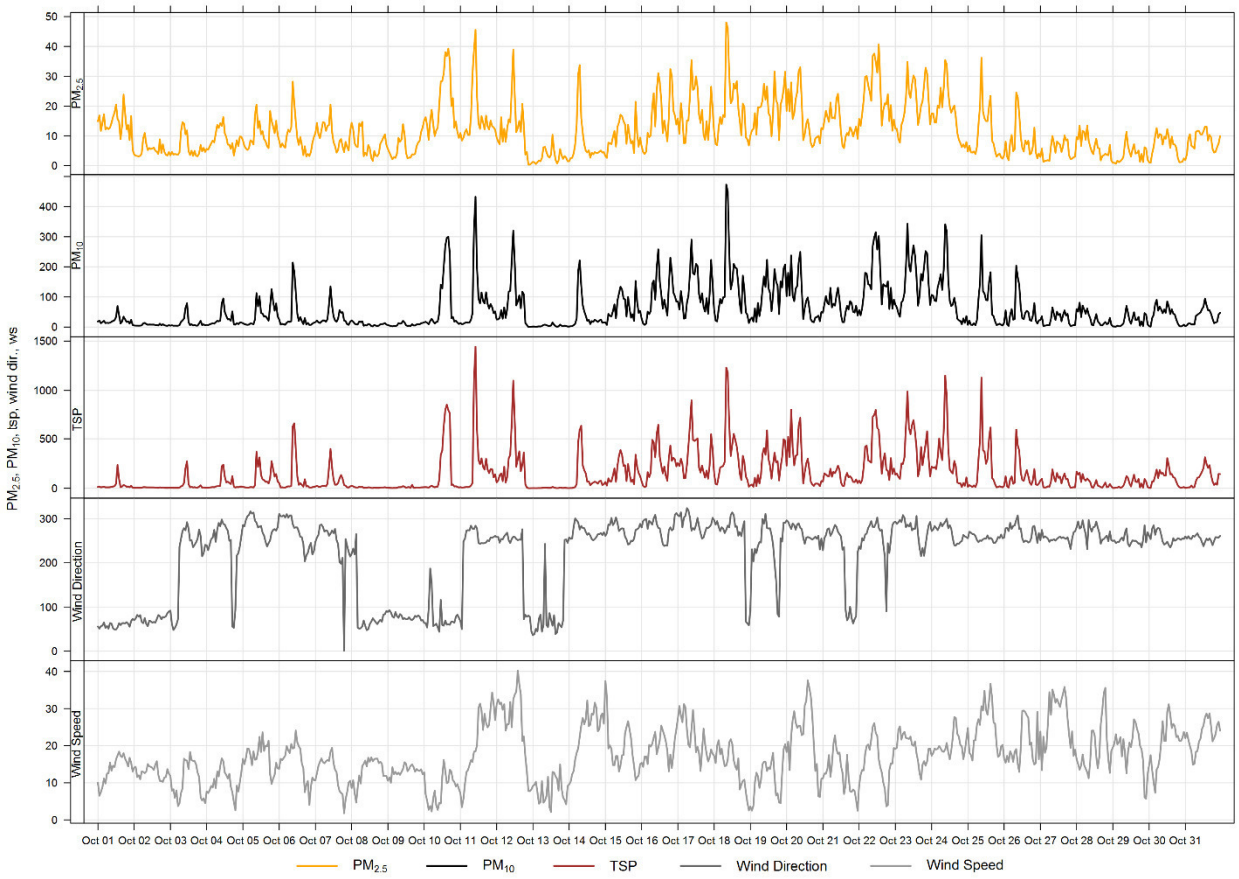

Figure 7-1 1-hour particulate matter concentrations recorded at the Entrance monitor

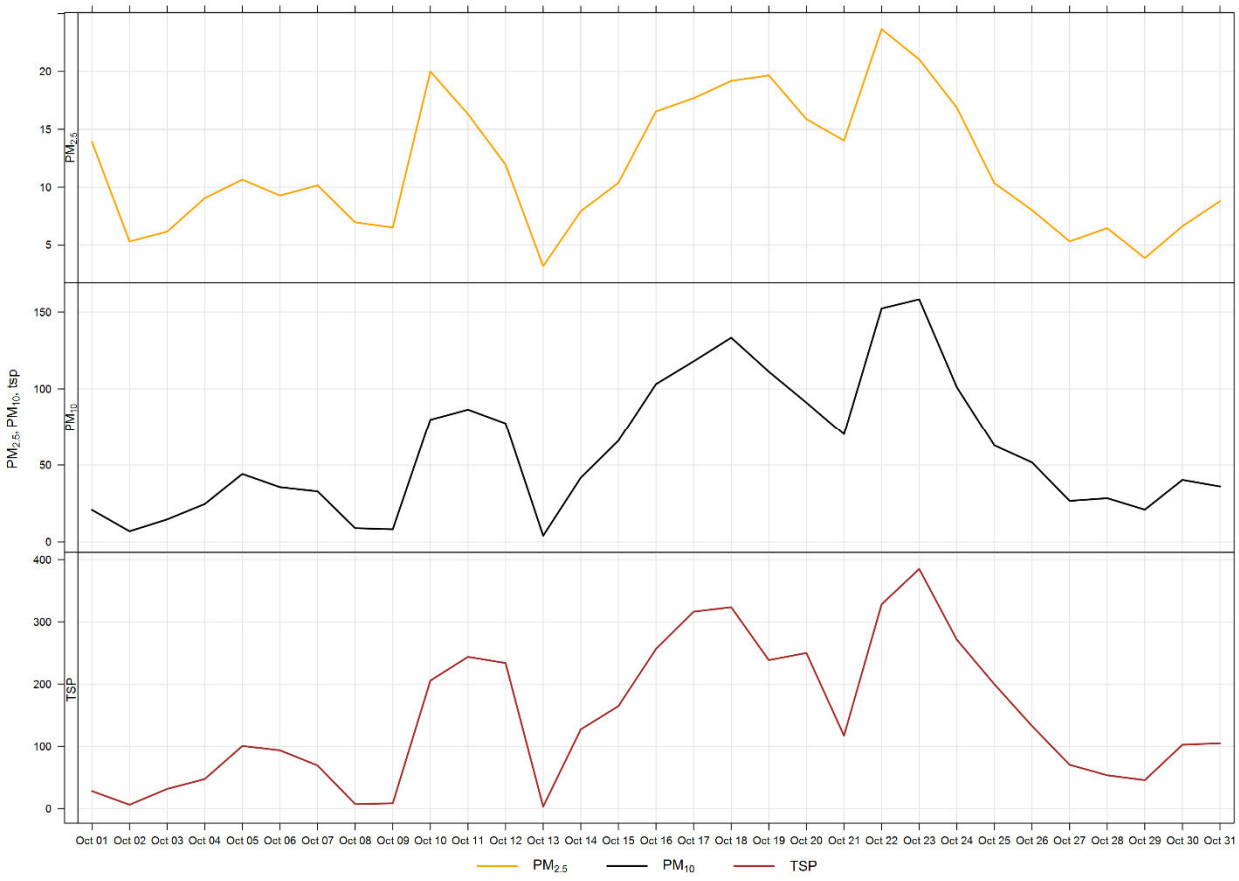

Figure 7-2 24-hour particulate matter concentrations at the Entrance monitor

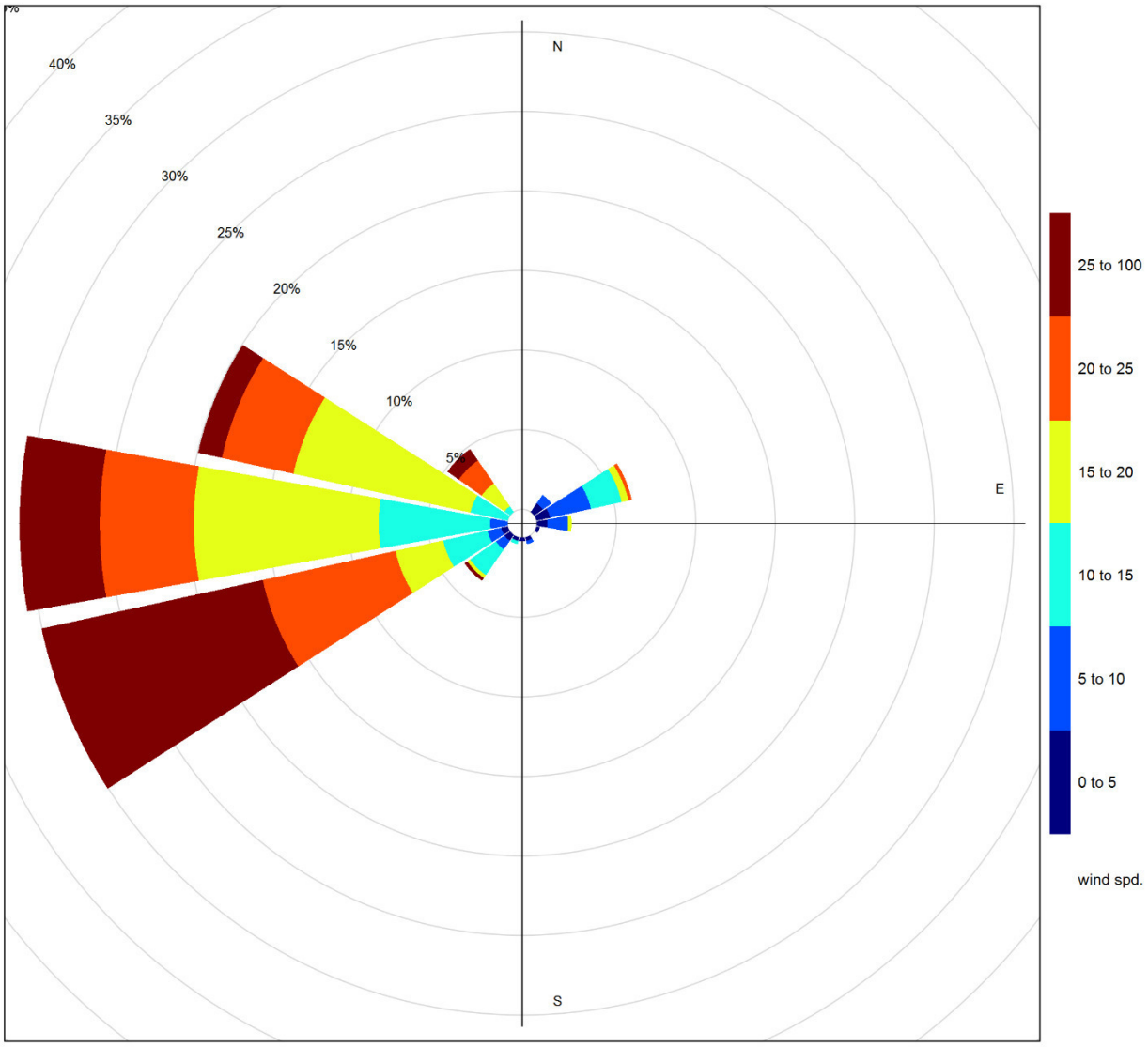

Figure 7-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

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 October 2018 and shows a peak in the morning hours when traffic emissions likely influence the PM concentrations at the Entrance monitor which is located near Highway 1 and the entrance to Lafarge.

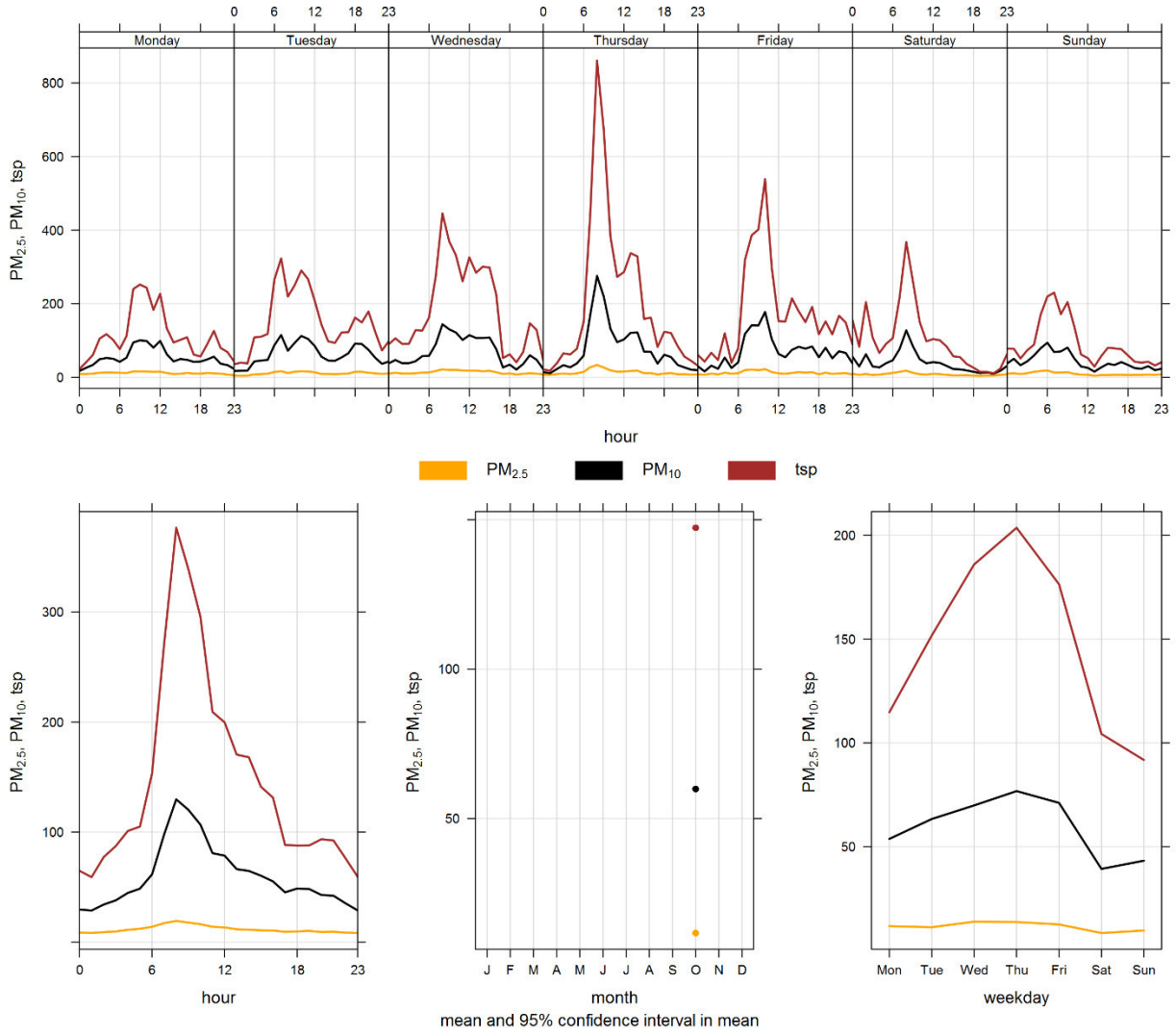

Figure 7-4 Entrance particulate matter time variation

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- Levelton Consultants Ltd. (2015, June 15). Comparison of GRIMM and E-BAM Data. Alberta, Canada.

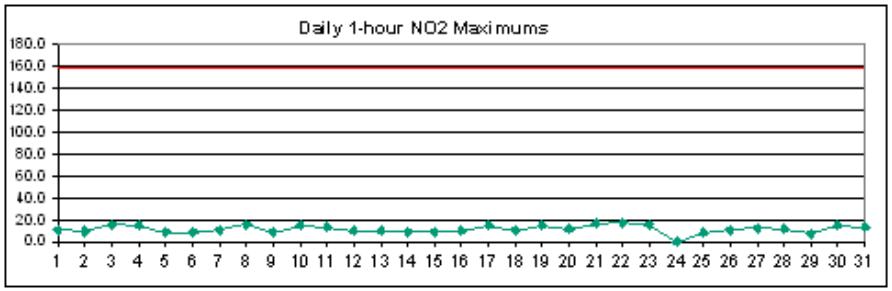
APPENDIX

A DATA & CALIBRATION REPORTS

APPENDIX

Lagoon NO_2 (ppb) – October 2018

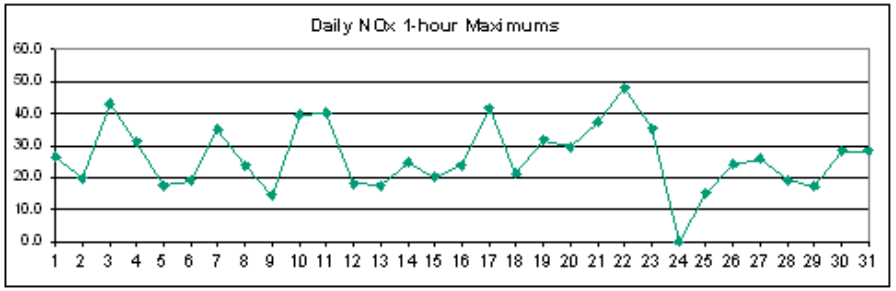
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	6.3	$	7.7	4.5	3.4	1.6	4.4	10.5	8.1	6.5	2.6	2.2	6.8	4.9	6.1	8.2	10.4	8.1	4.3	10.3	5.4	11.3	2.8	0.1	5.9	11.3
2	0.7	$	0.6	2.3	4.0	8.4	3.5	7.0	5.1	9.7	5.0	6.4	6.1	9.8	5.1	2.9	6.7	6.6	6.1	4.8	1.6	0.8	0.7	0.2	4.5	9.8
3	3.8	$	6.4	3.9	8.7	7.5	15.6	16.2	7.1	3.8	1.8	5.4	2.4	2.2	0.2	0.5	1.5	2.3	3.2	6.3	4.7	4.2	11.0	4.1	5.3	16.2
4	5.3	$	5.3	5.6	5.2	5.4	3.3	5.4	4.2	1.7	2.0	2.9	1.0	1.7	1.1	0.8	12.2	9.1	15.5	14.5	9.2	4.6	5.2	3.4	5.4	15.5
5	2.9	$	2.9	1.8	2.6	7.1	2.8	5.2	6.0	4.0	3.1	2.9	4.4	2.2	0.3	0.0	0.0	2.7	2.7	2.6	9.0	4.4	2.3	1.1	3.2	9.0
6	0.8	$	0.7	0.3	0.2	0.4	1.4	0.8	2.4	3.2	2.3	2.7	5.1	1.5	4.5	0.0	0.0	0.3	0.0	7.4	8.9	7.5	8.8	6.0	2.8	8.9
7	8.6	$	6.1	5.1	6.3	10.2	8.4	7.6	4.6	6.5	10.4	8.3	2.2	1.2	0.0	0.0	0.0	1.1	11.1	10.3	6.3	3.4	5.9	5.6	5.6	11.1
8	6.2	$	7.3	15.9	14.5	8.0	10.4	1.6	1.4	2.7	1.9	1.9	0.3	0.4	1.2	6.6	7.6	2.5	4.6	6.4	6.5	3.1	1.9	1.2	5.0	15.9
9	0.5	$	0.5	5.9	0.0	1.2	6.2	2.4	1.1	1.7	0.0	0.3	0.4	0.5	1.6	1.5	1.7	2.7	3.0	2.7	2.5	4.4	6.3	9.0	2.4	9.0
10	9.4	$	6.0	10.6	15.3	10.9	9.9	9.8	5.7	7.6	6.3	7.8	5.3	5.8	7.4	8.8	5.1	1.3	6.4	3.0	1.5	1.2	1.0	1.1	6.4	15.3
11	1.2	$	8.7	7.8	8.0	11.3	10.6	13.8	8.4	5.3	5.3	0.2	0.0	0.0	1.4	0.0	0.0	1.5	4.0	1.3	3.1	3.4	1.0	2.9	4.3	13.8
12	1.8	$	0.2	2.7	2.5	3.6	8.3	9.9	0.4	3.5	4.5	2.9	0.8	0.1	0.4	1.4	5.6	0.0	0.8	0.0	0.0	0.0	0.6	0.3	2.2	9.9
13	2.9	$	0.0	2.2	0.8	1.2	2.7	10.1	8.8	3.4	0.7	5.5	3.3	0.0	0.0	0.0	0.7	0.3	3.1	5.3	2.2	3.1	6.3	6.3	3.0	10.1
14	8.2	$	3.2	2.5	1.8	2.6	9.2	4.6	5.4	4.6	2.6	2.6	2.9	1.2	0.5	0.0	0.0	1.9	4.3	3.5	4.4	2.0	1.9	0.0	3.0	9.2
15	2.1	$	6.2	2.7	4.9	4.0	4.0	3.3	9.1	8.9	8.2	6.2	2.6	2.8	0.0	0.2	4.2	0.5	7.0	5.7	4.7	5.1	1.5	2.3	4.2	9.1
16	5.6	$	1.6	3.6	0.7	2.6	3.7	5.5	3.8	5.9	9.3	7.0	2.4	0.0	0.0	0.0	0.0	4.3	7.5	7.7	9.9	5.3	2.2	2.0	3.9	9.9
17	3.1	$	7.7	1.9	1.3	1.4	3.0	9.7	15.6	13.5	12.7	7.6	4.7	9.8	5.6	6.3	4.9	4.1	8.6	9.0	8.3	10.9	3.9	2.7	6.8	15.6
18	4.1	$	4.2	6.1	6.5	6.5	9.2	10.3	9.3	8.2	8.7	3.3	5.2	10.8	6.5	3.5	10.3	6.7	6.0	7.1	6.6	8.5	6.5	8.7	7.1	10.8
19	7.4	$	12.9	11.9	13.2	11.9	14.5	6.8	6.3	3.5	3.8	6.9	6.1	6.1	1.7	0.2	0.0	4.6	8.0	15.4	10.3	15.1	14.5	9.0	8.3	15.4
20	7.5	$	8.6	11.6	11.9	9.2	9.3	7.9	10.6	11.6	2.3	0.0	3.7	3.4	6.1	2.4	4.3	6.4	6.8	8.6	8.9	7.0	9.0	4.1	7.0	11.9
21	3.1	$	6.5	11.9	15.9	7.5	9.0	9.3	12.4	11.7	11.5	9.2	0.5	0.0	2.7	0.5	1.1	1.4	10.7	3.6	8.0	8.3	13.5	16.8	7.6	16.8
22	17.9	$	13.3	10.9	15.5	8.6	4.8	4.9	6.1	4.0	3.2	1.4	8.1	6.4	12.6	7.2	2.9	8.1	10.7	13.0	9.6	4.6	5.2	6.2	8.0	17.9
23	8.3	$	2.7	2.9	2.5	2.2	7.8	6.0	7.8	6.1	12.8	8.4	13.8	1.3	11.7	3.8	1.6	3.6	6.7	15.7	10.9	6.4	4.9	12.2	7.0	15.7
24	11.1	$	2.2	4.9	4.3	2.2	4.1	3.5	5.4	C	C	C	C	C	C	0.0	1.2	0.2	0.0	15.4	6.1	5.7	5.1	3.7	-	-
25	6.3	$	1.4	3.5	0.8	4.6	3.7	8.6	3.4	4.1	6.4	4.3	7.2	2.6	4.3	5.6	1.6	0.0	0.0	2.3	4.5	3.1	3.7	0.5	3.6	8.6
26	3.8	$	5.0	1.4	7.4	9.1	8.2	6.7	6.4	9.4	7.9	2.7	0.0	1.1	0.5	0.1	1.3	7.4	4.4	3.7	11.4	0.8	4.8	3.7	4.7	11.4
27	4.5	$	1.1	5.8	7.4	0.0	6.1	7.5	7.9	0.2	1.1	1.7	5.0	3.4	2.5	2.1	4.0	7.8	0.9	0.0	0.7	0.0	2.9	12.9	3.7	12.9
28	6.1	$	5.7	2.1	6.0	6.2	11.8	6.0	8.6	4.2	5.3	6.9	6.7	6.0	4.2	2.5	0.6	0.4	1.2	1.8	4.9	6.5	0.0	1.1	4.6	11.8
29	0.3	$	0.8	2.2	4.8	6.8	3.0	6.0	7.8	3.3	0.0	0.5	4.6	0.2	1.8	5.3	0.0	0.0	0.1	1.4	7.9	6.4	6.5	7.6	3.4	7.9
30	8.6	$	4.4	4.7	4.5	4.7	8.4	15.1	3.0	1.3	2.0	2.2	0.0	0.0	0.0	3.5	1.0	3.5	9.2	4.2	4.5	9.4	4.1	1.4	4.3	15.1
31	1.3	$	0.8	1.3	1.1	2.3	13.1	11.3	5.3	4.9	1.6	1.3	2.7	4.5	4.2	5.4	6.3	0.4	0.6	2.6	7.9	6.7	8.0	7.1	4.4	13.1
NO.	31	-	31	31	31	31	31	31	31	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	707	100%
MEAN	5.2	-	4.5	5.2	5.9	5.5	7.1	7.5	6.4	5.5	4.8	4.1	3.8	3.0	3.1	2.6	3.1	3.2	5.1	6.3	6.1	5.3	4.9	4.6		
MAX	17.9	-	13.3	15.9	15.9	11.9	15.6	16.2	15.6	13.5	12.8	9.2	13.8	10.8	12.6	8.8	12.2	9.1	15.5	15.7	11.4	15.1	14.5	16.8		



Number of 1HR Exceedences	0		
Number of Non-Zero Readings	663		
Maximum 1-HR Average	17.9 PPB		
Maximum 24-HR Average	8.3 PPB		
		Opperational Time	744 HRS
Monthly Calibration	6	Opperational Uptime	100.0 %
Standard Deviation	3.8	Monthly Average	4.9 PPB

Lagoon NOx (ppb) – October 2018

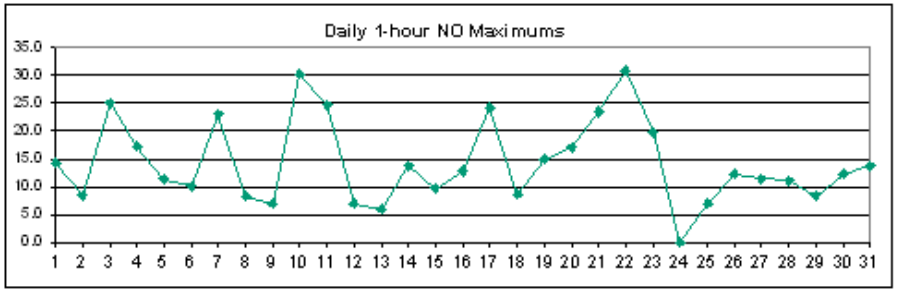
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	9.7	$	15.5	6.2	4.3	2.5	8.3	26.3	21.7	16.9	7.0	5.4	17.0	11.6	18.0	18.5	22.2	14.5	7.2	22.2	10.1	22.2	3.9	0.4	12.7	26.3
2	1.4	$	1.0	3.7	6.0	17.7	5.2	16.5	8.4	18.0	9.1	12.8	13.3	19.9	9.5	4.2	9.5	13.4	9.6	6.3	2.0	1.1	1.1	0.6	8.3	19.9
3	5.4	$	9.3	6.0	9.7	8.3	34.6	42.9	21.4	12.1	7.1	25.8	9.3	6.6	1.8	1.8	3.2	3.5	6.4	9.9	5.1	6.3	18.3	4.8	11.3	42.9
4	5.9	$	6.8	11.1	10.7	9.2	4.4	12.9	12.6	6.3	7.4	10.9	4.1	5.2	3.4	2.4	31.1	14.0	22.0	16.9	9.8	6.0	10.3	6.1	10.0	31.1
5	3.3	$	3.3	2.7	6.0	17.5	6.3	11.1	13.1	11.2	9.0	7.6	17.4	4.9	1.8	0.0	0.0	3.4	3.1	3.7	16.4	7.5	2.6	1.7	6.7	17.5
6	1.4	$	1.4	1.0	0.6	0.7	3.1	2.2	6.1	11.2	9.2	7.4	13.2	4.6	9.7	0.3	0.0	0.9	0.1	19.1	13.4	7.9	10.2	9.1	5.8	19.1
7	17.3	$	11.2	8.8	12.4	24.4	18.0	20.1	11.5	20.9	35.0	26.2	7.6	4.1	0.0	0.0	0.0	1.8	16.7	19.6	7.1	3.9	6.6	6.1	12.1	35.0
8	7.7	$	10.7	23.5	23.8	10.8	17.0	3.1	3.0	10.9	7.3	8.4	3.7	3.4	4.4	16.4	16.1	5.1	8.8	11.9	10.7	3.4	2.2	1.8	9.3	23.8
9	0.7	$	2.8	14.5	0.4	1.9	14.4	4.0	2.8	5.1	2.1	3.2	3.3	2.8	4.3	4.4	3.5	3.5	3.9	3.2	3.0	5.2	7.8	13.6	4.8	14.5
10	11.5	$	9.7	15.4	25.6	24.5	22.2	16.0	12.1	29.8	30.5	39.6	23.3	19.2	18.6	22.5	8.9	1.8	11.4	4.2	1.9	1.5	1.4	1.6	15.4	39.6
11	1.5	$	13.2	12.2	16.3	31.8	29.4	40.2	23.3	15.9	16.8	1.9	0.2	0.5	3.4	0.5	0.4	3.2	6.5	3.1	5.6	6.6	1.8	6.6	10.5	40.2
12	3.3	$	1.0	6.5	4.9	6.5	16.9	18.1	1.8	7.0	9.3	6.2	2.5	1.3	1.9	4.1	10.1	0.6	2.8	0.0	0.0	0.0	2.1	1.7	4.7	18.1
13	10.5	$	0.0	2.7	1.3	2.4	4.0	17.6	15.7	5.9	2.2	10.6	6.3	0.1	0.5	0.1	1.6	0.7	5.9	6.4	3.5	3.7	8.9	11.3	5.3	17.6
14	14.9	$	4.2	4.6	4.4	7.2	24.6	11.5	14.0	13.2	6.3	6.0	7.2	3.1	2.0	0.7	1.1	4.8	7.2	7.8	8.5	3.4	4.0	0.0	7.0	24.6
15	4.4	$	11.2	5.5	10.0	6.9	10.2	5.8	19.2	20.2	19.3	13.9	5.2	7.5	0.0	1.7	9.3	1.0	10.6	10.2	6.8	9.1	3.0	4.5	8.5	20.2
16	11.3	$	2.6	5.8	2.5	5.3	6.7	9.5	6.4	13.3	23.8	15.8	4.9	0.8	0.8	0.4	0.2	5.5	10.9	10.2	18.0	8.7	2.7	2.5	7.3	23.8
17	7.1	$	17.7	3.0	1.8	2.2	5.1	21.5	41.5	38.9	33.9	24.2	11.1	20.1	9.6	11.0	7.7	4.8	11.3	13.8	11.8	19.3	9.9	3.9	14.4	41.5
18	5.8	$	8.0	11.4	13.0	12.2	14.1	15.4	14.6	17.5	14.3	5.2	10.2	21.1	10.1	5.2	16.8	7.3	8.7	9.5	7.3	9.1	7.3	10.1	11.1	21.1
19	7.8	$	15.2	12.8	21.1	15.1	24.4	9.8	9.7	7.1	9.4	15.1	11.3	11.0	4.1	1.1	0.0	5.0	8.6	22.8	12.1	31.7	28.2	17.1	13.1	31.7
20	15.4	$	17.3	26.3	29.7	21.6	28.0	18.3	25.7	26.4	5.4	0.1	9.0	7.0	12.5	5.5	7.2	8.0	11.4	13.8	9.8	7.4	14.2	5.3	14.1	29.7
21	4.1	$	10.8	28.2	34.4	14.8	19.2	19.7	37.4	29.8	31.5	22.8	2.2	0.4	4.6	1.3	1.7	1.8	16.6	4.0	10.0	8.7	21.2	20.9	15.0	37.4
22	22.0	$	16.8	18.4	47.9	18.1	7.8	6.9	13.7	9.3	8.2	3.5	18.4	13.1	25.1	13.0	4.7	9.5	11.9	13.6	11.3	6.1	7.4	10.9	13.8	47.9
23	14.6	$	3.4	4.6	4.3	3.4	14.6	9.5	16.7	13.3	30.4	18.1	35.3	3.1	20.6	6.5	2.4	4.5	7.3	25.1	16.5	9.4	6.8	22.5	12.7	35.3
24	25.5	$	3.4	8.6	8.4	3.6	7.8	5.3	8.8	C	C	C	C	C	C	0.1	1.9	0.6	0.3	25.0	13.1	7.8	7.8	6.1	-	-
25	10.3	$	1.9	6.3	1.1	7.8	6.6	13.5	6.6	7.8	14.6	7.8	15.1	5.6	8.9	9.4	3.1	0.0	0.0	2.9	5.7	4.9	5.4	1.0	6.4	15.1
26	6.6	$	8.6	2.6	15.8	16.6	14.6	12.0	10.8	23.0	20.7	7.7	0.9	3.2	1.5	0.9	2.3	17.1	7.3	6.1	24.2	1.3	7.4	6.9	9.5	24.2
27	7.3	$	1.7	15.2	13.1	0.3	9.2	12.3	13.9	0.9	2.7	4.3	11.1	7.5	6.5	4.5	6.7	12.1	1.9	0.0	1.6	0.5	4.7	25.8	7.1	25.8
28	10.5	$	10.3	3.6	10.7	10.5	19.3	9.4	17.3	8.6	11.5	17.1	19.2	12.3	8.9	4.7	1.2	0.8	3.0	2.5	7.7	11.2	0.1	1.9	8.8	19.3
29	0.7	$	2.2	3.2	9.4	9.8	4.8	8.8	14.4	6.0	0.5	1.8	9.6	1.2	3.7	10.0	0.6	0.1	0.5	2.1	11.3	9.5	12.1	17.4	6.1	17.4
30	16.1	$	6.3	9.1	7.9	6.3	16.0	28.3	4.8	2.4	3.6	5.1	0.0	0.2	0.2	7.1	2.4	9.7	22.8	6.2	6.2	15.4	6.7	1.9	8.0	28.3
31	1.9	$	1.5	2.0	1.8	3.2	28.2	21.7	10.2	7.9	2.9	3.2	6.9	9.9	9.5	12.0	13.2	1.1	1.1	5.4	13.2	11.4	13.7	11.0	8.4	28.2
NO.	31	-	31	31	31	31	31	31	31	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	707	100%
MEAN	8.6	-	7.4	9.2	11.6	10.4	14.4	15.2	14.2	13.9	13.0	11.3	10.0	7.0	6.9	5.5	6.1	5.2	7.9	9.9	9.2	8.1	7.7	7.6		
MAX	25.5	-	17.7	28.2	47.9	31.8	34.6	42.9	41.5	38.9	35.0	39.6	35.3	21.1	25.1	22.5	31.1	17.1	22.8	25.1	24.2	31.7	28.2	25.8		



Number of Non-Zero Readings	692		
Maximum 1-HR Average	47.9 PPB		
Maximum 24-HR Average	15.4 PPB		
		Opperational Time	744 HRS
Monthly Calibration	6	Opperational Uptime	100.0 %
Standard Deviation	8.057	Monthly Average	9.6 PPB

Lagoon NO (ppb) – October 2018

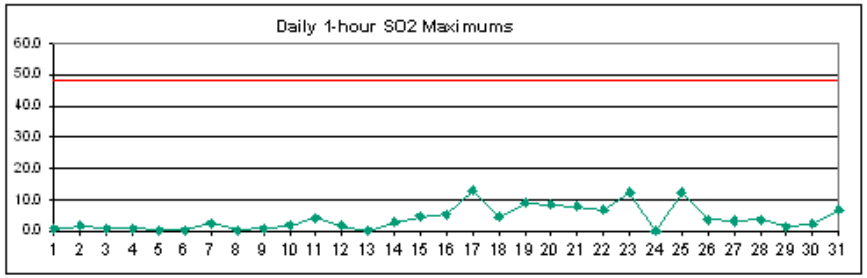
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	1.9	$	6.2	0.1	0.0	0.0	2.4	14.2	12.1	8.7	2.8	1.7	8.6	5.2	10.3	8.7	10.2	4.9	1.3	10.4	3.2	9.4	0.0	0.0	5.3	14.2
2	0.0	$	0.0	0.0	0.6	7.7	0.2	8.0	1.8	6.8	2.6	5.0	5.8	8.5	2.9	0.0	1.3	5.3	2.1	0.0	0.0	0.0	0.0	0.0	2.5	8.5
3	0.0	$	1.3	0.5	0.0	0.0	17.4	25.0	12.7	6.8	3.7	18.8	5.4	2.8	0.2	0.0	0.2	0.0	1.7	2.0	0.0	0.6	5.7	0.0	4.6	25.0
4	0.0	$	0.0	4.0	4.0	2.2	0.0	5.9	6.8	3.0	3.9	6.4	1.6	1.9	0.8	0.2	17.2	3.3	4.9	0.8	0.0	0.0	3.5	1.2	3.1	17.2
5	0.0	$	0.0	0.0	1.8	8.8	1.9	4.3	5.5	5.7	4.4	3.1	11.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	5.9	1.5	0.0	0.0	2.4	11.4
6	0.0	$	0.0	0.0	0.0	0.0	0.2	0.0	2.1	6.4	5.3	3.1	6.6	1.6	3.7	0.0	0.0	0.0	0.0	10.1	3.0	0.0	0.0	1.6	1.9	10.1
7	7.2	$	3.5	2.2	4.7	12.6	8.1	10.9	5.3	12.8	23.0	16.3	3.8	1.3	0.0	0.0	0.0	0.0	4.0	7.7	0.0	0.0	0.0	0.0	5.4	23.0
8	0.0	$	1.9	6.1	7.7	1.3	5.0	0.0	0.0	6.6	3.9	5.0	1.9	1.5	1.7	8.3	6.9	1.1	2.7	3.9	2.6	0.0	0.0	0.0	3.0	8.3
9	0.0	$	0.7	7.0	0.0	0.0	6.6	0.0	0.1	1.8	0.6	1.3	1.3	0.8	1.0	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.1	7.0
10	0.5	$	2.1	3.2	8.6	12.0	10.6	4.6	4.8	20.6	22.6	30.1	16.4	11.8	9.7	12.1	2.2	0.0	3.4	0.0	0.0	0.0	0.0	0.0	7.6	30.1
11	0.0	$	2.9	2.8	6.8	18.8	17.2	24.6	13.3	9.0	9.9	0.1	0.0	0.0	0.5	0.0	0.0	0.1	0.8	0.2	0.9	1.5	0.0	2.1	4.9	24.6
12	0.0	$	0.0	2.2	0.9	1.4	7.0	6.6	0.0	1.9	3.2	1.7	0.2	0.0	0.1	1.2	3.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	1.3	7.0
13	6.0	$	0.0	0.0	0.0	0.0	0.0	5.9	5.3	1.0	0.0	3.5	1.3	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.1	3.5	1.3	6.0
14	5.3	$	0.0	0.5	1.0	2.9	13.8	5.3	7.0	7.1	2.1	1.9	2.7	0.3	0.0	0.0	0.0	1.4	1.4	2.8	2.5	0.0	0.6	0.0	2.5	13.8
15	0.7	$	3.4	1.2	3.5	1.4	4.6	0.9	8.5	9.7	9.4	6.1	1.1	3.2	0.0	0.0	3.6	0.0	2.0	3.0	0.6	2.5	0.0	0.7	2.9	9.7
16	4.1	$	0.0	0.6	0.3	1.1	1.4	2.4	1.0	5.8	12.8	7.2	0.8	0.0	0.0	0.0	0.0	0.0	1.9	1.0	6.5	1.9	0.0	0.0	2.1	12.8
17	2.4	$	8.4	0.0	0.0	0.0	0.5	10.2	24.2	23.6	19.4	14.9	4.9	8.8	2.4	3.2	1.3	0.0	1.2	3.3	2.0	6.9	4.5	0.0	6.2	24.2
18	0.2	$	2.2	3.7	4.8	4.2	3.3	3.6	3.6	7.7	3.9	0.3	3.4	8.7	2.0	0.1	5.0	0.0	1.2	1.0	0.0	0.0	0.0	0.0	2.6	8.7
19	0.0	$	0.6	0.0	6.2	1.6	8.3	1.5	1.8	2.0	4.0	6.6	3.6	3.3	0.9	0.0	0.0	0.0	0.0	5.9	0.3	14.9	12.1	6.5	3.5	14.9
20	6.3	$	7.1	13.0	16.1	10.8	17.0	8.8	13.5	13.1	1.5	0.0	3.7	2.1	4.9	1.5	1.4	0.1	3.0	3.6	0.0	0.0	3.7	0.0	5.7	17.0
21	0.0	$	2.7	14.6	16.7	5.8	8.6	8.8	23.4	16.4	18.2	11.9	0.1	0.0	0.4	0.0	0.0	0.0	4.4	0.0	0.4	0.0	6.1	2.4	6.1	23.4
22	2.4	$	1.9	5.9	30.7	7.9	1.4	0.4	6.1	3.6	3.5	0.6	8.8	5.1	10.9	4.2	0.3	0.0	0.0	0.0	0.2	0.0	0.7	3.1	4.3	30.7
23	4.8	$	0.0	0.1	0.2	0.0	5.2	2.0	7.3	5.6	15.9	8.1	19.8	0.3	7.4	1.2	0.0	0.0	0.0	7.9	4.1	1.5	0.3	8.7	4.4	19.8
24	12.8	$	0.0	2.2	2.4	0.0	2.1	0.2	1.9	C	C	C	C	C	C	0.0	0.0	0.0	0.0	8.2	5.8	0.8	1.4	1.1	-	-
25	2.8	$	0.0	1.6	0.0	1.9	1.7	3.6	2.0	2.4	7.0	2.3	6.7	1.8	3.3	2.6	0.2	0.0	0.0	0.0	0.0	0.6	0.4	0.0	1.8	7.0
26	1.5	$	2.4	0.0	7.2	6.3	5.2	4.1	3.2	12.3	11.4	3.7	0.0	0.8	0.0	0.0	0.0	8.4	1.7	1.1	11.5	0.0	1.3	1.9	3.7	12.3
27	1.5	$	0.0	8.2	4.4	0.0	1.8	3.6	4.7	0.0	0.4	1.4	4.8	2.8	2.7	1.2	1.4	3.1	0.0	0.0	0.0	0.0	0.5	11.5	2.4	11.5
28	3.1	$	3.3	0.2	3.5	3.1	6.2	2.2	7.4	3.1	4.9	8.8	11.1	5.0	3.4	0.9	0.0	0.0	0.6	0.0	1.6	3.5	0.0	0.0	3.1	11.1
29	0.0	$	0.1	0.0	3.3	1.7	0.5	1.5	5.3	1.4	0.0	0.0	3.7	0.0	0.7	3.4	0.0	0.0	0.0	0.0	2.1	1.8	4.3	8.4	1.7	8.4
30	6.2	$	0.6	3.1	2.1	0.4	6.4	11.8	0.5	0.0	0.4	1.6	0.0	0.0	0.0	2.3	0.1	4.9	12.2	0.8	0.4	4.8	1.3	0.0	2.6	12.2
31	0.0	$	0.0	0.0	0.0	0.0	13.7	9.0	3.7	1.8	0.0	0.7	2.8	4.1	3.9	5.3	5.6	0.0	0.0	1.5	4.0	3.4	4.3	2.6	2.9	13.7
NO.	31	-	31	31	31	31	31	31	31	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	707	100%
MEAN	2.2	-	1.7	2.7	4.4	3.7	5.8	6.1	6.3	6.9	6.7	5.7	4.7	2.8	2.5	1.9	1.9	1.0	1.7	2.4	1.9	1.8	1.7	1.9		
MAX	12.8	-	8.4	14.6	30.7	18.8	17.4	25.0	24.2	23.6	23.0	30.1	19.8	11.8	10.9	12.1	17.2	8.4	12.2	10.4	11.5	14.9	12.1	11.5		



Number of Non-Zero Readings	497		
Maximum 1-HR Average	30.7 PPB		
Maximum 24-HR Average	7.6 PPB		
		Opperational Time	744 HRS
Monthly Calibration	6	Opperational Uptime	100.0 %
Standard Deviation	4.737	Monthly Average	3.4 PPB

Lagoon SO_2 (ppb) – October 2018

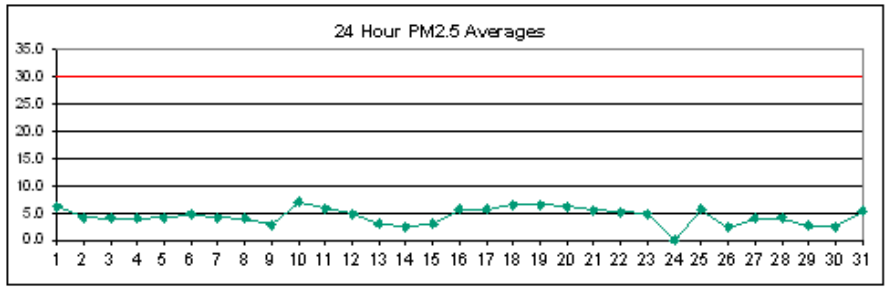
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	0.0	$	0.1	0.0	0.1	0.0	0.0	0.0	0.4	0.4	0.6	0.0	0.0	0.1	0.0	0.3	0.1	0.4	0.1	0.4	0.2	0.8	0.0	0.2	0.2	0.8
2	0.1	$	0.0	0.0	0.0	0.0	0.1	0.6	0.3	1.0	0.9	0.5	0.4	0.3	1.2	1.5	1.7	0.6	0.9	0.6	0.8	0.7	0.5	0.3	0.6	1.7
3	0.0	$	0.1	0.2	0.0	0.0	0.5	0.4	0.9	0.7	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.9
4	0.0	$	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.4	0.0	0.0	0.0	1.0	0.6	0.3	0.0	0.0	0.2	0.0	0.0	0.2	1.0
5	0.1	$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
6	0.0	$	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
7	0.0	$	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	2.6	1.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.6
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	0.2	0.0	0.1	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5
9	0.0	$	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.1	0.9
10	0.0	$	0.0	0.6	1.5	0.4	0.0	0.0	0.0	1.1	1.9	1.7	0.4	0.3	0.3	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9
11	0.0	$	0.0	0.1	0.0	0.0	1.2	1.2	2.9	2.1	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.5	4.2
12	0.0	$	0.0	0.0	0.0	0.2	1.3	0.9	0.1	1.3	1.8	1.5	0.7	0.4	0.0	0.3	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	1.8
13	0.0	$	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
14	0.0	$	0.0	0.0	0.0	0.0	2.8	1.6	2.2	1.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.4	2.8
15	0.0	$	2.7	0.7	0.8	1.2	0.2	0.0	3.0	4.2	4.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.7	1.0	4.7
16	2.3	$	0.3	1.0	0.0	0.1	0.2	0.3	0.0	1.8	5.5	4.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.7	3.6	1.1	0.0	0.0	1.1	5.5
17	0.0	$	4.0	0.0	0.0	0.0	0.0	2.8	8.5	12.4	13.0	5.9	0.8	6.4	2.8	0.2	0.0	0.0	1.8	1.8	1.8	3.7	0.7	0.3	2.9	13.0
18	0.9	$	1.9	3.3	2.3	2.4	1.8	2.3	1.3	2.9	0.3	0.4	2.5	4.5	1.4	0.0	0.3	0.2	0.7	1.5	0.0	0.0	0.0	0.0	1.3	4.5
19	0.0	$	0.0	0.0	1.6	0.0	2.0	0.0	0.0	0.0	0.0	3.1	2.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	9.0	8.2	5.2	1.4	9.0
20	3.4	$	3.2	7.5	8.6	7.7	4.8	4.3	7.3	5.2	1.1	0.0	1.2	1.0	1.3	0.7	0.0	0.0	0.0	0.0	0.3	0.1	0.8	0.0	2.5	8.6
21	0.0	$	1.6	7.5	7.8	2.1	2.0	1.5	3.5	7.0	6.8	5.8	0.2	0.0	1.3	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	2.1	7.8
22	0.0	$	0.3	2.6	6.1	4.6	0.7	0.5	1.2	1.4	1.0	0.0	4.8	4.9	6.9	3.8	0.0	0.0	0.3	0.5	0.1	0.0	0.8	1.5	1.8	6.9
23	1.1	$	0.2	0.6	0.0	0.3	2.6	1.2	4.0	1.7	7.7	5.8	12.5	0.3	6.3	0.7	0.0	0.0	0.4	2.6	2.7	2.4	1.0	5.4	2.6	12.5
24	5.5	$	1.1	2.0	1.4	0.1	0.3	0.5	0.2	C	C	C	C	C	C	0.0	0.2	0.3	0.0	0.1	0.0	0.0	0.0	0.0	-	-
25	0.5	$	0.0	0.1	0.1	0.0	1.4	1.6	1.3	2.0	3.6	1.5	12.5	3.6	2.8	2.3	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.5	12.5
26	0.8	$	0.6	0.6	2.7	3.8	1.9	0.9	1.3	3.7	2.3	0.3	0.3	0.3	0.1	0.0	0.0	0.0	1.4	1.2	1.5	0.0	0.7	1.0	1.1	3.8
27	0.5	$	0.5	0.3	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.7	3.3	1.7	2.4	1.1	0.8	2.8	0.0	0.0	0.0	0.3	0.1	3.2	0.8	3.3
28	1.1	$	2.0	0.6	3.2	1.1	1.0	1.0	1.9	0.9	1.7	3.5	2.7	3.7	1.3	0.0	0.0	0.0	0.0	0.2	0.0	1.1	0.0	0.0	1.2	3.7
29	0.0	$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1	0.0	0.1	0.1	1.4
30	0.1	$	2.3	0.8	0.8	0.1	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.4	2.3	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4	2.3
31	0.0	$	0.0	0.0	0.4	0.0	0.7	0.4	0.3	0.6	0.0	0.0	1.2	3.5	2.3	6.6	6.9	0.1	0.5	0.6	0.2	1.7	4.5	3.3	1.5	6.9
NO.	31	-	31	31	31	31	31	31	31	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	707	100%
MEAN	0.5	-	0.7	0.9	1.2	0.8	0.8	0.7	1.4	1.8	2.0	1.4	1.6	1.1	1.0	0.7	0.4	0.2	0.3	0.4	0.4	0.7	0.6	0.7		
MAX	5.5	-	4.0	7.5	8.6	7.7	4.8	4.3	8.5	12.4	13.0	5.9	12.5	6.4	6.9	6.6	6.9	2.8	1.8	2.7	3.6	9.0	8.2	5.4		



Number of 1HR Exceedences	0		
Number of Non-Zero Readings	378		
Maximum 1-HR Average	13.0 PPB		
Maximum 24-HR Average	2.9 PPB		
		Opperational Time	744 HRS
Monthly Calibration	6	Opperational Uptime	100.0 %
Standard Deviation	1.784	Monthly Average	0.9 PPB

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

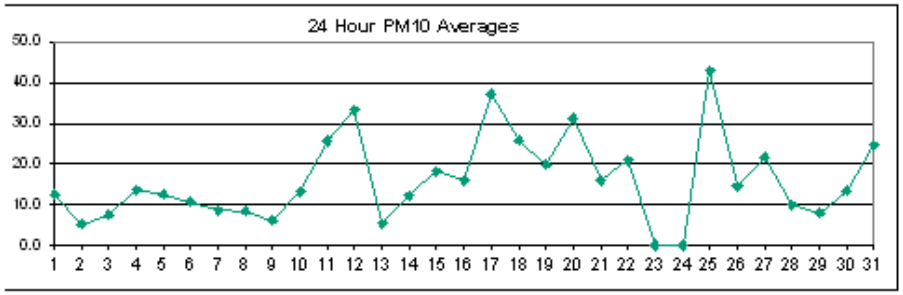
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	3.3	4.0	4.0	3.4	2.6	6.7	6.9	7.6	11.7	8.8	10.4	9.8	7.4	6.6	4.2	7.5	10.0	8.8	6.0	4.1	3.3	3.3	4.7	3.7	6.2	11.7
2	2.3	3.8	4.0	4.0	3.3	2.3	3.3	5.0	5.4	3.1	7.1	8.3	6.3	7.9	6.6	4.8	3.4	1.9	4.6	3.7	3.3	3.3	2.3	2.6	4.3	8.3
3	3.6	4.4	3.4	2.3	3.9	4.4	4.4	4.7	5.1	6.1	6.9	4.9	2.4	0.9	2.5	3.6	3.0	4.0	7.1	4.9	4.0	4.6	4.4	4.0	4.1	7.1
4	4.7	4.1	2.3	3.6	2.3	0.0	2.6	2.8	2.6	4.6	3.0	5.7	4.8	2.4	1.9	2.2	1.9	10.1	7.1	7.9	6.6	4.2	4.7	4.4	4.0	10.1
5	2.7	1.9	2.9	3.0	1.9	2.6	4.3	5.4	3.8	2.0	2.9	4.3	6.1	8.2	6.2	4.5	4.7	3.0	5.7	6.5	5.2	5.4	4.1	3.0	4.2	8.2
6	2.3	5.7	5.8	5.1	6.1	6.3	5.8	4.1	5.2	4.4	3.4	2.8	7.4	6.9	4.5	3.7	3.0	4.7	3.7	4.5	4.1	2.3	7.0	6.2	4.8	7.4
7	4.8	3.0	4.0	5.4	4.8	3.0	3.4	3.7	4.0	7.8	9.7	6.0	4.8	5.8	3.8	0.9	0.8	0.1	3.8	6.8	4.5	3.4	3.3	3.3	4.2	9.7
8	5.7	4.8	3.7	5.4	5.8	6.2	7.5	7.3	3.8	2.6	4.0	3.0	3.6	1.3	0.1	1.8	3.9	3.0	2.3	2.6	4.0	4.7	5.4	3.8	4.0	7.5
9	2.6	2.2	2.9	3.3	5.1	2.7	1.6	3.9	2.7	0.2	0.0	3.8	3.3	0.0	1.8	3.2	1.6	2.2	1.9	3.6	3.3	5.1	6.5	5.3	2.9	6.5
10	5.1	5.8	8.2	5.6	6.8	11.3	7.8	2.8	4.0	5.7	13.7	12.0	13.5	11.3	7.1	5.9	4.5	6.9	5.9	3.4	3.3	4.3	8.5	4.9	7.0	13.7
11	4.1	4.0	2.9	7.4	9.0	7.0	6.9	7.9	9.3	11.8	8.5	4.9	2.7	0.9	2.2	3.3	3.3	4.0	8.8	6.3	6.9	4.9	8.2	6.6	5.9	11.8
12	6.2	6.2	7.5	6.6	6.2	7.5	5.9	3.8	5.2	2.7	5.3	7.6	8.0	7.7	8.3	5.3	4.1	4.7	3.4	1.6	0.5	1.8	0.9	0.0	4.9	8.3
13	1.4	1.2	1.2	2.2	2.6	2.6	5.7	4.8	3.4	3.4	4.0	5.7	4.5	4.7	3.4	2.3	1.9	2.9	4.7	2.4	1.9	2.0	2.6	3.3	3.1	5.7
14	3.3	3.3	2.6	1.2	0.8	2.5	3.3	5.2	3.8	2.3	1.2	0.8	1.8	2.9	3.0	2.1	1.5	1.3	1.2	1.3	2.7	5.7	4.1	3.0	2.5	5.7
15	3.3	0.9	0.0	1.7	2.9	2.3	2.6	2.9	1.6	3.9	5.0	4.4	5.4	6.1	4.8	2.7	1.2	1.2	2.5	5.0	4.8	2.4	2.2	2.2	3.0	6.1
16	3.6	4.3	4.0	5.4	4.1	6.1	6.5	4.7	4.7	8.1	7.6	7.3	7.3	10.6	6.4	6.3	4.5	3.5	4.0	7.1	7.9	7.0	3.5	0.6	5.6	10.6
17	3.5	3.3	3.3	4.5	3.7	4.0	5.1	5.1	6.5	7.6	6.9	6.2	5.5	4.1	2.7	5.3	7.8	5.6	8.5	13.1	8.6	6.0	3.1	4.7	5.6	13.1
18	5.2	4.1	5.4	5.8	4.1	3.0	5.0	7.1	6.2	5.8	6.2	5.8	6.8	7.9	6.6	6.5	6.9	5.2	9.9	8.1	9.7	7.4	10.0	9.1	6.6	10.0
19	10.8	10.5	9.1	7.0	5.5	5.1	5.4	7.8	6.3	4.8	4.1	6.1	6.2	4.1	5.0	5.1	4.1	3.7	4.3	6.1	10.9	8.8	6.7	8.3	6.5	10.9
20	7.7	6.6	5.9	9.9	6.7	8.2	6.3	6.5	6.9	7.2	6.9	4.9	4.4	6.8	5.2	4.4	3.4	4.0	6.2	7.0	5.9	6.2	6.2	5.8	6.2	9.9
21	5.8	5.1	5.1	5.4	5.5	4.8	4.1	3.7	4.0	4.0	6.7	6.9	7.6	4.9	4.1	3.7	3.3	7.7	5.9	7.2	6.9	6.9	5.2	8.2	5.5	8.2
22	7.7	6.6	5.4	5.5	5.5	7.0	4.9	4.1	4.4	4.4	4.7	4.7	3.4	7.4	6.3	7.0	4.9	2.7	3.3	3.7	6.7	6.2	5.2	5.1	5.3	7.7
23	4.1	3.3	3.0	3.3	4.0	4.0	4.7	4.8	5.3	4.1	3.0	5.7	6.5	7.2	4.5	4.1	6.1	4.5	2.4	6.3	10.6	7.1	4.5	4.0	4.9	10.6
24	4.0	6.7	5.5	4.4	4.7	4.7	2.2	2.7	3.6	C	C	C	C	C	C	C	C	10.3	7.4	6.9	9.7	10.5	7.7	10.7	-	-
25	8.1	8.0	11.8	8.1	5.2	3.0	3.0	6.7	6.9	6.2	6.2	5.1	5.1	6.1	6.5	7.2	4.5	1.3	1.8	2.6	5.0	6.1	6.9	4.8	5.7	11.8
26	2.8	2.9	3.3	4.3	3.0	1.4	5.1	4.1	1.3	2.2	2.1	2.2	2.6	3.3	4.3	3.4	2.3	2.2	2.6	2.6	0.9	0.7	0.0	0.0	2.5	5.1
27	0.4	2.8	4.0	4.4	4.7	1.7	2.9	5.7	6.9	4.5	0.3	4.2	6.8	4.5	1.6	3.2	6.7	4.5	6.5	5.5	4.4	2.7	2.1	4.6	4.0	6.9
28	6.1	5.8	7.5	6.6	6.5	6.2	3.8	3.9	3.3	4.0	4.4	4.0	6.8	3.5	0.6	4.6	3.0	0.0	0.0	4.2	4.7	2.0	4.3	4.0	4.2	7.5
29	0.0	1.8	3.2	2.3	1.5	1.2	0.1	0.1	6.3	5.9	3.1	1.6	0.1	0.0	3.8	4.6	4.4	6.5	4.1	1.6	2.5	3.6	3.0	1.6	2.6	6.5
30	0.0	0.7	2.9	2.6	2.9	2.6	1.6	3.6	8.1	5.9	3.4	2.3	1.5	1.5	2.5	2.9	3.0	3.0	3.0	2.3	1.2	0.5	1.1	1.2	2.5	8.1
31	1.8	3.2	5.4	7.2	7.9	7.6	4.5	7.5	9.7	10.1	6.4	3.4	5.2	5.1	4.4	3.0	5.0	4.4	3.4	5.0	4.1	4.0	6.1	5.3	5.4	10.1
NO.	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	31	31	31	31	31	31	31	736	100%
MEAN	4.1	4.2	4.5	4.7	4.5	4.5	4.4	4.8	5.2	5.2	5.2	5.1	5.3	5.0	4.2	4.2	4.0	4.1	4.6	5.0	5.1	4.6	4.7	4.3		
MAX	10.8	10.5	11.8	9.9	9.0	11.3	7.8	7.9	11.7	11.8	13.7	12.0	13.5	11.3	8.3	7.5	10.0	10.3	9.9	13.1	10.9	10.5	10.0	10.7		



Number of 24HR Exceedences	0		
Number of Non-Zero Readings	725		
Maximum 1-HR Average	13.7 UG/M3		
Maximum 24-HR Average	7.0 UG/M3		
		Opperational Time	744 HRS
Monthly Calibration	8	Opperational Uptime	100.0 %
Standard Deviation	2.365	Monthly Average	4.6 UG/M3

Lagoon PM_{10} ($\mu g/m^3$) – October 2018

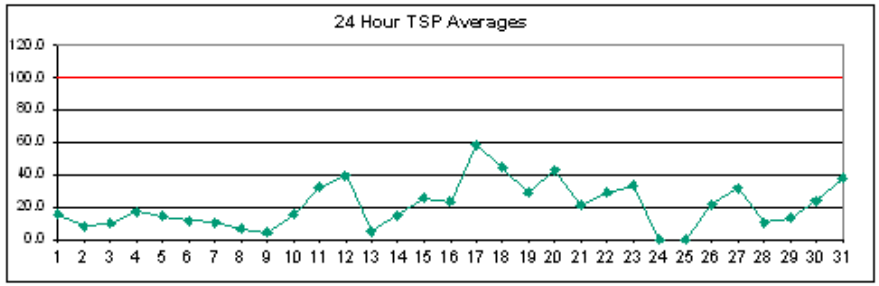
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	0.5	3.2	2.0	7.1	11.3	7.5	4.8	7.2	18.4	10.4	15.9	22.7	13.8	24.5	29.0	16.7	13.6	19.3	13.7	13.5	13.5	10.2	9.4	10.0	12.4	29.0
2	4.9	4.0	3.0	0.7	3.2	2.0	4.5	8.4	6.1	7.3	10.6	8.1	7.4	16.4	11.6	15.3	5.1	2.1	3.0	2.6	0.0	0.0	0.0	0.0	5.3	16.4
3	0.0	1.1	4.5	2.1	1.9	5.8	7.3	8.0	9.3	19.8	16.9	12.9	13.4	10.9	4.9	5.3	7.3	4.8	1.4	3.9	18.9	7.2	6.0	4.7	7.4	19.8
4	5.5	6.0	6.6	7.3	5.4	3.2	6.5	7.3	15.8	16.2	8.4	14.5	16.7	31.1	30.4	22.0	15.8	23.9	13.3	29.0	12.9	13.4	10.2	6.2	13.7	31.1
5	3.4	1.3	4.5	2.7	2.0	3.2	0.0	5.1	12.5	15.4	19.4	27.3	30.3	51.8	35.9	7.2	2.8	4.6	18.9	11.1	10.1	9.4	10.0	10.1	12.5	51.8
6	8.1	6.1	10.5	10.1	0.3	0.0	1.0	3.9	5.6	18.3	27.3	25.1	26.3	39.3	19.8	22.8	6.1	6.0	5.3	0.1	0.0	1.1	5.8	10.5	10.8	39.3
7	13.3	10.3	6.2	3.4	0.7	1.9	3.9	2.7	5.8	11.8	29.6	16.0	22.0	20.3	15.0	8.3	6.1	0.0	0.0	1.7	8.3	6.8	4.7	9.8	8.7	29.6
8	12.0	8.7	8.1	7.4	7.3	9.9	13.3	15.4	2.6	4.5	9.2	9.4	10.0	7.5	0.0	3.1	8.5	9.4	5.5	2.1	25.2	8.2	6.7	7.3	8.4	25.2
9	8.0	5.4	3.3	3.2	2.6	0.7	1.9	9.7	12.6	8.8	9.4	12.5	7.6	3.3	3.3	6.5	6.0	6.6	6.0	7.3	6.1	2.8	5.8	7.9	6.1	12.6
10	10.0	10.7	8.2	6.1	8.6	24.2	11.9	8.8	7.4	8.0	34.6	44.9	24.3	17.1	16.9	16.2	13.6	12.2	8.9	6.8	4.7	4.0	4.6	4.0	13.2	44.9
11	5.3	4.7	6.6	12.5	25.1	19.2	20.8	13.1	25.1	43.1	38.8	85.7	31.1	19.3	19.5	18.9	13.1	21.5	33.9	11.3	39.8	31.0	44.3	33.2	25.7	85.7
12	11.7	19.8	12.5	19.2	9.9	31.4	11.1	24.9	50.8	28.2	70.9	171.9	141.8	48.4	47.8	44.1	29.7	25.2	0.0	0.0	0.0	0.0	0.0	3.1	33.4	171.9
13	4.6	2.7	3.3	0.1	0.0	2.4	3.3	2.6	6.5	9.3	9.4	14.5	5.8	15.7	5.8	6.6	5.4	4.0	4.6	2.7	3.3	5.2	4.0	6.5	5.3	15.7
14	5.7	6.0	8.5	7.4	8.6	8.6	8.1	19.7	15.7	14.8	17.4	27.2	21.2	22.2	18.4	16.3	5.8	6.0	4.7	7.9	14.5	9.6	15.8	5.2	12.3	27.2
15	6.6	10.5	7.5	2.2	3.2	2.0	1.3	4.5	7.9	26.7	37.3	28.2	24.6	74.6	48.1	14.4	13.4	21.8	10.6	12.0	23.1	33.3	13.1	10.8	18.2	74.6
16	6.9	3.5	0.0	0.0	0.0	1.7	5.8	15.0	21.3	19.0	27.9	73.4	50.0	55.1	19.3	18.8	4.7	5.3	20.8	3.5	5.5	17.6	4.7	4.0	16.0	73.4
17	4.0	4.0	6.5	9.3	5.5	4.7	7.2	8.0	20.3	65.3	64.4	35.9	21.6	22.2	38.3	39.2	49.5	56.5	151.5	128.7	57.7	69.6	22.7	3.5	37.3	151.5
18	1.3	3.8	7.2	6.1	8.6	10.6	8.2	7.4	53.1	41.9	22.6	18.4	22.1	19.6	41.4	58.7	60.1	49.7	51.7	41.7	11.0	24.2	30.8	20.8	25.9	60.1
19	19.8	14.1	22.9	21.7	14.5	13.5	8.3	20.1	13.8	16.7	17.5	36.8	29.5	37.4	45.5	24.7	2.4	2.5	7.1	9.9	29.4	21.4	25.3	23.7	19.9	45.5
20	17.8	31.0	26.0	91.3	57.4	27.8	23.1	6.2	17.7	47.2	39.7	39.2	29.5	104.9	67.1	51.4	21.1	11.8	6.3	7.3	12.5	9.6	3.0	3.3	31.3	104.9
21	8.4	10.6	10.7	10.1	9.4	10.0	12.0	15.3	16.1	17.4	18.2	23.3	21.7	15.1	10.9	27.5	38.6	39.8	0.0	2.7	18.7	15.7	10.4	21.0	16.0	39.8
22	22.2	18.4	18.2	15.6	16.8	32.9	13.8	9.6	9.4	24.2	23.0	28.1	25.1	64.1	46.4	49.1	29.5	9.8	3.6	0.0	14.5	14.8	6.5	7.2	21.0	64.1
23	8.0	8.7	9.4	6.8	6.0	9.2	8.1	15.1	26.4	25.7	28.2	34.1	49.2	59.7	26.1	E	E	E	E	E	E	E	E	E	-	-
24	E	E	E	E	E	E	E	E	E	E	E	E	E	E	C	C	C	C	7.9	6.7	5.4	28.1	27.1	30.9	-	-
25	17.4	42.2	35.5	27.1	27.6	25.6	15.2	40.1	81.5	146.8	E	E	E	98.9	83.3	95.5	33.4	5.1	3.3	0.0	23.2	42.5	41.3	17.9	43.0	146.8
26	12.3	12.8	21.9	8.0	4.1	3.2	6.5	11.2	13.4	12.2	26.2	39.3	36.6	16.4	23.3	11.9	10.1	6.2	7.3	12.5	8.2	21.5	14.5	11.6	14.6	39.3
27	12.1	7.6	4.8	11.1	14.7	19.3	11.8	16.6	53.1	32.7	20.3	35.2	42.3	43.2	31.6	38.8	39.2	15.9	25.2	4.1	2.0	4.5	9.8	25.6	21.7	53.1
28	15.9	12.2	8.2	4.8	9.2	12.6	10.2	10.1	9.4	8.7	15.2	13.5	16.8	9.1	15.8	12.3	7.4	0.2	0.0	5.1	11.8	12.1	11.4	8.8	10.0	16.8
29	4.2	3.3	2.6	2.6	0.0	0.0	5.6	8.6	23.6	21.1	11.2	9.4	6.8	9.3	18.5	16.3	14.9	7.0	0.0	0.0	3.1	5.2	6.0	9.2	7.9	23.6
30	17.2	0.7	1.2	2.6	4.6	3.4	3.9	18.9	64.9	23.6	9.9	12.0	33.5	11.2	22.4	0.3	35.5	15.2	16.7	9.7	8.1	2.2	2.6	3.9	13.5	64.9
31	7.8	11.3	19.8	7.3	5.4	6.6	6.7	16.5	57.6	30.4	33.6	16.9	15.5	63.4	51.4	34.6	59.2	33.7	3.3	1.9	21.4	17.7	33.0	38.9	24.7	63.4
NO.	30	30	30	30	30	30	30	30	30	30	29	29	29	30	30	29	29	29	30	30	30	30	30	30	714	97%
MEAN	9.2	9.5	9.7	10.5	9.1	10.1	8.2	12.0	22.8	25.8	24.6	32.3	27.5	34.4	28.3	24.2	19.2	14.7	14.5	11.5	13.8	15.0	13.0	12.0		
MAX	22.2	42.2	35.5	91.3	57.4	32.9	23.1	40.1	81.5	146.8	70.9	171.9	141.8	104.9	83.3	95.5	60.1	56.5	151.5	128.7	57.7	69.6	44.3	38.9		



Number of Non-Zero Readings	687		
Maximum 1-HR Average	171.9 UG/M3		
Maximum 24-HR Average	43.0 UG/M3		
		Opperational Time	718 HRS
Monthly Calibration	4	Opperational Uptime	96.5 %
Standard Deviation	19.41	Monthly Average	17.1 UG/M3

Lagoon TSP (µg/m^3) – October 2018

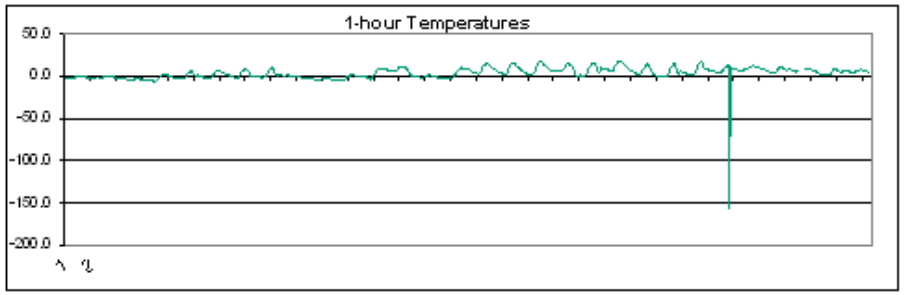
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	3.0	8.3	8.5	8.5	7.2	5.9	9.7	20.5	16.9	14.1	26.0	14.5	23.3	40.9	32.4	17.2	22.1	28.9	19.9	11.6	15.2	8.8	13.8	0.8	15.7	40.9
2	0.2	1.5	1.6	2.9	4.3	8.3	12.5	11.3	5.9	5.8	15.0	11.5	16.6	25.3	15.8	16.5	7.5	8.4	1.9	0.3	2.9	1.5	5.6	9.7	8.0	25.3
3	11.2	9.9	4.6	0.4	1.5	2.9	4.3	9.6	13.9	40.5	23.1	16.9	20.8	3.7	1.6	0.0	4.1	4.3	3.7	12.3	18.7	6.3	11.0	9.9	9.8	40.5
4	5.8	11.1	6.0	0.0	2.8	4.3	13.3	8.6	13.5	12.7	11.3	15.2	27.3	33.2	44.0	23.2	9.1	31.0	30.7	62.4	21.3	12.9	7.3	3.1	17.1	62.4
5	0.0	5.4	3.1	0.0	0.0	0.0	0.2	9.5	19.1	14.3	23.3	25.0	32.3	61.2	39.9	13.7	7.3	5.9	29.6	21.3	9.0	8.4	5.8	9.7	14.3	61.2
6	5.9	5.7	3.1	5.7	3.1	0.0	1.3	4.2	4.3	14.9	26.0	25.1	35.7	46.7	23.3	23.4	0.0	1.4	2.9	5.6	8.4	12.5	12.6	12.6	11.9	46.7
7	5.9	13.7	0.8	3.5	3.0	0.3	4.2	3.0	3.0	13.6	22.0	11.5	33.8	37.4	12.4	4.6	1.7	2.9	8.3	35.0	11.0	7.2	4.5	12.3	10.6	37.4
8	6.1	5.7	5.7	5.7	11.0	11.3	12.6	17.9	3.6	6.9	1.7	0.3	5.4	4.4	3.0	5.5	5.7	13.7	3.4	5.6	13.7	4.8	1.7	2.9	6.6	17.9
9	4.3	8.3	3.2	0.0	0.1	0.0	0.1	9.5	7.2	1.6	4.2	7.0	5.8	3.1	5.5	4.4	3.0	1.6	1.6	9.5	5.8	3.5	5.7	5.8	4.2	9.5
10	7.1	9.8	4.6	0.4	9.5	21.8	11.7	6.0	4.4	18.9	41.9	41.7	39.0	23.0	17.1	32.7	26.8	23.8	6.4	7.1	8.4	5.8	4.4	3.0	15.6	41.9
11	1.6	5.5	9.7	17.8	26.1	21.2	27.5	10.6	31.0	58.4	58.3	128.4	21.7	11.5	20.5	19.6	12.9	29.8	53.1	30.3	51.7	36.8	45.2	39.2	32.0	128.4
12	12.4	21.8	11.6	17.9	11.4	39.0	19.1	28.7	57.0	18.6	103.6	178.1	140.3	61.7	62.2	53.1	42.1	50.9	6.4	4.3	4.3	0.4	0.2	0.2	39.4	178.1
13	5.5	4.4	0.4	2.8	0.3	0.2	5.5	3.1	5.6	8.4	7.2	7.1	4.5	11.0	6.0	11.1	5.9	0.0	6.8	4.5	5.6	5.8	4.4	0.0	4.8	11.1
14	1.3	8.1	12.5	6.1	8.4	8.5	7.2	20.3	14.3	16.7	16.9	35.3	21.6	36.8	20.3	5.0	7.0	7.1	16.4	22.1	22.3	21.0	19.6	7.7	15.1	36.8
15	9.8	13.7	8.7	5.9	7.1	5.7	4.4	3.7	10.9	41.6	47.0	35.3	22.9	93.6	50.7	6.3	12.3	23.2	27.7	31.8	63.7	62.5	20.1	7.6	25.7	93.6
16	5.8	8.4	5.8	5.7	3.8	1.7	5.5	15.0	28.6	20.0	39.3	107.6	57.9	77.9	10.3	13.9	11.4	13.9	28.5	27.9	13.3	29.8	14.8	6.1	23.0	107.6
17	9.7	16.6	15.5	10.1	8.5	7.2	17.7	22.1	30.2	87.4	76.8	37.9	28.2	30.5	39.8	50.8	67.2	82.4	253.4	223.1	118.3	128.0	33.6	12.1	58.6	253.4
18	11.3	8.6	7.2	7.1	5.8	18.9	2.4	17.4	85.4	64.9	29.5	25.2	30.4	37.2	57.3	104.4	89.4	120.3	115.2	83.2	15.7	46.9	56.5	29.1	44.6	120.3
19	35.8	37.4	28.3	25.2	11.7	15.2	16.7	26.0	21.2	14.3	16.7	56.4	41.1	52.2	61.9	13.6	6.0	5.7	37.4	38.9	48.3	27.5	30.4	26.6	28.9	61.9
20	19.9	53.8	46.2	160.5	90.9	31.9	14.7	8.7	15.1	70.8	32.5	45.1	20.7	89.5	92.8	66.3	22.9	14.3	19.3	32.7	30.7	24.0	9.2	17.7	42.9	160.5
21	2.3	12.1	16.5	7.6	3.2	10.9	11.3	15.2	13.8	15.3	16.6	22.1	25.0	4.0	8.2	16.4	69.5	61.5	18.6	33.9	46.6	30.0	25.7	23.4	21.2	69.5
22	30.3	24.5	19.8	30.1	21.4	28.8	12.1	11.3	18.5	30.1	31.9	34.6	26.8	79.2	51.4	55.2	42.3	26.5	25.1	29.0	17.4	18.8	14.3	7.4	28.6	79.2
23	8.4	5.9	16.3	2.3	6.9	15.0	15.4	20.7	38.1	31.0	34.5	51.3	73.8	85.4	16.0	79.9	75.0	37.9	25.6	27.7	45.0	36.6	24.1	23.7	33.2	85.4
24	26.3	18.6	8.9	5.9	5.7	8.4	5.9	5.7	20.2	48.6	45.9	M	M	M	M	M	M	M	M	M	M	M	M	M	-	-
25	M	M	M	M	M	M	M	M	M	C	C	C	C	152.8	107.3	154.2	57.0	9.0	9.8	13.8	41.9	82.8	66.0	21.5	-	-
26	16.9	30.0	35.9	11.0	8.1	8.5	13.8	16.7	18.1	19.5	39.4	61.5	35.9	16.2	28.6	9.4	16.4	10.8	12.6	35.2	8.3	40.2	7.2	13.7	21.4	61.5
27	20.7	8.5	15.1	12.8	17.9	12.9	7.3	20.4	63.3	40.0	17.7	40.6	64.2	71.8	49.5	64.5	59.9	34.5	49.3	14.2	8.7	9.8	16.5	45.9	31.9	71.8
28	24.7	10.5	5.9	3.2	5.6	5.2	15.0	14.1	5.6	12.3	8.7	12.8	15.3	10.1	15.2	10.1	5.6	0.4	4.2	13.6	10.1	7.2	21.7	10.4	10.3	24.7
29	7.2	9.8	4.6	3.0	6.9	7.1	21.7	1.1	28.0	38.5	15.1	4.8	8.3	19.1	22.2	20.8	22.3	13.1	10.0	4.6	11.0	9.9	12.5	19.3	13.4	38.5
30	14.3	2.1	13.5	8.7	4.5	1.7	13.5	33.9	91.7	30.7	23.9	18.4	53.9	18.4	38.0	12.4	61.5	33.2	38.6	24.3	7.8	7.1	8.4	7.2	23.7	91.7
31	17.7	16.8	23.4	6.5	4.4	17.7	19.5	31.5	88.9	39.8	53.4	18.4	26.0	93.8	89.0	50.3	80.3	59.3	10.2	9.8	21.8	14.4	46.8	67.1	37.8	93.8
NO.	30	30	30	30	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	718	97%
MEAN	11.0	13.2	11.6	12.6	10.0	10.7	10.9	14.2	25.9	28.3	30.3	37.6	33.0	44.4	34.7	32.0	28.5	25.2	29.2	29.2	23.6	23.7	18.3	15.2		
MAX	35.8	53.8	46.2	160.5	90.9	39.0	27.5	33.9	91.7	87.4	103.6	178.1	140.3	152.8	107.3	154.2	89.4	120.3	253.4	223.1	118.3	128.0	66.0	67.1		



Number of 24HR Exceedences	0		
Number of Non-Zero Readings	706		
Maximum 1-HR Average	253.4 UG/M3		
Maximum 24-HR Average	58.6 UG/M3		
		Opperational Time	722 HRS
Monthly Calibration	4	Opperational Uptime	97.0 %
Standard Deviation	27.3	Monthly Average	23.0 UG/M3

Lagoon Temperature (°C) – October 2018

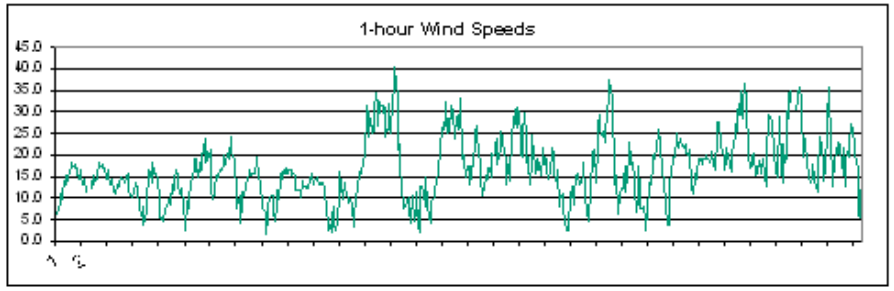
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	-2.0	-2.1	-2.1	-2.1	-2.1	-2.0	-1.9	-1.7	-1.2	-0.8	-0.3	0.3	0.9	0.7	0.7	0.3	-0.5	-1.1	-1.3	-1.4	-1.7	-1.8	-2.2	-2.4	-1.2	0.9
2	-2.7	-2.9	-3.1	-3.2	-3.3	-3.6	-3.5	-3.7	-3.8	-3.6	-3.4	-3.3	-3.2	-3.2	-3.2	-3.2	-3.2	-3.4	-3.5	-3.5	-3.6	-3.7	-3.8	-3.9	-3.4	-2.7
3	-3.9	-4.1	-4.1	-4.5	-5.3	-6.1	-5.9	-5.5	-4.2	-3.0	-1.8	0.0	1.4	2.5	2.9	2.5	2.2	1.8	0.9	0.2	-0.4	-0.7	-1.6	-1.2	-1.6	2.9
4	-1.6	-1.9	-1.9	-1.9	-2.3	-2.6	-2.7	-2.9	-2.8	-1.6	-0.1	1.7	3.6	4.9	5.7	6.3	5.7	3.2	0.0	0.2	0.6	0.9	0.8	0.4	0.5	6.3
5	-0.2	-0.6	-1.2	-1.5	-2.2	-2.8	-3.1	-3.1	-2.1	-0.5	1.1	2.8	4.7	6.2	6.7	6.9	6.7	5.9	4.8	3.9	3.3	2.8	2.4	2.0	1.8	6.9
6	1.2	0.5	0.0	-0.4	-1.0	-1.6	-2.1	-2.2	-1.5	-0.2	1.6	4.0	6.0	7.2	8.2	8.3	7.9	5.7	3.4	0.8	0.3	0.0	-0.1	-0.1	1.9	8.3
7	0.0	-0.3	-0.8	-1.0	-1.2	-1.8	-2.0	-2.3	-1.2	0.0	2.5	4.9	7.3	8.8	9.9	10.2	8.8	5.7	1.7	0.8	1.1	1.4	1.1	0.6	2.3	10.2
8	0.8	0.6	0.6	0.3	1.1	1.2	0.3	0.1	-0.3	-0.7	-0.8	-0.6	-0.2	0.1	-0.1	-0.7	-1.1	-1.6	-2.0	-2.4	-2.6	-2.8	-3.0	-3.0	-0.7	1.2
9	-2.8	-2.7	-2.8	-3.1	-3.2	-3.3	-3.5	-3.9	-3.9	-3.6	-3.4	-2.6	-1.9	-1.6	-1.7	-1.8	-1.9	-2.3	-2.8	-3.2	-3.5	-3.7	-3.8	-3.9	-3.0	-1.6
10	-3.9	-3.8	-3.9	-4.0	-4.0	-4.1	-4.6	-4.7	-4.2	-2.9	-0.5	-0.8	0.2	1.4	1.8	2.1	1.5	0.5	-0.3	-0.5	-0.5	-0.4	-0.4	-0.5	-1.5	2.1
11	-0.7	-0.5	-0.7	-0.9	-1.5	-2.3	-2.9	-3.4	-3.1	-1.4	1.8	4.9	6.6	7.6	8.2	9.0	8.8	8.5	7.9	7.6	7.9	7.7	7.3	7.0	3.5	9.0
12	6.9	7.1	6.3	6.3	6.6	5.7	6.1	7.9	10.3	10.7	10.9	10.4	10.1	10.3	10.4	9.3	8.4	4.5	2.6	1.0	0.2	0.0	-0.2	-0.6	6.3	10.9
13	-0.8	-0.9	-1.0	-1.2	-1.3	-1.2	-1.4	-1.1	-0.9	-0.5	0.5	1.6	0.9	-0.3	0.0	0.3	0.6	-0.3	-1.0	-1.6	-1.9	-2.4	-2.3	-2.7	-0.8	1.6
14	-2.7	-2.5	-2.6	-2.7	-2.8	-2.8	-2.9	-2.8	-2.1	-0.7	1.1	2.6	4.0	5.7	7.8	9.3	9.9	9.5	8.7	8.7	8.3	7.8	7.7	7.9	3.1	9.9
15	7.4	5.8	5.4	5.3	4.4	3.9	3.5	3.0	3.5	5.0	7.0	10.0	12.4	13.9	14.5	14.9	14.6	13.2	11.8	10.4	9.4	9.3	8.6	7.4	8.5	14.9
16	6.3	5.2	4.6	3.6	3.4	3.1	2.7	2.3	2.9	4.8	7.6	10.7	13.1	14.4	15.2	16.1	16.0	13.1	11.7	10.2	9.2	7.9	7.0	5.7	8.2	16.1
17	4.8	4.0	3.4	3.1	3.0	2.6	2.4	2.4	2.7	4.4	7.2	10.1	13.1	15.5	16.9	17.9	18.1	15.8	13.9	12.9	11.9	10.2	9.1	7.8	8.9	18.1
18	7.0	6.6	6.3	6.0	5.9	6.2	5.9	5.8	6.0	6.2	6.8	8.4	9.8	11.4	13.2	15.3	14.2	13.5	12.8	12.6	10.6	6.4	3.2	1.6	8.4	15.3
19	0.2	-0.5	1.1	0.9	0.8	0.5	0.8	1.6	2.7	4.6	7.2	10.3	12.7	14.8	15.6	15.7	14.3	9.9	6.4	4.5	7.0	10.3	9.8	9.6	6.7	15.7
20	9.1	8.4	8.9	8.0	7.3	6.7	6.4	6.5	7.5	10.7	14.0	16.3	17.9	17.8	17.5	17.2	16.3	14.5	13.6	12.6	10.6	8.1	8.9	7.5	11.3	17.9
21	6.4	5.4	4.5	3.8	3.4	2.4	2.2	1.6	2.3	3.7	5.9	8.4	10.3	12.4	14.5	14.0	12.6	9.2	7.0	5.1	2.9	1.1	-0.3	0.4	5.8	14.5
22	0.4	0.0	-0.3	-0.2	0.1	0.0	0.0	-0.2	0.4	2.0	4.6	7.6	10.9	13.5	15.5	15.4	12.3	6.5	3.2	4.5	6.4	6.4	5.3	4.6	5.0	15.5
23	4.0	3.8	3.2	2.9	2.6	2.2	2.0	1.6	2.5	3.8	6.9	9.9	12.5	15.2	16.7	16.7	14.1	10.9	8.8	9.4	9.4	8.4	7.4	7.0	7.6	16.7
24	6.7	6.0	5.7	5.1	4.4	3.8	4.1	4.2	4.5	5.8	7.4	8.5	10.1	12.0	12.4	12.2	-155.8	10.3	9.6	9.1	8.4	8.0	7.8	7.8	0.7	12.4
25	6.8	6.6	6.3	6.4	7.0	7.6	8.7	9.3	9.5	10.5	11.1	11.0	11.7	12.5	11.9	11.8	11.4	11.1	10.4	9.4	8.7	9.3	9.1	8.3	9.4	12.5
26	7.4	7.1	6.5	5.9	4.9	4.4	4.1	3.9	3.8	4.5	6.4	8.2	9.3	10.2	10.5	10.4	9.8	9.2	8.4	7.3	7.8	9.3	9.6	7.0	7.3	10.5
27	5.7	6.1	5.8	5.2	5.9	6.3	5.6	6.1	7.1	7.9	8.7	8.8	8.8	9.0	9.1	8.9	7.9	7.5	7.0	6.7	6.3	5.5	5.0	4.3	6.9	9.1
28	3.3	2.5	2.1	2.6	2.5	2.0	1.9	2.3	3.0	2.4	3.0	4.7	6.1	7.9	8.7	8.0	6.0	6.1	5.6	5.2	6.4	5.4	6.8	7.0	4.6	8.7
29	6.8	6.9	6.7	6.1	5.2	5.1	5.0	4.4	4.3	5.7	6.6	7.0	7.5	7.7	7.9	7.4	6.8	6.4	6.0	5.5	4.6	3.5	4.5	4.5	5.9	7.9
30	4.2	3.5	3.2	2.6	3.3	3.1	3.2	3.6	5.1	5.4	5.8	7.2	6.8	7.3	7.1	7.4	6.5	6.0	5.4	4.7	4.3	4.1	4.2	3.8	4.9	7.4
31	3.8	4.2	4.3	4.2	3.7	3.6	3.1	3.2	3.7	4.3	5.3	6.2	7.2	7.9	7.8	7.7	7.4	6.4	6.0	6.3	6.5	7.0	7.4	7.1	5.6	7.9
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	103%
MEAN	2.5	2.2	1.9	1.7	1.5	1.2	1.0	1.0	1.6	2.7	4.2	5.8	7.1	8.2	8.8	8.9	2.8	6.7	5.4	4.7	4.4	4.0	3.7	3.3		
MAX	9.1	8.4	8.9	8.0	7.3	7.6	8.7	9.3	10.3	10.7	14.0	16.3	17.9	17.8	17.5	17.9	18.1	15.8	13.9	12.9	11.9	10.3	9.8	9.6		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	18.1 C		
Maximum 24-HR Average	11.3 C		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	103.3 %
Standard Deviation	7.848	Monthly Average	4.0 C

Lagoon Wind Speed (km/hr) – October 2018

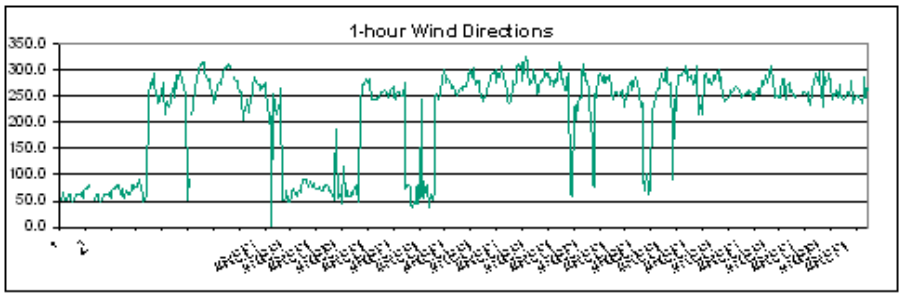
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	6.5	7.5	8.8	11.1	9.8	12.5	12.6	15.5	13.3	14.6	14.3	16.3	17.4	18.4	17.2	16.9	18.0	16.5	15.7	14.4	16.7	15.4	13.0	14.1	14.0	18.4
2	14.3	11.6	12.0	11.0	13.1	12.9	12.6	13.0	15.0	14.4	14.3	14.0	13.5	14.9	15.8	12.2	10.5	10.5	10.3	11.4	11.6	13.7	12.5	11.8	12.8	15.8
3	7.9	8.3	5.9	7.9	3.7	4.5	7.3	8.5	16.5	16.1	16.0	13.7	18.3	16.1	15.9	15.9	14.9	12.8	11.6	6.1	5.2	5.8	4.5	7.7	10.5	18.3
4	7.2	8.0	9.2	8.7	11.1	8.6	13.1	11.7	14.5	16.6	15.8	12.8	12.1	11.2	12.4	9.0	7.4	4.8	2.6	9.2	7.7	10.2	13.0	16.5	10.6	16.6
5	15.0	16.7	19.2	19.1	17.4	14.7	18.4	16.2	16.4	18.4	22.4	18.3	23.6	18.6	20.0	19.8	21.3	12.3	9.7	11.1	12.1	15.4	13.9	13.8	16.8	23.6
6	16.5	16.1	16.7	17.3	19.9	18.8	18.0	20.5	19.2	19.5	24.1	20.9	19.9	19.2	15.3	13.9	7.5	9.5	10.5	4.1	8.9	11.4	10.7	10.7	15.4	24.1
7	12.5	14.6	15.7	16.6	15.6	15.3	15.8	16.2	15.9	18.4	19.4	15.3	13.5	12.9	9.3	7.7	7.3	6.9	1.8	5.6	7.5	10.1	10.5	8.6	12.2	19.4
8	10.7	7.2	4.7	8.7	12.0	9.8	14.5	15.1	16.0	14.4	16.8	15.7	16.8	15.8	16.4	16.5	16.5	15.3	15.6	15.2	11.8	11.9	11.8	10.6	13.3	16.8
9	11.4	10.0	14.2	12.3	13.0	12.3	12.7	12.1	12.9	13.8	15.5	15.1	13.1	13.7	14.6	15.0	14.2	13.0	13.7	13.3	13.2	13.6	12.3	12.8	13.3	15.5
10	6.9	5.1	2.7	3.7	2.3	5.8	7.9	3.9	2.7	4.6	4.4	11.7	16.2	13.2	9.9	10.2	13.5	13.0	10.7	10.2	9.0	9.6	8.3	7.2	8.0	16.2
11	3.4	5.7	9.7	12.9	13.4	14.8	16.1	15.7	18.4	18.5	20.1	30.1	31.3	29.4	24.2	28.6	26.1	24.9	25.6	30.2	34.3	31.4	26.9	31.1	21.8	34.3
12	32.5	31.2	31.6	29.7	31.2	24.1	25.8	25.8	31.8	25.0	32.5	33.8	34.5	40.2	36.6	33.7	21.3	22.4	17.1	13.1	7.8	7.7	8.2	9.2	25.3	40.2
13	9.5	10.3	7.5	4.4	4.8	10.5	4.7	5.2	6.5	11.6	3.4	2.1	12.9	12.8	11.8	11.0	7.9	15.0	8.5	6.0	5.3	4.2	9.2	9.6	8.1	15.0
14	10.3	12.3	13.2	16.3	18.1	19.3	22.5	25.4	27.5	25.8	27.1	32.2	25.3	25.6	28.6	28.3	31.6	30.3	23.9	24.5	28.0	28.7	25.9	37.4	24.5	37.4
15	33.2	19.2	20.0	19.2	14.8	14.7	17.2	17.2	13.0	14.7	17.4	17.5	23.3	25.1	26.6	24.4	21.8	17.4	14.5	10.7	11.5	12.0	15.1	15.4	18.2	33.2
16	14.3	17.0	17.1	15.0	20.2	19.8	20.5	22.2	23.8	17.7	19.4	21.4	25.4	24.1	22.8	21.2	18.6	13.1	17.6	14.0	17.6	21.9	24.5	27.4	19.9	27.4
17	30.7	28.1	26.3	31.2	30.3	24.2	20.2	19.5	24.6	29.6	24.2	18.3	19.7	17.9	13.2	18.7	24.6	20.5	17.7	15.7	16.8	19.0	17.8	17.2	21.9	31.2
18	15.3	20.1	21.5	17.7	19.2	16.6	14.5	14.6	16.1	20.9	21.7	20.5	16.0	14.4	13.5	16.6	8.2	9.5	10.5	10.8	7.4	4.7	2.6	3.6	14.0	21.7
19	2.5	3.8	10.1	12.7	11.7	8.6	10.8	15.0	15.7	15.7	13.2	14.1	13.7	15.8	18.1	11.7	6.6	7.1	4.7	4.5	12.5	19.0	20.4	18.3	11.9	20.4
20	21.1	13.4	22.6	26.9	29.3	26.2	24.8	25.4	25.3	22.8	23.2	30.8	32.1	37.6	35.6	33.3	28.1	20.3	13.2	15.1	6.4	6.2	11.1	11.2	22.6	37.6
21	12.5	12.5	13.8	17.5	11.6	15.0	20.5	22.8	19.0	17.8	18.1	14.5	12.7	7.0	9.4	17.5	11.8	7.7	7.5	8.2	7.8	5.4	2.5	9.3	12.6	22.8
22	12.2	13.5	13.4	17.9	19.9	20.3	18.9	21.7	25.1	26.1	23.5	22.6	16.4	14.2	12.8	10.0	8.4	3.7	4.0	13.4	15.2	15.2	19.4	19.1	16.1	26.1
23	19.5	24.3	25.2	21.7	23.2	23.7	22.1	22.0	21.8	22.4	20.3	20.0	21.1	17.9	15.8	12.6	10.8	14.9	15.8	14.6	15.7	19.2	19.2	17.3	19.2	25.2
24	18.0	19.2	19.0	19.2	19.9	19.2	18.5	18.3	19.0	20.7	18.2	16.3	18.7	22.3	27.7	27.5	23.2	22.4	20.2	19.8	16.4	18.5	21.8	24.8	20.4	27.7
25	18.1	17.5	16.0	21.4	21.5	25.6	27.1	25.6	30.6	29.5	34.8	29.7	28.3	31.9	36.7	32.9	26.2	25.9	20.2	17.0	17.4	19.8	20.2	16.5	24.6	36.7
26	15.4	17.3	15.7	18.5	17.6	15.7	18.4	19.1	15.2	12.9	19.3	29.4	29.5	29.0	28.2	27.5	20.3	20.8	16.3	14.9	15.4	29.1	16.3	23.8	20.2	29.5
27	13.4	22.4	18.1	19.4	26.1	34.4	28.3	35.1	33.7	31.6	32.6	31.5	30.4	32.4	34.1	35.8	32.8	27.4	23.1	19.4	23.8	17.2	18.9	16.4	26.6	35.8
28	15.0	13.6	14.7	17.6	14.8	13.8	12.8	11.2	15.8	24.0	24.1	22.6	17.1	13.9	17.0	25.8	29.6	34.2	35.6	21.7	16.3	12.7	18.6	19.5	19.3	35.6
29	20.6	23.1	20.4	21.0	22.3	17.1	21.8	17.9	12.6	18.2	20.8	19.6	22.1	27.1	26.3	24.5	23.2	19.9	19.0	16.0	6.1	5.7	12.3	14.8	18.9	27.1
30	17.4	13.5	10.1	7.3	13.6	14.4	16.6	21.1	26.6	21.3	21.3	29.1	31.2	28.4	24.8	25.9	25.2	22.3	22.6	21.4	21.2	22.1	23.7	22.0	21.0	31.2
31	23.5	21.6	19.9	18.5	14.9	15.1	18.3	18.6	21.1	21.9	24.5	25.4	27.7	28.7	27.4	28.7	25.2	21.2	22.0	23.1	25.6	26.4	24.0	17.2	22.5	28.7
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	15.1	15.0	15.3	16.2	16.6	16.4	17.2	17.8	18.9	19.3	20.1	20.5	21.1	21.0	20.6	20.4	18.2	16.6	14.9	14.0	14.0	14.9	15.1	16.0		
MAX	33.2	31.2	31.6	31.2	31.2	34.4	28.3	35.1	33.7	31.6	34.8	33.8	34.5	40.2	36.7	35.8	32.8	34.2	35.6	30.2	34.3	31.4	26.9	37.4		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	40.2 KM/HR		
Maximum 24-HR Average	26.6 KM/HR		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	7.392	Monthly Average	17.3 KM/HR

Lagoon Wind Direction (°) – October 2018

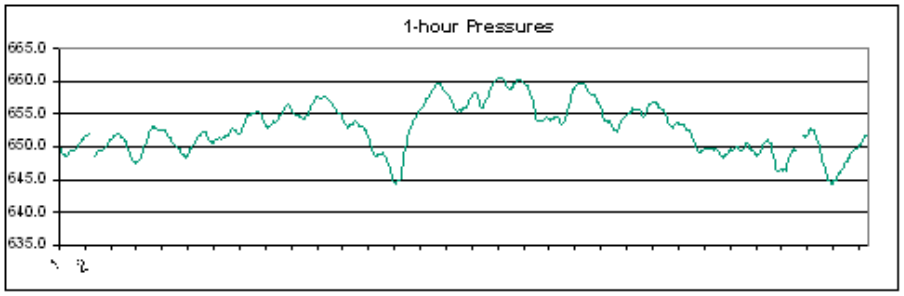
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	51.0	56.6	57.8	64.9	52.6	56.9	50.9	63.4	62.1	51.8	49.0	48.9	53.5	63.2	59.1	63.2	63.4	62.7	65.5	62.1	55.2	67.9	72.9	70.1	59.7	72.9
2	73.8	81.7	78.1	81.4	66.4	63.3	74.6	61.7	56.3	68.6	67.6	64.5	66.0	64.5	72.6	81.5	79.3	72.1	77.1	76.5	78.8	86.0	89.8	91.6	73.3	91.6
3	61.2	47.8	52.6	60.1	72.1	236.0	254.5	272.0	278.7	273.9	292.3	277.9	250.5	251.2	235.5	240.8	246.7	254.6	275.5	261.0	215.0	221.6	240.8	239.8	261.2	292.3
4	228.9	241.5	254.0	257.3	274.6	247.7	275.7	290.5	283.3	298.2	288.3	286.8	278.9	272.8	250.3	252.1	55.6	52.8	93.8	216.8	222.2	238.1	261.7	285.8	269.0	298.2
5	283.2	297.5	305.8	308.7	316.7	311.8	313.9	295.5	291.1	280.4	282.1	283.6	268.8	261.9	247.7	237.3	244.5	251.2	268.6	274.4	276.6	273.1	280.8	311.3	281.6	316.7
6	305.9	305.5	307.8	302.9	310.4	302.8	307.4	307.5	287.9	279.3	280.4	280.1	271.1	258.9	258.1	243.1	203.5	216.9	222.9	237.0	245.1	219.0	226.6	247.6	277.4	310.4
7	257.3	263.5	285.5	286.7	281.3	270.8	273.7	272.1	261.5	266.0	273.1	267.5	276.8	251.8	242.8	201.5	197.9	211.5	0.8	254.0	238.8	225.1	214.3	220.5	259.9	286.7
8	232.3	219.5	265.1	53.1	50.9	51.8	55.8	69.2	57.1	47.3	49.7	61.1	66.7	74.2	69.8	65.0	61.1	66.9	70.7	66.6	82.2	83.7	90.7	88.8	66.3	265.1
9	92.5	87.6	78.4	75.7	88.4	79.2	75.3	83.6	80.7	72.1	74.7	71.9	72.3	76.6	71.6	70.5	73.4	79.8	77.3	80.9	78.1	69.4	70.2	63.7	76.5	92.5
10	63.3	53.3	95.5	187.0	153.0	56.8	58.9	61.9	53.7	43.8	116.0	59.2	57.6	69.3	59.7	60.7	59.5	67.0	66.5	64.2	77.8	82.4	75.4	67.7	67.2	187.0
11	49.9	248.5	254.7	273.1	274.2	273.6	284.3	277.6	276.6	284.2	278.2	245.3	243.1	244.9	244.4	244.8	246.4	251.0	249.4	257.3	257.1	258.7	260.9	258.6	258.0	284.3
12	258.6	245.8	254.3	253.1	260.3	264.5	268.3	250.9	245.0	254.2	259.2	258.8	254.0	251.6	252.6	252.3	276.0	72.4	82.1	77.8	80.4	77.5	44.3	36.0	256.9	276.0
13	38.7	50.5	44.8	73.7	82.1	44.0	59.4	242.9	58.9	54.1	85.9	70.8	57.5	81.2	38.8	42.3	63.5	58.6	53.9	69.6	252.1	253.0	245.5	257.6	52.6	257.6
14	254.4	255.2	282.3	300.8	296.2	291.8	275.8	283.7	279.1	278.7	270.1	263.8	267.1	261.8	253.9	251.1	254.3	258.2	264.9	265.1	267.6	263.1	269.4	261.3	268.2	300.8
15	267.4	286.6	285.8	301.8	285.5	291.2	303.0	290.7	272.1	276.3	278.4	277.7	259.4	253.2	241.6	243.0	250.2	249.0	254.7	274.5	276.4	278.6	288.3	280.3	271.4	303.0
16	295.1	298.1	299.7	277.3	295.3	291.9	286.8	301.0	308.9	288.2	279.5	278.2	259.9	242.4	238.2	240.0	239.5	274.0	280.4	273.6	276.8	309.1	312.7	307.9	282.1	312.7
17	305.6	314.6	280.8	302.5	306.9	324.1	318.9	302.1	273.0	278.7	275.3	286.0	301.8	282.9	267.6	254.9	257.7	269.6	280.1	279.0	282.0	286.8	302.1	296.6	290.0	324.1
18	286.8	294.6	281.9	271.9	280.5	277.6	267.5	274.8	284.4	280.5	308.7	314.2	308.2	281.8	282.9	261.6	269.6	260.5	280.9	294.3	66.7	62.6	58.3	91.7	286.7	314.2
19	230.6	203.3	231.9	222.4	238.4	247.0	246.2	299.5	289.3	311.2	279.1	277.9	278.4	263.6	241.9	200.1	160.9	84.3	77.9	255.8	248.4	291.0	290.8	296.3	266.1	311.2
20	293.2	284.3	276.9	289.3	285.5	275.4	287.0	289.6	279.5	276.5	256.9	243.1	256.9	258.7	257.3	255.3	252.9	255.8	259.2	254.8	261.1	230.5	255.2	228.7	266.8	293.2
21	256.1	262.8	276.2	278.2	261.4	267.5	276.7	286.1	281.4	270.4	264.9	259.8	229.9	235.6	95.0	69.7	76.0	100.7	75.3	62.6	71.9	79.1	223.8	237.1	270.9	286.1
22	231.4	256.1	251.0	264.2	266.6	279.3	285.2	294.6	281.4	281.2	289.1	302.7	279.3	272.8	274.8	241.5	214.2	90.1	244.3	222.5	252.9	285.6	291.7	293.5	274.0	302.7
23	288.3	292.0	297.3	292.4	308.2	302.3	280.8	286.4	282.4	290.5	273.8	277.9	277.1	306.2	264.1	234.8	215.2	233.6	216.0	240.9	265.1	284.8	292.5	272.0	279.1	308.2
24	275.3	283.6	279.1	274.1	281.4	291.0	283.2	288.4	293.3	300.0	278.3	285.3	277.4	255.3	240.0	239.3	243.8	243.2	247.2	249.6	263.3	259.9	258.4	255.8	266.8	300.0
25	270.5	268.4	265.5	264.8	260.8	251.7	247.1	250.9	249.9	253.6	254.9	254.9	262.2	254.2	256.5	254.1	245.3	244.9	250.0	258.6	256.3	264.1	256.0	257.3	255.5	270.5
26	278.5	278.9	272.0	290.7	277.0	283.5	285.0	297.2	307.5	276.9	278.3	255.3	247.0	250.2	249.5	246.1	247.8	256.5	282.0	283.8	266.2	245.4	267.8	251.6	266.1	307.5
27	274.6	257.1	260.2	257.8	254.7	247.6	252.2	251.5	253.4	250.5	254.5	257.4	259.5	256.1	258.2	256.0	254.3	258.0	245.8	231.6	254.3	269.2	271.6	280.8	255.8	280.8
28	293.9	277.9	280.3	296.5	278.4	265.1	231.3	297.0	279.5	271.1	260.8	282.1	293.7	280.2	267.8	243.4	252.6	254.0	257.8	261.7	249.3	271.3	251.4	249.7	267.3	297.0
29	250.8	244.9	247.2	247.2	253.0	257.2	250.5	268.0	278.2	243.2	237.3	244.8	250.9	249.8	250.1	247.4	243.6	244.2	235.1	251.6	284.9	246.2	269.2	261.4	250.4	284.9
30	253.9	277.4	284.9	263.7	275.9	279.3	277.4	263.4	248.0	241.4	243.8	248.0	240.3	235.0	242.0	255.9	250.2	251.9	255.8	254.4	252.1	255.5	254.3	259.9	253.0	284.9
31	255.3	260.4	254.9	254.1	261.3	259.4	263.1	266.9	258.9	256.0	246.5	237.9	247.2	254.9	251.4	255.4	250.1	240.2	249.4	258.3	257.9	257.3	261.0	260.6	254.4	266.9
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	221.2	228.9	233.6	233.1	233.9	233.6	234.5	246.5	235.3	232.2	233.8	229.8	226.2	223.1	210.8	203.4	195.1	186.6	189.1	208.7	210.1	212.8	220.9	222.0		
MAX	305.9	314.6	307.8	308.7	316.7	324.1	318.9	307.5	308.9	311.2	308.7	314.2	308.2	306.2	282.9	261.6	276.0	274.0	282.0	294.3	284.9	309.1	312.7	311.3		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	324 degrees		
Maximum 24-HR Average	290 degrees		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	85.12	Monthly Average	221.1 degrees

Lagoon Pressure (mmHg) – October 2018

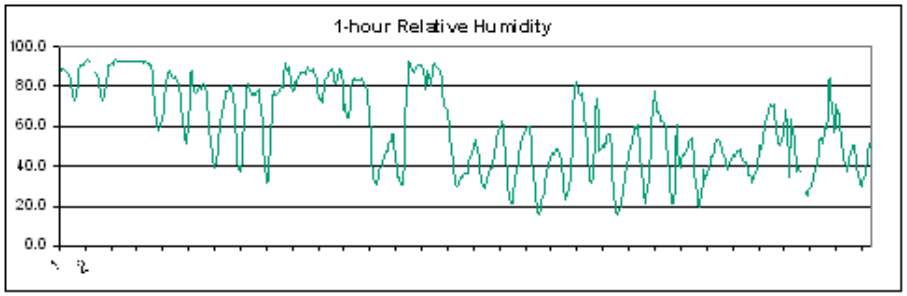
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	649.6	649.2	649.0	648.9	648.7	648.5	648.6	648.9	649.3	649.4	649.4	649.4	649.5	649.8	649.8	649.9	650.2	650.6	650.8	651.2	651.2	651.4	651.7	651.7	649.9	651.7
2	651.9	652.0	652.0	652.0	651.7	651.5	651.4	651.2	650.9	650.8	650.3	649.8	649.3	648.7	648.3	648.1	647.7	647.6	647.6	647.6	647.8	648.0	648.4	648.9	649.7	652.0
3	649.4	649.9	650.4	650.7	651.2	651.5	652.1	652.6	652.9	653.0	653.2	653.0	652.8	652.7	652.5	652.5	652.6	652.6	652.5	652.5	652.5	652.3	652.1	651.9	652.0	653.2
4	651.5	651.4	651.0	650.6	650.4	650.2	650.0	649.9	649.8	649.6	649.2	649.0	648.8	648.5	648.4	648.5	648.7	649.2	649.7	649.8	650.1	650.3	650.6	650.9	649.8	651.5
5	651.1	651.3	651.6	651.7	652.1	652.2	652.1	652.4	652.2	651.8	651.5	651.2	650.9	650.7	650.6	650.6	650.8	651.1	651.2	651.3	651.4	651.4	651.3	651.4	651.4	652.4
6	651.4	651.6	651.6	651.7	651.8	652.0	652.2	652.6	652.8	652.6	652.5	652.4	652.2	652.1	651.9	652.0	652.3	652.7	653.2	653.9	654.4	654.6	654.8	654.8	652.7	654.8
7	654.8	655.0	655.2	655.1	655.1	655.3	655.3	655.5	655.5	655.1	654.7	654.4	654.0	653.5	653.2	653.0	653.0	653.1	653.4	653.5	653.8	653.9	653.8	653.8	654.3	655.5
8	653.9	654.3	654.7	654.9	655.1	655.2	655.6	656.0	656.2	656.5	656.4	656.3	656.0	655.6	655.2	655.0	654.8	654.8	654.7	654.7	654.5	654.5	654.4	654.3	655.2	656.5
9	654.4	654.6	654.7	654.8	655.2	655.6	656.1	656.6	656.9	657.1	657.4	657.5	657.6	657.4	657.5	657.4	657.4	657.5	657.6	657.7	657.5	657.3	657.0	656.9	656.7	657.7
10	656.7	656.4	656.1	655.9	655.7	655.4	655.3	655.2	655.0	654.9	654.4	654.1	653.8	653.4	653.2	652.9	653.0	653.3	653.4	653.4	653.6	653.9	653.9	653.8	654.4	656.7
11	653.4	653.2	653.0	653.0	653.1	652.9	652.7	652.6	652.3	651.8	651.2	650.4	650.0	649.6	649.1	648.6	648.6	648.6	648.9	648.8	648.9	648.9	649.0	649.0	650.7	653.4
12	648.7	648.3	648.0	647.5	646.6	646.3	645.5	645.0	644.5	644.5	644.4	644.8	644.9	644.9	645.2	646.2	647.3	648.7	649.8	650.7	651.5	652.1	652.6	653.1	647.5	653.1
13	653.5	654.0	654.3	654.3	654.6	655.0	655.3	655.5	655.6	656.0	656.2	656.4	656.8	657.4	657.5	657.6	657.8	658.4	658.6	658.9	659.1	659.3	659.5	659.6	656.7	659.6
14	659.6	659.6	659.4	659.2	658.9	658.6	658.3	658.1	658.0	658.1	657.6	657.2	657.1	656.5	656.1	655.8	655.5	655.5	655.7	655.6	655.5	655.7	656.1	655.9	657.2	659.6
15	656.0	656.3	656.7	657.0	657.5	657.6	658.0	658.3	658.3	658.3	658.0	657.8	657.1	656.4	656.1	656.0	656.2	656.7	657.2	657.5	657.8	658.3	658.7	659.0	657.4	659.0
16	659.5	659.8	660.1	660.1	660.2	660.5	660.5	660.5	660.6	660.5	660.3	660.0	659.5	659.1	659.0	658.8	658.8	659.1	659.2	659.5	659.5	659.8	660.1	660.2	659.8	660.6
17	660.2	660.1	660.0	660.0	659.7	659.6	659.4	659.4	659.1	658.6	658.2	657.6	656.9	656.2	655.4	654.6	654.1	653.9	653.8	654.0	654.0	654.1	654.3	654.4	657.0	660.2
18	654.5	654.3	654.2	654.3	654.1	654.2	654.3	654.6	654.6	654.5	654.6	654.2	654.0	653.5	653.5	653.6	654.0	654.4	654.9	655.5	656.3	656.9	657.4	658.2	654.8	658.2
19	658.7	658.9	659.3	659.4	659.5	659.6	659.6	659.6	659.8	659.6	659.3	659.1	658.8	658.5	658.3	658.1	658.0	658.0	657.9	657.8	657.3	656.9	656.7	656.5	658.6	659.8
20	656.2	655.6	654.7	654.1	654.0	653.8	653.9	653.7	653.9	653.6	653.4	652.7	652.5	652.5	652.4	652.3	652.8	653.2	653.7	653.8	654.2	654.4	654.6	654.8	653.8	656.2
21	654.8	655.1	655.3	655.2	655.5	655.8	655.6	655.7	655.8	655.8	655.7	655.6	655.3	655.0	654.6	654.6	654.9	655.3	656.0	656.2	656.4	656.6	656.7	656.8	655.6	656.8
22	656.8	656.7	656.5	656.4	656.1	655.8	655.8	655.7	655.6	655.3	655.0	654.6	654.0	653.5	653.3	653.0	653.0	653.2	653.5	653.5	653.7	653.7	653.5	653.4	654.7	656.8
23	653.4	653.4	653.4	653.0	652.7	652.6	652.5	652.5	652.4	652.1	651.7	651.1	650.5	650.0	649.6	649.3	649.2	649.1	649.3	649.5	649.6	649.6	649.6	649.7	651.1	653.4
24	649.7	649.7	649.7	649.7	649.7	649.7	649.6	649.6	649.6	649.4	649.2	649.0	648.5	648.5	648.4	648.4	648.7	648.9	649.2	649.4	649.5	649.6	649.5	649.5	649.3	649.7
25	649.8	649.9	650.0	649.7	649.5	649.6	649.4	649.7	649.8	650.1	650.6	650.7	650.2	650.0	649.6	649.6	649.6	649.3	649.0	648.8	648.6	648.8	649.1	649.7	649.6	650.7
26	650.0	650.3	650.6	650.9	650.9	651.0	650.8	650.6	650.5	649.7	648.7	647.7	647.0	646.4	646.3	646.2	646.7	646.7	646.4	646.5	646.7	646.4	647.0	648.2	648.4	651.0
27	648.3	648.6	649.2	649.5	649.6	649.4	649.4	649.5	650.2	650.6	651.0	651.5	651.7	651.6	651.5	651.7	651.8	652.1	652.6	652.9	652.7	652.6	652.4	652.1	650.9	652.9
28	651.6	651.0	650.8	650.3	649.4	648.8	647.9	647.4	646.8	646.4	645.4	645.0	644.9	644.6	644.3	644.5	645.0	644.8	644.9	645.5	645.8	646.1	646.0	646.3	646.8	651.6
29	646.6	646.8	647.2	647.7	647.8	648.2	648.4	648.6	649.1	649.4	649.4	649.6	649.7	649.7	649.9	650.2	650.4	650.8	651.0	651.3	651.6	651.7	651.5	651.6	649.5	651.7
30	651.6	651.9	652.1	652.2	652.1	652.3	652.3	652.1	652.1	652.7	652.8	652.6	652.5	652.5	652.5	652.6	652.7	652.7	652.7	652.7	652.7	652.5	652.0	651.4	652.3	652.8
31	650.9	650.6	650.3	649.8	649.3	648.7	647.9	647.4	647.0	646.7	646.3	646.1	645.7	645.6	645.8	645.9	646.2	646.3	646.1	645.7	645.7	646.2	646.7	647.2	647.3	650.9
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	653.2	653.2	653.3	653.2	653.2	653.1	653.1	653.1	653.1	653.0	652.8	652.6	652.3	652.1	651.9	651.9	652.0	652.2	652.4	652.6	652.7	652.8	652.9	653.1		
MAX	660.2	660.1	660.1	660.1	660.2	660.5	660.5	660.5	660.6	660.5	660.3	660.0	659.5	659.1	659.0	658.8	658.8	659.1	659.2	659.5	659.5	659.8	660.1	660.2		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	661 MMHg		
Maximum 24-HR Average	660 MMHg		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	3.782	Monthly Average	652.7 MMHg

Lagoon Relative Humidity (%) – October 2018

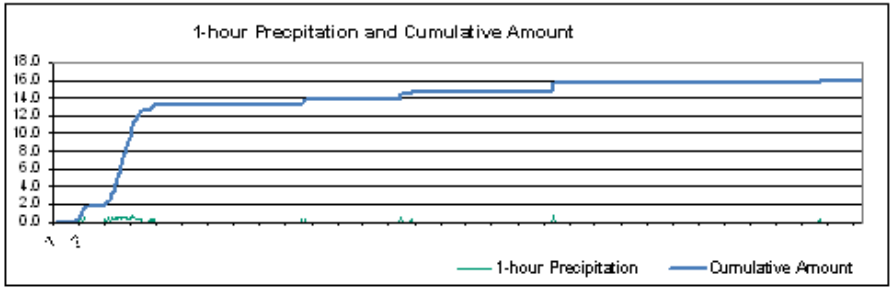
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	87.6	88.4	88.9	88.1	88.0	87.2	86.7	86.2	83.0	80.9	78.8	76.2	73.1	75.0	76.3	81.5	87.8	90.4	90.3	90.8	91.6	91.2	92.8	93.3	85.6	93.3
2	93.1	92.9	92.7	92.6	92.6	92.5	92.7	92.7	92.5	92.5	92.6	92.5	92.3	92.3	92.3	92.2	92.4	92.8	92.8	93.0	92.9	92.6	92.3	92.0	92.6	93.1
3	91.9	92.3	92.2	91.9	91.6	91.4	91.0	90.8	86.9	77.8	73.8	68.2	62.1	57.8	58.5	60.1	60.7	62.6	68.2	74.5	79.5	80.9	86.8	84.1	78.2	92.3
4	87.6	84.8	84.9	83.9	84.4	84.9	83.6	82.4	81.0	74.3	70.4	64.7	56.9	53.1	52.6	51.8	60.5	74.1	87.0	87.7	82.1	77.5	76.5	76.2	75.1	87.7
5	77.8	77.9	79.2	78.7	80.0	81.4	81.4	80.5	76.6	71.3	65.1	60.2	52.4	47.0	43.6	39.7	39.3	41.9	49.0	54.4	58.0	61.7	65.6	67.5	63.8	81.4
6	72.1	75.1	77.4	77.6	78.4	79.5	80.4	79.1	75.1	69.4	61.5	51.3	43.2	39.6	37.7	38.3	43.3	52.4	62.6	75.1	78.3	81.0	80.4	77.9	66.1	81.0
7	75.8	75.7	76.5	75.9	75.8	77.5	78.1	78.5	73.8	70.1	60.3	50.5	39.8	34.3	31.8	32.7	38.7	51.4	69.9	74.5	77.4	75.4	76.2	78.2	64.5	78.5
8	76.5	77.8	77.9	80.3	79.1	83.8	91.6	91.1	88.4	89.6	88.3	84.1	81.0	77.9	78.3	82.1	81.0	82.6	84.3	87.4	87.0	86.8	87.0	87.0	83.8	91.6
9	86.3	86.6	89.0	89.7	88.3	88.0	87.6	89.2	88.2	86.4	83.1	78.6	74.2	73.6	73.6	71.7	74.6	79.5	83.5	84.6	85.2	86.1	87.5	88.6	83.5	89.7
10	88.7	85.7	83.3	81.3	81.1	84.2	88.5	89.2	87.5	80.3	67.9	71.4	69.2	64.4	64.3	64.6	71.3	78.7	83.1	84.0	83.5	83.6	83.6	83.0	79.3	89.2
11	83.0	83.7	84.5	83.9	82.2	80.6	79.2	78.9	74.7	66.8	54.3	42.7	37.5	33.7	32.5	31.0	31.8	34.5	37.4	39.4	40.1	42.1	44.5	45.9	56.0	84.5
12	47.5	48.0	51.0	52.7	52.5	56.1	56.0	52.5	44.2	40.1	35.2	34.0	34.2	31.3	30.9	34.8	41.5	64.3	75.1	85.5	92.7	91.9	90.2	88.6	55.5	92.7
13	86.7	87.7	89.1	89.9	90.6	90.6	91.0	91.2	90.3	88.4	83.7	78.8	83.5	88.3	85.6	82.6	80.5	89.0	91.0	91.3	90.2	89.8	89.1	86.6	87.7	91.3
14	87.6	84.6	77.6	72.3	70.4	69.0	67.9	65.4	62.2	56.2	48.5	42.0	38.1	34.4	30.9	30.1	30.5	31.8	34.4	34.6	35.0	36.8	36.5	35.0	50.5	87.6
15	36.4	42.4	43.8	43.5	47.1	49.5	50.8	53.1	52.4	48.4	43.9	38.0	33.7	31.5	30.5	29.4	29.5	31.7	33.9	36.7	39.4	38.1	39.7	43.6	40.3	53.1
16	47.1	50.5	52.9	57.8	58.2	59.0	61.2	62.4	60.3	54.0	45.6	36.0	30.2	26.6	24.6	21.8	21.6	27.6	30.0	33.7	37.4	41.5	44.0	48.1	43.0	62.4
17	51.3	54.3	56.8	57.2	57.7	58.7	59.8	59.9	58.9	52.6	44.2	36.3	29.1	24.5	21.0	18.1	15.5	18.8	22.2	24.3	26.7	32.2	35.5	39.3	39.8	59.9
18	42.1	43.1	44.3	45.9	46.7	45.8	47.4	49.0	48.6	48.3	46.4	41.8	38.7	35.1	30.5	23.4	26.1	27.2	28.2	28.6	35.4	53.3	66.7	73.6	42.3	73.6
19	79.1	82.5	78.3	77.6	75.9	76.6	74.6	70.2	66.0	59.1	51.5	43.3	37.9	33.4	31.9	33.6	38.1	53.8	66.6	74.1	63.4	47.3	48.5	48.7	58.8	82.5
20	49.9	51.8	49.2	51.7	54.0	55.9	55.9	54.2	49.5	37.1	26.9	19.7	17.3	16.3	17.3	17.9	20.2	23.9	25.5	28.1	33.6	42.2	38.2	43.1	36.6	55.9
21	46.2	49.3	52.1	54.5	56.1	59.4	59.3	61.2	57.9	52.4	45.5	38.2	31.2	26.0	21.6	24.8	28.0	34.5	39.3	47.8	59.5	69.6	78.0	71.4	48.5	78.0
22	67.7	67.5	67.2	65.2	62.9	62.3	61.4	61.7	59.2	52.5	44.0	35.4	29.0	24.4	21.1	21.7	29.0	49.2	61.1	51.5	40.6	39.0	41.7	43.7	48.3	67.7
23	45.6	45.6	47.7	48.9	50.0	51.3	52.9	54.4	50.6	46.7	37.8	31.3	26.9	21.2	19.8	20.7	25.9	33.0	37.9	34.6	33.9	36.3	39.5	40.9	38.9	54.4
24	41.9	44.4	45.3	47.7	50.4	53.1	52.7	52.9	52.7	51.2	49.7	47.8	45.5	43.5	40.9	38.4	39.7	41.5	43.9	43.1	45.3	46.2	45.3	43.1	46.1	53.1
25	47.3	47.2	48.8	46.4	43.1	43.1	42.0	41.6	41.8	38.3	35.4	35.5	34.2	31.8	33.4	34.5	35.9	38.9	42.5	46.6	50.2	48.9	52.3	57.7	42.4	57.7
26	61.9	62.0	64.4	66.7	69.3	70.4	71.4	70.3	71.0	67.9	59.0	52.8	52.3	50.3	50.8	52.2	57.3	60.7	63.7	68.2	60.0	41.5	35.0	57.7	59.9	71.4
27	63.9	57.8	53.0	50.3	40.6	37.1	39.2	36.8	32.2	30.4	28.1	27.8	27.4	26.3	25.6	26.7	29.1	29.8	31.9	32.9	34.6	38.6	41.1	43.5	36.9	63.9
28	47.6	52.0	54.0	51.3	53.2	56.6	59.6	59.1	64.8	83.5	83.8	75.6	70.5	62.7	57.1	58.7	71.4	66.4	66.8	65.1	50.8	54.4	44.0	42.5	60.5	83.8
29	42.3	39.5	37.5	41.8	47.9	46.7	48.5	50.1	50.9	43.0	39.9	36.0	33.0	31.3	30.3	31.7	33.7	35.9	39.0	41.8	45.8	51.8	48.4	47.8	41.4	51.8
30	49.1	52.0	53.5	55.9	52.4	53.6	54.6	54.1	46.3	45.3	44.6	36.8	40.9	35.4	33.3	31.9	34.5	35.4	38.5	41.4	42.7	42.7	41.0	42.8	44.1	55.9
31	42.8	41.2	42.6	45.3	49.6	50.9	54.4	55.5	53.3	50.7	46.7	44.5	38.7	35.2	36.6	37.3	39.5	45.5	47.7	46.4	45.7	42.9	41.9	41.6	44.9	55.5
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	64.7	65.3	65.7	66.0	66.1	67.0	67.8	67.6	65.2	61.5	56.0	50.7	46.9	43.8	42.4	42.5	45.4	51.0	55.7	58.1	58.7	59.5	60.3	61.7		
MAX	93.1	92.9	92.7	92.6	92.6	92.5	92.7	92.7	92.5	92.5	92.6	92.5	92.3	92.3	92.3	92.2	92.4	92.8	92.8	93.0	92.9	92.6	92.8	93.3		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	93.3 %		
Maximum 24-HR Average	92.6 %		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	21.04	Monthly Average	57.9 %

Lagoon Precipitation (mm) – October 2018

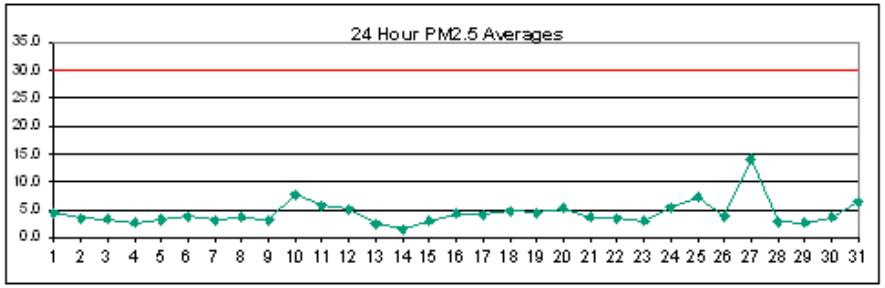
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.5
2	0.0	0.5	0.3	0.3	0.3	0.5	0.3	0.5	0.5	0.3	0.5	0.5	0.5	0.5	0.3	0.5	0.3	0.3	0.5	0.5	0.8	0.5	0.3	0.5	0.4	0.8
3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.5
13	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	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	0.3
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
MAX	0.3	0.5	0.3	0.3	0.3	0.5	0.3	0.5	0.5	0.3	0.5	0.5	0.8	0.5	0.3	0.5	0.3	0.3	0.5	0.5	0.8	0.5	0.5	0.5		



Number of Non-Zero Readings	40		
Maximum 1-HR Average	0.8 MM		
Maximum 24-HR Average	0.4 MM		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	0.09	Monthly Average	0.02 MM

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

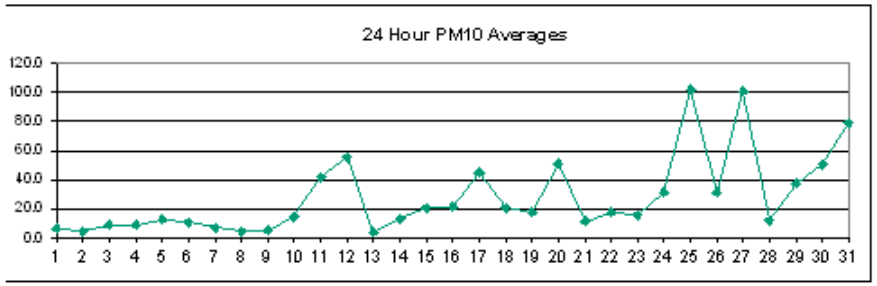
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	8.1	5.5	1.7	3.4	5.9	6.2	6.6	5.9	6.2	5.9	5.1	4.0	4.4	4.0	1.9	3.4	6.5	3.7	5.1	5.3	3.7	2.6	1.8	1.9	4.5	8.1
2	3.3	2.9	1.1	2.6	1.8	2.6	3.0	3.7	6.2	4.4	4.0	4.8	3.3	3.3	1.0	1.7	5.1	5.5	5.1	5.9	4.4	4.4	3.7	2.2	3.6	6.2
3	3.3	5.1	5.1	4.0	2.9	1.5	0.8	1.9	4.4	4.4	2.6	3.3	1.8	0.7	1.5	3.5	3.7	6.6	6.6	4.5	4.4	3.7	1.1	2.2	3.3	6.6
4	3.7	3.7	3.3	2.6	0.0	0.0	1.1	1.5	2.9	2.9	3.0	5.1	3.6	0.4	0.5	0.4	0.0	4.0	4.4	6.6	6.2	4.0	3.3	2.6	2.7	6.6
5	1.1	0.4	1.5	1.1	4.0	4.0	1.5	0.5	4.1	5.1	3.7	5.5	4.1	5.9	6.6	4.7	2.2	2.6	4.0	1.1	2.6	6.2	4.4	1.7	3.3	6.6
6	2.2	3.7	5.1	5.1	2.9	3.3	3.7	1.1	0.8	1.8	2.3	6.5	5.9	4.8	7.0	8.0	5.1	4.1	4.0	1.8	1.5	4.0	4.0	3.3	3.8	8.0
7	2.6	2.9	2.6	1.9	3.0	5.1	4.4	3.7	3.4	4.8	4.5	2.2	0.0	1.5	4.4	3.7	2.2	2.2	4.0	2.9	0.8	2.6	4.1	5.9	3.1	5.9
8	4.8	3.3	1.8	2.3	6.5	7.7	8.8	8.0	3.6	0.0	1.1	0.7	0.0	1.1	1.5	1.1	4.8	4.8	5.9	5.9	4.4	4.0	4.8	2.9	3.7	8.8
9	1.5	1.1	0.8	2.2	3.3	3.7	2.2	0.7	0.8	1.8	2.2	1.1	0.0	1.1	2.2	2.2	3.0	4.0	5.5	6.6	7.0	8.4	5.9	8.1	3.1	8.4
10	7.0	6.4	5.1	4.1	7.4	11.3	8.8	5.9	4.4	6.6	8.5	13.2	16.4	11.0	11.6	9.1	7.0	8.4	7.3	6.6	4.8	4.1	4.8	6.6	7.8	16.4
11	4.8	4.0	4.8	5.9	5.5	4.1	6.6	5.8	3.4	4.4	3.7	4.1	9.9	8.8	9.6	7.0	5.9	6.2	6.5	5.9	6.6	6.6	5.1	4.8	5.8	9.9
12	5.9	10.6	11.7	8.0	5.5	4.4	3.7	3.3	2.9	2.6	4.1	7.3	6.2	5.5	7.4	10.3	9.6	8.0	4.4	0.0	0.8	1.1	0.0	0.8	5.2	11.7
13	2.9	2.6	0.4	0.8	2.6	1.4	0.0	0.0	4.1	7.9	5.8	2.6	2.6	4.8	3.3	1.8	1.5	0.7	0.4	1.1	2.3	3.3	4.0	2.9	2.5	7.9
14	0.0	0.0	0.4	0.0	0.8	2.9	2.5	0.0	1.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.2	5.1	4.4	3.3	2.2	3.0	4.8	4.0	1.6	5.1
15	2.6	2.6	1.8	0.0	1.8	1.9	3.7	2.6	1.9	4.8	3.4	2.6	3.3	5.9	4.8	4.8	3.3	0.8	2.2	2.2	2.9	5.9	4.4	1.1	3.0	5.9
16	2.6	3.7	2.2	2.6	2.6	2.2	1.7	2.2	4.8	6.2	5.1	4.4	3.0	10.2	9.5	6.6	4.7	2.3	3.3	5.5	6.2	4.8	3.7	4.7	4.4	10.2
17	2.6	3.3	3.3	2.2	2.6	4.4	4.4	3.3	4.0	3.7	5.1	4.0	C	C	0.0	4.0	7.3	4.8	8.8	8.8	7.3	4.0	1.8	1.6	4.2	8.8
18	1.8	3.7	5.9	7.6	5.9	2.9	4.5	6.6	5.5	3.7	2.9	2.9	3.7	2.6	4.0	5.1	4.8	5.1	6.2	4.4	7.3	8.4	5.5	4.0	4.8	8.4
19	6.2	7.3	6.2	7.3	5.9	5.1	3.7	1.0	3.7	4.8	3.7	2.3	2.6	3.7	5.1	4.8	2.6	2.9	5.5	5.5	3.3	4.8	4.8	4.4	4.5	7.3
20	4.4	4.4	5.5	4.5	4.0	5.9	4.0	4.0	5.1	5.1	4.8	4.8	6.2	7.7	12.4	7.0	5.5	5.1	2.9	4.0	3.7	4.0	5.9	5.9	5.3	12.4
21	4.8	2.6	1.1	2.9	2.9	4.8	5.1	3.4	2.9	2.6	1.8	1.1	0.4	0.4	5.1	5.1	4.0	1.8	2.6	5.1	6.6	6.2	7.3	6.2	3.6	7.3
22	5.9	3.0	3.3	3.3	2.9	4.0	2.6	5.9	3.7	1.8	1.8	0.0	1.8	3.7	3.7	5.1	6.2	2.6	0.0	3.0	7.7	5.1	4.0	4.0	3.5	7.7
23	2.6	2.3	2.6	2.6	5.5	4.0	2.6	3.7	2.9	1.8	1.8	1.5	0.4	4.8	4.0	3.7	7.0	4.8	2.4	2.6	3.3	4.0	1.8	0.7	3.1	7.0
24	1.1	2.9	4.8	3.7	2.9	2.2	1.8	1.8	3.0	5.5	3.7	3.4	8.1	8.8	8.1	11.4	9.5	7.0	5.9	7.0	5.9	5.5	8.4	9.2	5.5	11.4
25	12.4	7.3	7.7	5.5	2.9	2.2	4.8	8.9	10.3	15.4	9.2	10.6	11.0	8.9	10.6	8.4	5.9	1.1	0.0	5.9	6.5	6.2	5.1	7.0	7.2	15.4
26	3.7	1.1	4.5	5.9	3.7	2.6	3.3	2.9	2.6	1.5	0.8	2.9	2.6	7.0	5.5	6.2	5.1	3.7	4.0	2.6	0.0	0.0	3.0	18.7	3.9	18.7
27	12.8	7.3	4.8	3.4	14.0	14.7	22.3	21.3	33.7	26.0	20.4	4.4	7.3	8.6	40.1	10.0	39.1	18.2	3.4	8.1	5.5	3.3	5.1	4.8	14.1	40.1
28	1.9	3.7	4.4	5.1	5.5	4.0	2.6	2.2	3.3	3.3	7.3	6.2	4.4	3.4	1.5	1.5	0.7	0.4	1.1	0.0	0.0	0.5	2.9	2.2	2.8	7.3
29	2.2	4.4	4.0	2.2	3.7	4.0	1.1	3.3	2.9	1.5	4.8	4.5	2.2	4.0	3.7	1.5	1.1	2.6	2.6	1.8	2.2	2.3	0.7	1.1	2.7	4.8
30	3.3	3.7	2.6	2.2	4.4	2.9	3.0	5.9	5.5	5.1	6.6	7.3	7.7	4.4	1.1	3.0	3.3	3.3	2.2	1.8	1.8	1.5	2.2	3.7	3.7	7.7
31	3.3	2.6	3.3	7.0	6.6	6.6	7.6	7.7	12.1	9.4	7.3	5.9	6.2	7.3	7.0	6.2	5.5	5.5	10.6	8.8	5.1	5.9	4.5	4.0	6.5	12.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	742	100%
MEAN	4.0	3.8	3.7	3.6	4.2	4.3	4.3	4.2	5.1	5.0	4.5	4.2	4.3	4.8	6.0	4.9	5.6	4.5	4.2	4.3	4.1	4.2	4.0	4.3		
MAX	12.8	10.6	11.7	8.0	14.0	14.7	22.3	21.3	33.7	26.0	20.4	13.2	16.4	11.0	40.1	11.4	39.1	18.2	10.6	8.8	7.7	8.4	8.4	18.7		



Number of 24HR Exceedences	0	Proposed Guideline	
Number of Non-Zero Readings	720		
Maximum 1-HR Average	40.1 UG/M3		
Maximum 24-HR Average	14.1 UG/M3		
		Operational Time	744 HRS
Monthly Calibration	2	Operational Uptime	100.0 %
Standard Deviation	3.7	Monthly Average	4.4 UG/M3

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

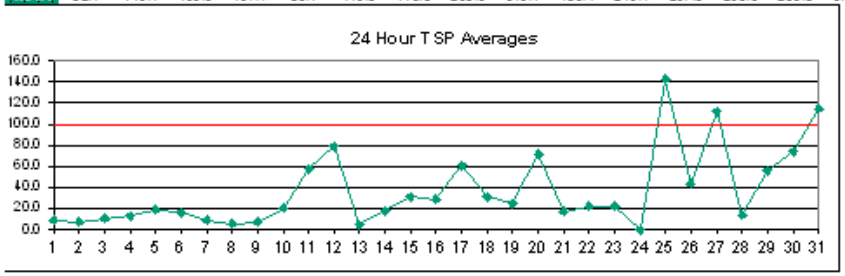
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	4.0	4.8	5.5	5.5	6.2	6.9	5.4	4.7	5.5	6.2	9.7	6.9	4.8	9.7	9.7	6.2	7.6	10.4	8.3	6.9	7.6	5.4	2.6	6.1	6.5	10.4
2	4.0	3.3	2.6	1.2	4.0	4.0	3.0	8.1	7.6	6.1	4.1	7.6	6.1	4.0	4.0	4.8	6.8	4.7	4.8	6.9	5.4	2.9	1.9	2.6	4.6	8.1
3	4.1	6.8	4.7	1.9	3.0	3.0	2.6	3.4	8.3	15.9	3.4	10.5	20.2	17.4	16.7	5.5	9.0	18.8	14.6	16.7	13.2	7.5	2.0	9.7	9.1	20.2
4	5.4	3.0	3.3	4.0	4.0	4.8	6.7	4.8	7.0	13.2	9.0	6.2	8.3	16.0	16.7	14.7	20.2	14.6	14.8	22.2	4.1	6.2	5.4	3.4	9.1	22.2
5	5.4	3.3	1.9	2.9	1.9	1.9	2.6	3.3	3.4	8.5	21.0	19.6	21.2	44.9	36.4	32.2	23.1	23.1	24.3	3.3	3.3	4.8	5.4	5.4	12.6	44.9
6	4.0	4.0	3.3	1.9	2.6	4.0	4.0	3.4	6.2	7.9	20.3	26.5	18.4	44.1	26.7	39.9	23.0	6.9	3.3	0.5	0.5	2.0	6.9	5.4	11.1	44.1
7	4.1	8.2	5.4	3.4	6.1	4.7	4.0	4.7	4.3	3.3	3.4	9.5	6.2	8.4	21.5	6.9	6.1	4.1	5.9	5.5	5.5	11.1	13.9	15.3	7.2	21.5
8	10.3	6.1	4.8	5.5	6.2	8.5	9.7	9.9	7.5	2.6	0.5	1.3	0.5	0.0	0.0	6.8	4.0	0.0	1.9	3.3	3.4	5.9	7.5	5.4	4.7	10.3
9	4.7	4.7	3.3	1.9	2.6	5.5	9.0	6.9	6.8	4.8	8.2	6.0	2.6	1.2	2.6	2.7	5.4	4.8	6.2	8.3	10.4	9.0	8.4	7.8	5.6	10.4
10	6.9	6.8	5.4	3.4	10.0	19.5	12.4	6.9	12.2	14.7	26.7	36.4	32.8	15.4	19.5	17.5	18.9	19.5	12.5	12.5	9.0	9.0	12.5	8.2	14.5	36.4
11	6.1	5.5	5.5	8.2	13.5	9.0	8.3	9.8	23.9	27.4	32.3	96.4	93.0	101.1	85.4	53.0	79.3	64.6	54.0	62.4	48.0	70.0	43.2	11.3	42.1	101.1
12	29.0	54.4	81.5	72.4	69.4	52.2	9.5	9.4	47.3	69.5	64.2	211.5	107.5	90.4	117.6	114.2	74.1	31.3	10.4	7.5	4.7	1.9	3.3	3.3	55.7	211.5
13	0.5	0.5	3.3	2.0	4.0	3.3	1.9	3.2	19.4	7.5	4.1	6.9	6.9	7.5	4.0	1.9	1.2	2.6	3.3	1.3	5.5	5.4	2.6	1.2	4.2	19.4
14	1.2	2.6	3.3	2.6	2.6	1.3	4.8	10.4	11.8	8.4	18.2	23.8	22.9	6.1	5.6	16.4	48.4	68.4	25.7	8.2	6.2	9.0	6.8	4.2	13.3	68.4
15	13.2	9.4	3.3	0.0	0.5	2.7	4.7	4.5	6.2	11.8	12.5	11.1	11.6	53.3	44.2	49.9	50.2	76.7	33.8	48.1	20.7	14.6	8.2	4.1	20.6	76.7
16	5.5	5.4	3.1	4.1	5.5	6.8	6.1	5.6	15.3	12.6	20.8	62.1	31.9	112.6	60.2	43.3	24.4	20.8	10.5	16.7	12.5	14.6	9.4	5.4	21.5	112.6
17	5.5	9.0	8.2	6.2	6.1	3.4	5.5	9.0	13.8	54.1	54.3	18.0	C	C	C	49.3	90.1	98.5	230.4	137.3	57.5	62.6	12.5	9.6	44.8	230.4
18	6.9	6.2	3.4	3.3	6.5	4.7	6.9	6.2	29.0	19.6	11.8	14.6	16.9	12.0	25.9	81.6	69.6	32.2	40.0	24.5	9.7	31.5	21.7	12.5	20.7	81.6
19	22.6	18.0	15.3	23.1	20.9	7.6	6.9	6.2	9.0	9.0	10.4	21.7	15.3	18.2	58.3	34.6	24.5	15.3	24.5	22.7	8.6	14.6	9.0	14.6	17.9	58.3
20	14.6	32.2	30.5	92.1	61.8	15.3	10.0	5.5	17.5	37.9	23.8	80.2	93.4	145.9	248.5	122.4	67.4	28.7	22.4	24.5	25.9	11.8	9.0	5.4	51.1	248.5
21	4.0	3.3	3.1	1.9	3.1	3.3	4.7	3.3	4.8	8.3	11.8	7.6	7.6	9.0	14.5	9.6	25.5	13.9	20.3	22.4	28.5	28.0	22.4	21.7	11.8	28.5
22	13.2	10.4	15.3	15.3	16.7	16.0	9.7	6.2	6.8	17.4	13.9	21.7	25.2	30.1	34.3	29.4	38.5	7.6	12.3	39.3	23.7	6.1	2.6	8.3	17.5	39.3
23	9.7	10.4	7.6	3.3	1.9	1.9	5.9	9.0	16.0	14.6	19.5	14.6	23.2	53.3	9.1	49.2	67.3	5.4	4.8	9.9	11.1	10.4	11.1	13.2	15.9	67.3
24	11.1	13.9	7.6	4.0	3.3	2.6	6.9	4.8	11.8	13.9	20.6	23.1	19.6	50.6	52.7	48.5	69.0	82.2	61.1	42.1	31.6	33.7	47.2	85.1	31.1	85.1
25	85.6	24.5	32.9	25.9	33.0	39.4	70.1	201.6	239.2	338.0	70.2	154.7	131.2	190.1	158.6	173.0	104.7	44.9	46.5	75.8	41.6	78.6	38.6	42.7	101.7	338.0
26	11.8	13.2	18.8	15.3	9.0	2.8	4.8	6.2	6.9	8.3	19.0	46.4	69.0	100.5	78.7	68.8	52.7	65.2	28.9	32.8	0.7	35.1	44.1	16.9	31.5	100.5
27	46.2	3.4	27.9	3.7	74.7	103.6	131.6	115.7	456.8	304.6	179.6	171.9	183.7	161.6	84.1	137.7	70.1	26.7	45.3	35.6	5.5	20.8	11.2	18.8	100.9	456.8
28	6.2	6.9	5.4	3.3	3.3	3.3	4.2	5.4	2.6	5.5	7.6	11.1	11.1	6.2	5.5	16.1	23.1	28.1	38.6	38.6	14.0	23.0	3.4	14.0	11.9	38.6
29	26.1	66.7	56.8	38.6	42.8	42.0	24.2	30.7	7.6	8.4	33.6	22.5	40.1	50.0	63.9	46.5	77.3	58.9	27.5	63.9	42.6	3.3	3.4	21.8	37.5	77.3
30	40.0	33.5	8.2	4.0	0.5	2.8	4.8	10.3	118.2	105.3	64.0	62.9	120.9	47.6	25.3	57.0	72.3	57.7	72.3	53.3	48.6	71.1	74.4	53.3	50.4	120.9
31	39.4	54.0	35.3	65.9	40.6	23.1	26.7	42.1	149.1	120.5	129.8	54.2	67.9	133.2	143.4	111.0	75.3	78.9	62.6	69.5	55.2	108.1	108.4	108.6	79.3	149.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	741	100%
MEAN	14.6	14.0	13.4	13.8	15.1	13.2	13.5	18.1	41.3	41.5	29.9	40.9	40.7	51.3	49.1	46.8	42.9	32.8	31.3	29.8	18.2	23.2	18.0	17.6		
MAX	85.6	66.7	81.5	92.1	74.7	103.6	131.6	201.6	456.8	338.0	179.6	211.5	183.7	190.1	248.5	173.0	104.7	98.5	230.4	137.3	57.5	108.1	108.4	108.6		



Number of Non-Zero Readings	737		
Maximum 1-HR Average	456.8 UG/M3		
Maximum 24-HR Average	101.7 UG/M3		
		Opperational Time	744 HRS
Monthly Calibration	3	Opperational Uptime	100.0 %
Standard Deviation	42.36	Monthly Average	27.9 UG/M3

Windridge TSP (µg/m^3) – October 2018

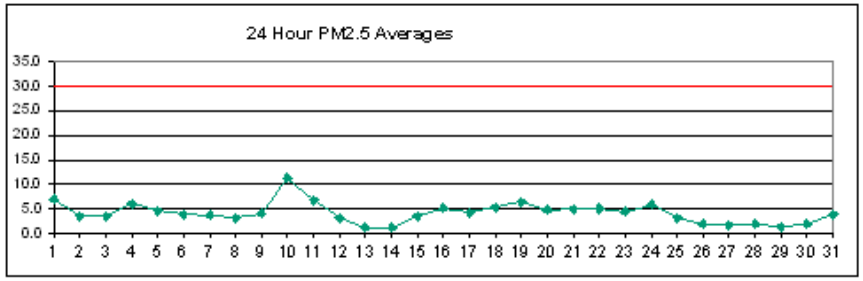
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	8.3	9.0	6.2	8.3	6.9	5.5	8.7	6.9	9.0	8.3	7.6	6.9	6.2	11.1	12.5	9.7	11.1	17.4	9.7	6.9	12.5	6.9	4.8	6.9	8.6	17.4
2	6.2	12.5	11.8	6.1	3.3	4.0	6.9	7.6	6.9	14.6	8.7	4.8	6.9	6.2	8.3	9.0	9.7	9.0	6.8	2.9	5.5	5.4	3.4	11.4	7.4	14.6
3	7.6	8.8	3.3	1.2	2.6	0.5	0.0	2.0	5.5	25.1	10.2	12.5	18.9	25.2	18.8	17.4	10.4	21.6	16.0	18.1	9.0	5.4	3.3	5.4	10.4	25.2
4	1.2	0.0	3.3	4.7	1.8	1.2	7.1	5.4	6.2	10.4	8.3	9.0	16.0	15.4	31.5	28.1	37.8	27.3	17.6	49.7	4.8	6.9	5.4	4.8	12.7	49.7
5	8.7	6.9	4.0	1.7	3.3	3.3	1.2	1.2	4.8	17.5	22.4	20.3	25.3	62.6	62.2	56.8	35.8	43.5	46.2	1.9	1.9	6.2	10.4	8.3	19.0	62.6
6	4.7	2.6	0.5	0.0	0.5	3.3	3.3	4.8	9.0	7.6	22.4	31.5	23.3	77.9	45.8	77.2	34.3	14.6	7.5	3.3	6.1	5.5	6.8	4.0	16.5	77.9
7	2.7	7.6	5.4	4.7	4.8	5.4	4.1	7.6	5.4	3.3	3.4	6.2	6.2	16.8	37.0	11.8	15.3	4.0	4.0	5.4	4.1	17.5	20.2	9.7	8.9	37.0
8	6.1	4.0	3.3	4.8	7.6	11.1	11.3	9.0	6.1	2.6	0.5	6.1	4.7	2.6	5.5	9.0	5.4	2.6	5.4	3.3	1.9	2.6	5.4	4.7	5.3	11.3
9	2.6	0.6	1.9	2.6	1.2	1.2	4.8	10.4	11.3	8.3	9.0	8.3	6.1	5.4	4.0	1.9	6.2	10.3	7.6	11.1	15.3	9.0	12.4	10.3	6.7	15.3
10	9.7	9.0	10.4	5.5	17.5	21.6	11.8	6.9	14.7	21.8	43.6	53.3	38.5	20.3	30.8	26.6	32.9	25.9	17.5	26.5	11.1	16.7	9.0	8.3	20.4	53.3
11	4.8	6.2	5.5	10.4	15.3	6.9	5.5	10.5	23.8	28.1	34.3	131.0	135.2	133.9	135.5	81.9	126.7	103.3	79.5	86.4	64.9	96.8	50.2	15.1	58.0	135.5
12	29.7	68.5	105.6	104.1	88.6	71.3	12.5	9.3	65.7	109.0	96.6	249.6	167.4	133.4	189.4	177.8	113.6	51.0	18.8	8.3	7.3	3.3	3.3	3.3	78.6	249.6
13	3.3	2.6	1.2	2.6	3.3	2.6	4.0	3.2	19.0	11.8	6.1	1.2	5.5	11.1	19.0	1.9	1.2	1.2	4.4	3.3	4.7	4.0	1.9	2.0	5.1	19.0
14	2.6	2.6	2.6	2.6	0.8	2.7	13.9	8.3	15.3	10.4	16.9	35.0	28.6	6.9	7.7	24.8	67.0	92.5	29.3	10.4	10.4	18.8	6.9	6.3	17.6	92.5
15	21.6	6.9	5.4	4.0	3.3	3.4	5.5	5.5	8.3	15.4	21.6	14.6	11.5	73.8	64.0	72.5	88.1	118.5	52.1	70.1	36.4	22.2	4.1	8.3	30.7	118.5
16	6.9	6.1	4.7	3.3	2.0	4.0	4.8	6.2	16.7	11.2	23.5	79.9	36.6	149.6	94.1	66.6	39.9	29.5	12.6	20.2	14.0	25.8	13.2	9.7	28.4	149.6
17	13.9	9.7	9.0	8.9	6.2	7.6	11.8	11.8	14.4	74.5	69.3	25.2	C	C	C	70.4	145.6	134.5	284.0	173.3	78.8	94.3	21.0	7.2	60.5	284.0
18	5.5	4.4	10.4	10.4	8.3	7.6	8.3	10.4	40.0	23.1	16.0	13.2	16.0	20.3	35.7	110.5	102.7	62.4	80.9	49.2	11.8	57.6	24.5	18.8	31.2	110.5
19	25.9	23.1	23.1	25.2	16.7	6.9	5.5	6.9	8.3	12.5	8.3	28.7	22.4	29.5	85.8	56.2	42.1	26.6	39.3	38.7	18.1	16.7	11.8	15.3	24.7	85.8
20	10.4	40.7	40.0	107.7	74.5	23.8	10.4	6.2	16.6	49.1	23.2	102.0	151.5	217.1	372.6	188.0	111.8	45.6	32.2	39.3	37.2	11.8	6.9	3.3	71.8	372.6
21	5.4	5.4	3.3	6.9	5.5	4.7	6.2	7.6	6.9	11.1	15.3	10.4	8.3	9.0	17.7	15.1	40.7	25.9	30.8	30.1	40.7	42.8	36.5	29.7	17.3	42.8
22	18.8	13.9	23.1	18.9	25.9	16.0	9.7	7.6	9.0	22.4	14.6	20.3	23.1	41.5	44.2	45.7	73.0	9.0	11.1	46.3	22.4	10.4	7.6	6.2	22.5	73.0
23	5.5	6.2	6.2	4.0	2.6	6.2	4.0	9.0	16.7	15.3	21.0	22.4	33.0	76.6	14.0	78.2	121.6	10.2	7.6	13.8	18.1	11.8	13.2	11.8	22.0	121.6
24	14.6	17.7	5.5	5.4	4.0	6.2	6.9	6.2	11.8	12.5	18.9	31.5	23.9	59.1	75.2	70.3	103.7	135.1	93.5	66.1	50.6	49.9	57.1	143.6	N/A	56.8
25	92.1	29.5	43.5	37.9	45.7	52.1	112.2	269.3	316.1	486.1	106.5	193.7	187.7	295.8	237.5	266.7	148.9	57.6	66.2	102.0	58.5	118.1	40.7	56.8	142.6	486.1
26	16.0	11.1	16.0	20.9	4.8	6.2	7.6	11.8	11.8	11.5	20.4	57.0	97.9	137.9	113.3	95.6	65.5	95.6	42.1	39.9	6.3	57.7	63.9	25.3	43.2	137.9
27	61.7	2.7	38.5	9.2	89.7	115.9	140.9	132.1	E	401.9	216.4	257.9	259.9	227.2	121.9	152.6	114.5	42.9	63.3	61.7	11.9	27.3	10.4	25.1	112.4	401.9
28	6.2	6.2	4.8	6.9	6.2	5.5	9.7	9.7	9.0	7.6	16.7	5.4	3.0	3.4	8.3	12.6	31.5	26.0	40.0	43.9	12.6	28.0	9.7	25.3	14.1	43.9
29	41.7	116.1	88.6	49.9	68.8	50.5	33.7	38.5	13.2	14.0	47.7	38.7	63.3	80.9	92.0	70.5	107.0	94.8	43.7	94.7	66.4	0.0	6.2	27.5	56.2	116.1
30	62.5	40.6	9.0	4.7	1.9	1.9	6.2	16.7	166.9	155.4	92.9	95.2	195.3	73.7	36.7	82.5	120.2	83.9	119.6	85.8	75.4	103.4	79.4	61.1	73.8	195.3
31	40.1	70.3	40.9	89.3	60.3	34.4	32.4	63.3	219.0	190.9	197.4	88.5	109.6	226.6	223.8	167.7	111.2	113.9	86.5	87.9	79.8	147.9	150.2	124.2	114.8	226.6
NO.	31	31	31	31	31	31	31	31	30	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	740	100%
MEAN	17.6	17.8	17.3	18.5	18.8	15.9	16.5	23.0	36.2	57.8	39.3	53.6	57.7	75.0	74.8	69.5	67.0	49.6	44.4	42.0	25.8	33.2	22.6	22.6		
MAX	92.1	116.1	105.6	107.7	89.7	115.9	140.9	269.3	316.1	486.1	216.4	257.9	259.9	295.8	372.6	266.7	148.9	135.1	284.0	173.3	79.8	147.9	150.2	143.6		



Number of 24HR Exceedences	3 Proposed Guideline		
Number of Non-Zero Readings	736		
Maximum 1-HR Average	486.1 UG/M3		
Maximum 24-HR Average	142.6 UG/M3		
IZS Calibration Time		Opperational Time	743 HRS
Down Time	0	Opperational Uptime	99.9 %
Standard Deviation	56.0	Monthly Average	38.1 UG/M3

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

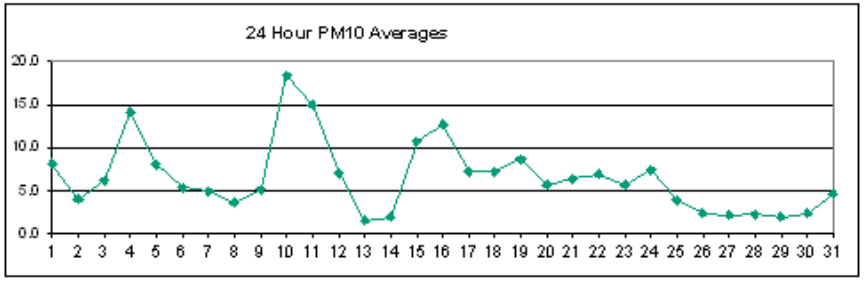
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	9.3	10.8	11.3	11.2	11.3	11.0	11.1	11.2	11.1	10.4	9.0	7.8	6.8	5.0	5.5	4.7	4.4	2.0	2.6	2.8	2.2	1.6	2.6	2.6	7.0	11.3
2	2.9	2.5	2.8	2.9	3.1	4.8	5.9	4.3	2.8	3.4	3.6	3.7	3.7	4.0	3.3	4.4	3.6	2.9	4.3	2.9	3.5	4.7	4.0	2.7	3.6	5.9
3	2.5	2.1	1.8	2.4	2.4	2.3	3.7	4.8	4.4	3.0	3.1	3.3	3.5	3.0	5.1	5.4	5.3	3.5	2.8	3.6	4.1	4.3	4.2	4.6	3.5	5.4
4	4.2	4.0	4.2	4.5	4.4	5.1	5.9	6.3	9.3	12.0	8.5	8.4	9.3	9.6	7.5	7.7	5.9	4.5	4.0	4.4	3.8	4.0	3.8	3.5	6.0	12.0
5	3.5	3.4	3.5	3.6	3.7	4.0	4.6	5.8	5.6	5.5	7.9	6.8	8.4	7.2	5.4	5.3	3.3	1.7	1.6	2.3	4.9	4.7	4.2	4.1	4.6	8.4
6	4.2	4.1	4.4	4.4	4.5	4.5	4.5	4.7	5.4	5.1	4.9	4.9	4.9	3.2	3.2	3.7	3.1	2.0	2.0	2.3	2.6	3.2	3.4	4.0	3.9	5.4
7	4.8	4.4	4.5	4.4	4.5	4.4	4.5	4.7	4.3	5.0	4.2	4.1	3.6	2.6	2.9	2.1	2.2	1.9	1.8	2.4	3.0	3.5	3.5	3.7	3.6	5.0
8	3.3	3.8	3.5	3.4	5.7	8.3	5.1	2.2	1.1	0.7	0.7	0.9	1.1	1.9	1.2	1.7	1.9	2.6	2.5	2.9	4.7	6.5	5.0	4.2	3.1	8.3
9	4.2	3.3	2.2	1.1	2.3	2.1	2.8	3.4	2.9	2.5	2.2	1.9	3.8	4.2	4.2	3.1	3.1	4.4	5.1	6.1	7.2	7.8	9.6	9.6	4.1	9.6
10	6.3	7.1	9.5	10.7	9.3	10.0	12.3	11.2	13.0	12.8	18.1	24.2	18.2	13.1	13.6	15.2	13.5	8.1	7.1	7.1	7.1	7.1	7.2	7.5	11.2	24.2
11	7.8	7.4	8.6	9.2	7.5	6.6	7.1	6.5	6.8	6.5	7.5	10.7	7.0	7.9	7.8	5.1	5.1	4.3	4.9	5.3	6.7	5.0	4.8	5.5	6.7	10.7
12	5.0	5.4	5.2	4.5	4.7	4.6	4.1	3.8	2.9	2.9	4.1	4.0	4.0	3.4	2.9	3.8	3.8	1.9	1.1	1.1	0.4	0.5	0.3	0.2	3.1	5.4
13	0.2	0.3	0.6	1.0	1.7	1.6	0.7	1.1	1.8	3.3	2.4	3.2	2.1	1.4	1.1	0.7	1.1	0.9	0.5	1.1	0.8	0.7	0.5	0.7	1.2	3.3
14	1.3	2.0	1.2	1.0	0.8	0.7	1.1	0.9	1.0	1.2	1.6	1.7	1.3	0.8	1.4	1.8	1.2	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.2	2.0
15	1.8	1.6	1.7	1.8	2.0	2.2	2.6	2.8	5.0	5.7	6.0	4.0	5.4	5.6	5.2	4.9	3.6	4.0	3.1	3.5	5.0	2.8	3.5	2.9	3.6	6.0
16	3.1	3.5	3.3	3.4	3.6	3.9	5.1	5.1	5.2	5.3	5.0	7.3	7.4	6.5	6.5	8.6	6.8	5.8	4.8	6.1	4.9	4.2	3.7	3.7	5.1	8.6
17	3.8	3.9	3.8	3.6	3.6	3.7	4.1	4.2	5.0	5.4	5.4	5.0	5.8	5.2	5.5	5.2	3.9	3.7	4.2	3.5	3.8	4.1	3.8	3.9	4.3	5.8
18	4.0	4.0	4.1	4.3	4.4	4.8	4.7	5.6	5.7	6.3	6.3	6.3	6.3	6.7	6.4	6.2	4.7	3.7	5.1	5.0	4.5	6.8	6.6	7.9	5.4	7.9
19	7.2	8.1	9.1	8.2	7.3	7.0	6.6	6.7	6.7	5.8	6.3	6.4	6.3	5.1	4.7	4.0	4.0	5.4	8.3	8.6	6.9	5.5	5.2	5.3	6.5	9.1
20	5.5	5.4	5.7	6.1	5.8	6.1	6.6	6.5	6.7	6.2	5.3	3.3	2.4	3.2	3.1	3.0	3.3	3.4	3.7	3.7	4.2	4.8	5.2	5.1	4.8	6.7
21	5.3	5.2	5.2	5.3	5.5	5.4	5.6	5.6	5.3	5.0	4.8	4.5	4.4	3.7	3.4	5.0	4.4	4.5	4.3	4.7	4.6	4.7	7.4	6.6	5.0	7.4
22	6.9	6.2	5.5	4.6	4.5	4.5	4.4	5.6	5.7	5.6	4.8	4.6	4.7	5.4	6.1	5.3	4.0	5.1	4.9	5.5	4.9	4.8	4.3	4.1	5.1	6.9
23	4.0	3.8	3.7	3.8	3.8	3.8	4.2	4.5	5.1	5.3	4.8	5.1	4.9	5.3	6.0	4.9	3.8	3.2	3.9	5.2	4.5	4.3	3.9	3.7	4.4	6.0
24	3.8	3.8	3.8	3.8	4.3	4.7	4.9	5.4	6.2	7.1	8.1	9.8	10.3	10.8	9.2	7.6	6.4	5.4	4.9	5.0	4.7	4.4	4.0	4.0	5.9	10.8
25	4.2	3.8	3.6	3.5	3.2	3.6	4.1	4.0	3.5	3.3	3.5	3.3	3.4	3.4	2.9	2.7	2.5	2.7	2.1	2.7	2.7	2.3	2.2	2.0	3.1	4.2
26	1.9	1.5	1.6	1.6	1.5	1.9	2.3	1.9	2.1	3.3	2.8	3.0	3.1	2.8	2.6	1.9	0.8	1.3	0.9	1.2	0.9	1.4	1.1	1.3	1.9	3.3
27	0.8	1.0	1.2	1.0	0.9	1.2	2.4	1.5	2.0	1.2	1.6	1.8	1.9	2.2	1.4	1.8	1.8	1.7	1.7	1.8	2.1	2.5	2.8	2.5	1.7	2.8
28	2.6	2.9	2.8	2.5	2.7	2.5	3.4	2.8	3.5	2.6	2.8	2.8	2.1	2.0	1.2	0.8	0.6	1.3	1.1	0.7	0.4	0.5	0.4	0.4	1.9	3.5
29	0.5	0.6	0.6	0.6	1.0	1.2	2.7	2.0	3.4	3.3	2.4	1.4	2.1	2.3	1.8	1.7	1.0	0.9	0.5	0.8	1.1	1.0	0.9	0.6	1.4	3.4
30	0.8	1.1	1.2	1.2	1.3	2.0	2.4	2.8	2.9	3.1	2.9	2.1	2.3	2.5	2.9	2.2	1.3	0.7	0.9	0.9	1.1	1.1	1.3	2.8	1.8	3.1
31	7.5	5.6	6.8	5.9	4.9	4.8	5.7	6.3	6.6	6.5	4.6	3.0	3.0	2.2	2.5	1.8	1.4	1.8	2.2	2.6	2.2	2.2	1.6	1.3	3.9	7.5
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	4.0	4.0	4.1	4.0	4.1	4.3	4.7	4.7	4.9	5.0	5.0	5.1	4.9	4.6	4.4	4.3	3.6	3.1	3.2	3.5	3.6	3.6	3.6	3.6		
MAX	9.3	10.8	11.3	11.2	11.3	11.0	12.3	11.2	13.0	12.8	18.1	24.2	18.2	13.1	13.6	15.2	13.5	8.1	8.3	8.6	7.2	7.8	9.6	9.6		



Number of 24HR Exceedences	0 Proposed Guideline		
Number of Non-Zero Readings	744		
Maximum 1-HR Average	24.2 UG/M3		
Maximum 24-HR Average	11.2 UG/M3		
IZS Calibration Time		Opperational Time	744 HRS
Down Time	0	Opperational Uptime	100.0 %
Standard Deviation	2.642	Monthly Average	4.2 UG/M3

West PM_{10} (µg/m^3) – October 2018

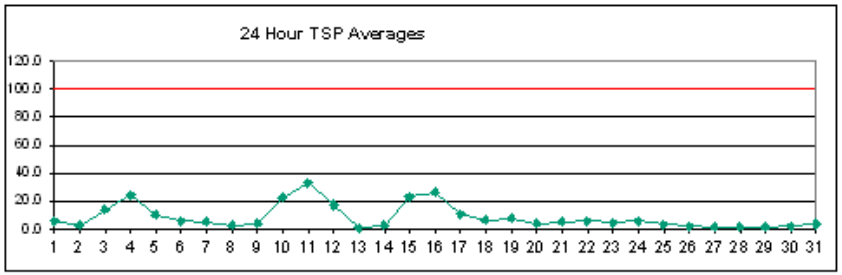
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	10.7	12.8	14.0	12.3	12.2	12.0	11.9	12.7	13.6	12.8	10.7	9.1	7.8	5.6	6.9	5.6	5.4	2.3	3.1	3.3	2.3	1.6	3.2	3.1	8.1	14.0
2	3.7	2.8	3.2	3.1	3.3	4.9	6.0	4.4	2.9	3.7	3.9	4.2	4.2	5.0	4.4	6.2	4.3	3.3	4.7	3.2	4.1	4.9	4.2	3.1	4.1	6.2
3	2.6	2.2	1.8	2.5	2.5	2.5	3.9	5.2	8.3	4.1	4.6	5.6	6.3	6.4	22.3	21.5	16.6	4.6	3.2	4.1	4.3	4.5	4.3	4.9	6.2	22.3
4	4.3	4.1	4.5	4.8	4.8	6.2	7.6	8.3	13.2	27.4	28.7	28.5	38.7	39.7	27.3	28.8	20.3	12.8	5.5	5.9	4.7	4.7	4.0	3.7	14.1	39.7
5	3.6	3.5	3.5	3.6	3.9	4.3	5.3	7.5	7.1	7.2	11.5	9.8	26.8	23.5	15.1	18.4	9.4	2.2	1.8	2.9	6.6	6.0	4.8	4.4	8.0	26.8
6	4.4	4.2	4.5	4.5	4.6	4.7	4.7	5.1	6.4	6.2	6.3	9.8	12.3	5.9	7.6	10.3	6.4	2.5	2.2	2.7	3.0	3.8	3.8	4.3	5.4	12.3
7	5.4	4.8	4.8	4.7	4.9	4.8	4.9	5.4	4.8	6.4	5.8	9.1	9.1	4.8	6.6	3.4	4.4	3.0	2.2	3.1	4.0	4.9	4.5	4.4	5.0	9.1
8	3.7	4.5	3.9	3.8	7.7	9.7	5.7	2.5	1.3	0.9	0.9	1.2	1.5	2.6	1.6	2.2	2.2	2.9	2.8	3.2	5.0	7.6	5.9	4.3	3.6	9.7
9	4.4	3.4	2.3	1.2	2.9	2.4	3.5	4.5	3.7	3.1	2.8	2.3	5.4	6.1	5.8	4.2	4.3	6.2	7.1	8.1	9.2	9.5	11.0	10.1	5.1	11.0
10	6.4	7.3	10.5	12.5	11.6	13.4	16.4	14.4	16.7	16.7	39.2	87.2	43.0	19.2	20.3	22.8	20.3	10.8	9.5	9.7	9.1	8.2	7.8	8.0	18.4	87.2
11	8.3	7.9	9.3	10.2	8.6	7.6	9.0	8.6	9.5	9.5	27.9	54.5	31.8	31.8	29.8	15.6	13.8	10.0	9.4	11.2	16.8	6.5	5.3	6.1	14.9	54.5
12	5.4	7.1	6.0	5.1	5.1	5.3	4.9	9.5	10.5	9.4	18.2	14.4	12.4	12.5	9.0	11.2	11.5	5.7	1.6	1.4	0.5	0.6	0.4	0.3	7.0	18.2
13	0.3	0.4	0.6	1.1	2.3	2.1	0.9	1.2	2.4	4.6	3.3	4.4	2.9	1.9	1.5	0.8	1.3	1.1	0.6	1.3	1.0	0.9	0.6	0.7	1.6	4.6
14	1.4	2.3	1.4	1.2	0.9	0.8	1.3	1.2	1.3	1.7	2.2	2.4	1.7	1.4	4.9	8.8	3.7	1.2	1.1	1.2	1.3	1.3	1.4	1.5	2.0	8.8
15	2.0	1.7	1.8	1.9	2.2	2.5	3.2	3.6	7.2	8.3	25.4	12.0	22.3	26.8	26.7	24.4	13.0	15.2	8.8	11.1	20.6	4.0	8.4	3.5	10.7	26.8
16	3.5	4.0	3.6	3.7	4.0	4.6	6.9	7.0	7.3	8.1	13.2	30.0	27.5	23.6	26.1	44.4	31.4	22.6	6.9	8.0	6.1	5.0	4.2	4.0	12.7	44.4
17	4.2	4.3	4.1	3.9	3.9	4.1	5.0	5.4	6.8	7.8	7.8	7.1	8.5	15.4	17.9	21.8	11.1	5.4	6.0	4.7	5.3	5.1	4.4	4.4	7.3	21.8
18	4.4	4.3	4.5	4.8	5.0	5.7	5.6	7.5	7.8	8.7	8.8	8.8	8.9	9.2	8.9	8.9	6.6	4.7	7.4	7.0	6.1	9.9	8.8	10.5	7.2	10.5
19	9.5	10.8	12.7	11.1	9.0	8.3	8.0	8.5	8.7	7.8	8.8	8.9	8.9	7.2	6.6	5.6	5.8	8.0	12.4	12.7	9.6	6.8	5.9	6.2	8.7	12.7
20	6.8	6.3	7.2	7.6	6.3	6.6	7.5	7.5	8.2	7.9	7.1	4.3	2.9	4.3	3.8	3.6	4.1	3.9	4.2	4.2	4.9	5.6	5.9	5.7	5.7	8.2
21	5.9	5.8	5.8	5.9	6.0	5.8	6.2	6.3	5.9	5.9	6.1	5.7	5.6	4.6	4.4	7.5	6.5	6.8	6.4	7.0	6.9	6.9	11.1	9.9	6.4	11.1
22	10.0	8.8	7.7	6.2	5.7	5.5	5.4	7.9	8.3	8.2	6.8	6.6	6.6	7.8	8.8	7.4	5.5	7.4	6.9	7.7	6.1	5.7	4.8	4.6	6.9	10.0
23	4.3	4.1	4.0	4.2	4.3	4.3	5.0	5.8	7.1	7.6	6.6	7.1	6.8	7.6	8.8	6.8	5.2	4.2	5.4	7.0	5.5	5.4	4.6	4.2	5.7	8.8
24	4.1	4.1	4.1	4.0	4.9	5.5	5.9	7.0	8.6	9.6	10.9	13.1	13.5	14.5	12.1	10.7	8.2	6.4	5.6	6.1	5.7	5.2	4.4	4.2	7.4	14.5
25	4.5	4.0	3.9	3.8	3.5	4.3	5.2	5.2	4.5	4.2	4.7	4.3	4.5	4.9	4.1	3.7	3.4	3.5	2.5	3.6	3.7	2.9	2.7	2.2	3.9	5.2
26	2.0	1.7	1.8	1.8	1.6	2.3	3.0	2.3	2.9	4.7	3.9	4.3	4.5	4.1	3.8	2.7	1.1	1.6	1.0	1.3	1.0	1.8	1.3	1.8	2.4	4.7
27	1.0	1.3	1.6	1.3	1.2	1.5	3.4	1.9	2.7	1.6	2.2	2.4	2.6	3.1	1.9	2.3	2.3	2.1	2.1	2.2	2.6	3.2	3.6	3.1	2.2	3.6
28	3.1	3.4	3.3	2.9	3.3	3.0	4.6	3.4	4.8	3.2	3.2	3.5	2.8	2.8	1.5	1.0	0.7	1.5	1.2	0.7	0.4	0.6	0.5	0.5	2.3	4.8
29	0.5	0.6	0.7	0.6	1.2	1.5	3.9	2.9	5.0	4.8	3.5	2.0	3.0	3.3	2.6	2.5	1.3	1.2	0.6	1.0	1.4	1.2	1.0	0.7	2.0	5.0
30	0.8	1.2	1.2	1.2	1.4	2.5	3.2	3.9	4.1	4.3	4.0	2.9	3.2	3.6	4.2	3.2	1.8	0.9	1.2	1.1	1.3	1.3	1.4	3.1	2.4	4.3
31	7.6	6.0	7.1	6.4	5.5	5.7	7.1	8.3	9.0	9.1	6.5	4.1	4.0	2.8	3.3	2.2	1.6	2.2	2.7	3.2	2.5	2.5	1.7	1.4	4.7	9.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	4.5	4.5	4.7	4.6	4.7	5.0	5.6	6.0	6.8	7.3	9.5	11.9	11.0	10.1	10.0	10.3	7.5	5.4	4.4	4.8	5.2	4.5	4.4	4.2		
MAX	10.7	12.8	14.0	12.5	12.2	13.4	16.4	14.4	16.7	27.4	39.2	87.2	43.0	39.7	29.8	44.4	31.4	22.6	12.4	12.7	20.6	9.9	11.1	10.5		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	87.2 UG/M3		
Maximum 24-HR Average	18.4 UG/M3		
IZS Calibration Time		OpperatioEl Time	744 HRS
Down Time	0	OpperatioEl Uptime	100.0 %
Standard Deviation	6.9	Monthly Average	6.5 UG/M3

West TSP (µg/m^3) – October 2018

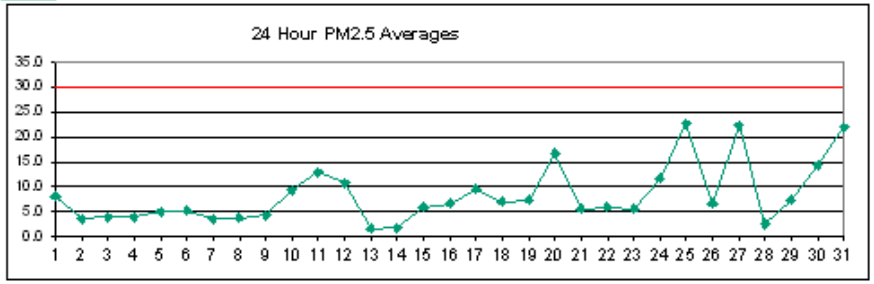
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	7.1	8.6	9.4	8.0	8.1	7.8	7.8	9.1	10.3	9.8	7.9	6.9	5.7	4.0	6.0	4.3	4.4	1.6	2.4	2.4	1.5	1.1	2.6	2.5	5.8	10.3
2	3.0	1.9	2.2	2.1	2.2	3.2	3.9	2.9	1.9	2.5	2.7	2.9	3.0	3.9	3.6	5.7	3.4	2.3	3.2	2.2	3.0	3.4	3.0	2.2	2.9	5.7
3	1.7	1.4	1.2	1.6	1.6	1.7	2.5	3.4	88.5	5.9	8.9	9.7	10.9	18.4	66.3	52.5	34.4	3.8	2.2	2.9	2.8	2.9	2.8	3.2	13.8	88.5
4	2.8	2.7	2.9	3.2	3.4	4.8	6.7	7.3	13.2	46.1	56.5	59.8	82.9	97.8	64.4	56.2	36.3	22.6	4.3	4.8	3.7	3.5	2.6	2.4	24.6	97.8
5	2.3	2.3	2.3	2.4	2.5	2.9	3.6	6.1	5.6	5.3	11.1	9.0	45.8	56.5	24.4	26.4	18.4	2.1	1.2	2.2	5.1	4.2	3.2	2.9	10.3	56.5
6	2.9	2.7	2.9	2.9	3.0	3.1	3.1	3.4	4.9	4.5	5.0	11.4	27.1	8.7	14.2	17.8	13.7	1.7	1.5	1.9	2.0	2.6	2.5	2.8	6.1	27.1
7	3.6	3.1	3.1	3.0	3.2	3.2	3.2	3.6	3.2	4.8	4.5	18.5	15.7	7.2	9.4	5.5	4.1	4.9	1.6	2.4	3.3	3.9	3.3	2.9	5.1	18.5
8	2.4	3.0	2.6	2.6	6.1	6.4	3.8	1.7	0.9	0.7	0.8	0.9	1.4	2.4	1.3	1.8	1.6	2.0	1.9	2.2	3.2	5.2	4.1	2.9	2.6	6.4
9	2.9	2.2	1.5	0.8	2.2	1.6	2.7	3.8	3.0	2.5	2.2	1.7	5.1	6.1	5.4	3.7	3.9	5.9	6.9	7.2	8.1	7.3	7.4	6.5	4.2	8.1
10	4.1	4.7	7.1	8.6	9.2	9.8	12.3	13.7	16.1	16.8	47.3	186.9	74.4	18.2	20.9	24.5	23.0	11.8	8.8	8.2	6.4	5.4	5.2	5.3	22.9	186.9
11	5.5	5.1	6.2	6.6	5.7	5.3	7.0	7.3	8.8	9.5	80.5	179.7	100.9	87.1	79.7	47.6	40.5	34.0	21.6	19.2	29.8	6.9	3.5	4.2	33.4	179.7
12	3.6	6.1	4.4	3.4	3.5	3.7	3.6	20.8	33.1	35.0	62.8	54.4	35.7	44.4	29.9	25.8	29.6	15.9	1.5	1.1	0.4	0.4	0.3	0.2	17.5	62.8
13	0.2	0.2	0.4	0.8	1.8	1.6	0.6	0.9	2.0	3.8	2.8	3.8	2.5	1.4	1.3	0.7	1.0	0.7	0.4	0.9	0.7	0.6	0.4	0.5	1.2	3.8
14	0.9	1.8	0.9	0.8	0.6	0.6	1.0	0.9	1.0	1.5	2.2	2.3	1.6	1.5	11.6	21.9	7.9	1.2	0.7	0.8	0.9	0.9	0.9	1.0	2.7	21.9
15	1.4	1.1	1.2	1.3	1.5	1.8	2.4	2.8	7.1	8.4	66.0	28.0	59.1	62.8	78.2	77.1	26.9	33.9	22.5	14.3	40.1	3.2	21.8	2.4	23.6	78.2
16	2.3	2.9	2.4	2.4	2.8	3.4	6.1	5.9	6.2	7.8	31.5	87.1	77.4	58.0	74.2	120.3	80.1	41.8	6.1	6.6	4.6	3.6	2.8	2.7	26.6	120.3
17	2.8	2.8	2.7	2.6	2.6	2.8	3.7	4.2	6.1	7.8	7.8	7.0	8.7	38.8	43.8	59.9	22.1	5.2	5.7	3.9	4.6	3.9	3.0	3.0	10.6	59.9
18	2.9	2.8	2.9	3.4	3.4	4.1	3.9	6.1	6.4	8.2	8.4	8.3	8.5	9.4	8.5	8.7	5.7	3.5	6.8	5.7	4.5	9.6	8.9	10.4	6.3	10.4
19	9.3	10.6	10.3	7.9	6.1	5.7	5.8	6.4	7.8	6.3	8.1	8.5	8.4	6.4	6.4	5.4	5.6	8.2	13.7	13.6	8.3	4.9	4.0	4.3	7.6	13.7
20	5.0	4.5	5.6	6.3	4.2	4.3	5.2	5.1	5.9	6.2	5.9	3.6	2.2	3.7	3.0	2.6	3.0	2.7	2.9	2.8	3.2	3.8	3.9	3.8	4.1	6.3
21	3.9	3.8	3.8	3.8	3.9	3.8	4.1	4.2	4.0	4.1	4.5	4.1	4.5	3.4	3.7	8.3	7.0	7.2	6.4	7.3	7.1	7.0	12.2	10.2	5.5	12.2
22	8.8	7.0	5.8	4.5	4.0	3.9	3.9	7.1	8.0	7.9	6.3	6.0	5.8	7.6	8.8	7.0	4.8	7.2	5.9	6.7	4.5	4.0	3.2	3.1	5.9	8.8
23	2.9	2.7	2.6	2.8	3.0	2.9	3.8	4.7	6.3	7.1	5.9	6.4	6.1	7.3	9.2	6.1	4.6	3.6	4.7	5.6	4.2	3.9	3.1	2.8	4.7	9.2
24	2.7	2.7	2.7	2.6	3.4	4.1	4.2	5.3	7.0	8.4	9.3	11.6	13.7	12.7	10.9	12.1	8.4	4.6	3.9	4.8	4.3	3.8	3.0	2.8	6.2	13.7
25	2.9	2.6	2.7	2.6	2.4	3.2	4.2	4.3	3.6	3.5	4.3	3.7	4.0	5.0	3.8	3.3	3.1	2.9	1.8	3.1	3.3	2.5	2.0	1.5	3.2	5.0
26	1.3	1.2	1.2	1.2	1.0	1.7	2.4	1.7	2.5	4.3	3.5	4.2	4.6	4.2	4.0	2.8	1.0	1.2	0.6	0.9	0.7	1.6	0.9	1.7	2.1	4.6
27	0.7	0.9	1.2	0.9	0.9	1.2	3.2	1.6	2.5	1.3	1.8	2.2	2.4	2.9	1.4	1.9	1.7	1.4	1.5	1.5	1.8	2.3	2.6	2.1	1.7	3.2
28	2.1	2.2	2.2	1.9	2.3	2.1	3.9	2.5	4.2	2.3	2.2	2.7	2.5	2.6	1.2	0.8	0.5	1.0	0.8	0.5	0.3	0.4	0.4	0.3	1.7	4.2
29	0.3	0.4	0.5	0.4	0.9	1.2	3.9	2.6	5.3	5.0	3.5	1.9	3.0	3.5	2.7	2.5	1.3	1.1	0.5	0.9	1.2	0.8	0.7	0.5	1.9	5.3
30	0.5	0.8	0.8	0.8	0.9	2.1	2.8	3.7	4.0	4.1	3.9	2.8	3.2	3.7	4.3	3.3	1.6	0.7	1.0	0.9	1.1	0.9	0.9	2.2	2.1	4.3
31	4.9	4.0	4.6	4.3	4.0	4.4	5.7	7.6	8.6	9.1	6.3	3.7	3.8	2.3	3.0	1.8	1.2	1.8	2.1	2.7	1.8	1.9	1.2	0.9	3.8	9.1
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	3.2	3.2	3.2	3.1	3.2	3.5	4.2	5.2	9.3	8.1	15.3	23.9	20.3	19.1	19.5	20.0	12.9	7.7	4.7	4.5	5.4	3.4	3.8	3.0		
MAX	9.3	10.6	10.3	8.6	9.2	9.8	12.3	20.8	88.5	46.1	80.5	186.9	100.9	97.8	79.7	120.3	80.1	41.8	22.5	19.2	40.1	9.6	21.8	10.4		



Number of 24HR Exceedences	0 Proposed Guideline		
Number of Non-Zero Readings	744		
Maximum 1-HR Average	186.9 UG/M3		
Maximum 24-HR Average	33.4 UG/M3		
IZS Calibration Time		Opperational Time	744 HRS
Down Time	0	Opperational Uptime	100.0 %
Standard Deviation	17.67	Monthly Average	8.7 UG/M3

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

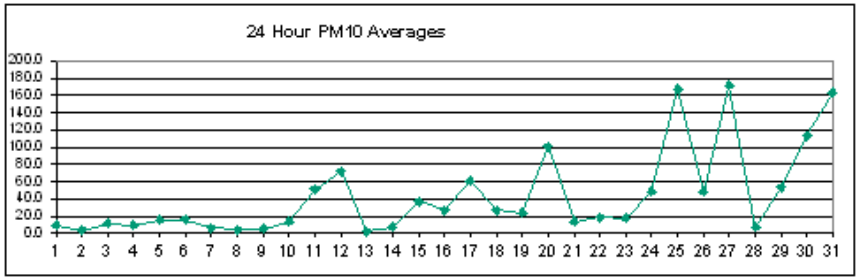
DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	9.8	9.5	13.4	12.2	11.6	10.4	10.7	10.6	10.9	9.6	8.6	7.8	6.4	7.2	5.6	7.7	8.1	6.9	6.0	5.4	4.1	6.5	3.2	2.7	8.1	13.4
2	1.8	1.8	1.8	1.8	3.0	6.6	7.2	4.7	3.6	3.8	4.0	3.8	3.5	3.4	3.4	3.1	2.9	3.6	3.3	3.6	3.1	3.7	3.2	2.3	3.5	7.2
3	2.7	2.1	2.4	2.3	1.7	1.7	3.7	5.0	6.8	3.2	5.6	5.0	5.3	4.5	7.8	6.8	6.2	4.5	5.2	3.7	2.3	2.3	2.0	2.1	4.0	7.8
4	2.3	2.3	3.4	3.5	3.4	4.3	4.0	4.6	4.7	4.1	4.3	4.1	5.8	5.7	6.3	6.6	2.9	1.8	3.0	2.5	2.9	3.3	3.6	3.5	3.9	6.6
5	3.3	3.4	3.5	3.5	3.7	3.7	4.3	4.9	5.3	6.5	6.5	6.8	10.0	7.9	7.1	7.8	5.6	4.7	2.3	2.6	3.6	4.5	4.4	4.2	5.0	10.0
6	4.2	4.4	4.5	4.6	4.5	4.8	5.3	5.9	5.1	5.9	7.8	6.7	7.0	7.8	14.8	11.8	2.5	2.1	2.1	2.1	2.2	2.4	2.8	3.4	5.2	14.8
7	4.1	4.2	4.1	4.1	4.0	4.6	4.2	4.4	4.1	4.7	4.5	3.8	4.7	3.6	3.8	2.8	1.8	1.7	1.7	2.6	2.8	3.4	2.6	2.9	3.5	4.7
8	3.0	2.9	2.3	4.7	9.3	10.9	8.3	1.9	1.6	1.2	1.8	1.5	0.9	1.3	1.2	1.1	1.8	3.1	4.0	5.5	6.9	6.8	5.0	4.4	3.8	10.9
9	4.0	3.2	1.6	0.8	2.4	2.6	4.2	4.7	3.0	3.8	2.7	2.2	1.4	1.8	2.3	2.4	2.4	3.1	4.7	7.4	7.7	9.4	11.3	12.4	4.2	12.4
10	13.2	11.1	6.9	6.8	13.3	10.8	7.7	6.9	6.3	13.7	18.5	16.0	9.1	10.8	8.8	7.9	6.0	7.0	7.2	7.0	7.3	7.6	7.3	6.7	9.3	18.5
11	52.5	7.4	8.5	9.4	7.6	6.5	6.0	7.7	5.8	6.8	16.6	13.6	11.7	11.4	16.0	17.7	20.0	15.2	18.2	12.0	18.0	9.3	6.0	5.6	12.9	52.5
12	6.0	11.5	8.9	8.1	7.6	5.0	5.9	6.4	12.0	11.5	30.7	25.2	20.5	36.8	35.8	14.0	7.7	1.5	0.9	1.1	0.3	0.6	0.9	0.6	10.8	36.8
13	0.6	1.0	0.6	1.2	1.0	E	E	3.1	2.4	1.2	2.1	2.4	2.4	1.8	E	0.5	0.8	2.3	0.7	1.4	1.5	2.2	1.2	1.2	1.5	3.1
14	1.5	1.2	1.0	0.9	1.1	1.5	1.6	2.0	1.8	3.1	1.9	2.2	1.3	1.1	1.4	1.8	3.0	1.8	2.0	1.7	2.0	1.6	1.5	2.4	1.7	3.1
15	1.8	1.6	1.9	1.8	1.9	2.1	2.5	3.0	3.6	3.8	3.5	3.5	7.0	6.3	5.8	13.3	31.8	17.4	10.3	5.5	4.7	2.5	2.7	3.0	5.9	31.8
16	3.1	3.3	3.3	3.5	3.6	3.5	4.6	5.7	4.6	5.2	9.6	9.6	17.1	16.1	12.4	8.0	5.7	3.6	7.4	6.1	7.8	4.9	4.5	5.2	6.6	17.1
17	5.0	4.1	4.1	4.0	4.3	4.3	4.5	4.7	9.6	8.3	5.1	4.6	5.0	7.1	10.9	39.0	19.9	38.6	11.5	11.8	7.7	5.9	5.0	4.8	9.6	39.0
18	4.2	4.4	4.5	4.5	4.7	4.5	4.9	8.2	6.6	6.1	6.4	7.0	7.0	7.5	18.8	17.0	8.6	6.2	6.6	5.0	7.5	5.7	5.7	7.3	7.0	18.8
19	7.7	8.2	9.1	8.7	7.5	6.9	6.4	7.7	7.1	6.0	6.8	6.7	7.1	15.1	12.0	12.0	3.6	3.8	3.4	4.3	5.9	6.2	6.4	6.2	7.3	15.1
20	8.2	7.8	14.5	13.7	8.4	6.9	7.1	7.4	9.3	9.2	33.7	36.3	48.5	85.0	31.5	20.8	8.8	8.0	7.2	7.6	6.1	5.2	5.6	5.7	16.8	85.0
21	5.8	5.6	5.7	5.5	5.4	5.5	6.0	6.3	5.7	6.2	5.5	5.5	5.2	4.7	4.3	6.0	4.9	5.7	5.3	5.8	5.9	5.5	4.5	5.7	5.5	6.3
22	5.5	5.7	6.4	6.7	5.6	4.6	4.5	4.9	5.5	5.9	6.5	7.2	9.6	10.1	7.9	6.6	3.8	3.8	5.6	5.2	5.2	5.2	5.9	5.0	6.0	10.1
23	5.0	4.7	4.3	4.5	4.9	5.1	5.1	5.2	5.5	7.1	6.9	7.2	9.2	5.9	8.6	6.7	2.6	2.0	3.1	5.8	5.7	5.3	5.9	5.4	5.5	9.2
24	7.2	4.8	4.9	4.6	4.8	5.1	5.6	6.4	7.4	8.9	9.9	11.1	17.3	15.6	24.1	37.6	25.0	18.7	11.2	9.6	10.1	9.9	11.5	7.3	11.6	37.6
25	8.2	6.7	6.2	6.2	6.8	14.7	30.9	32.5	57.3	21.4	40.8	35.7	59.4	45.6	38.6	33.5	17.3	24.5	17.1	8.4	13.3	8.4	5.8	3.3	22.6	59.4
26	3.2	3.5	3.1	1.8	2.0	1.9	1.9	2.2	2.3	3.0	11.1	13.0	13.6	11.9	16.2	14.1	12.5	7.3	4.0	1.4	3.9	11.6	4.2	8.2	6.6	16.2
27	1.1	2.7	1.3	5.2	6.1	4.7	4.5	85.1	86.3	39.0	58.2	68.2	59.2	25.7	22.6	16.9	8.0	11.3	8.2	5.9	7.3	2.9	3.4	3.2	22.4	86.3
28	3.2	4.1	3.0	2.7	2.9	3.4	4.6	2.7	2.6	2.5	1.9	2.1	1.5	1.2	1.9	8.1	2.7	1.8	1.8	0.9	1.1	0.9	1.4	2.6	2.6	8.1
29	10.2	4.4	6.8	6.3	3.5	2.6	4.4	1.7	1.7	6.6	10.0	9.1	10.8	7.6	8.4	16.8	22.5	7.4	17.9	8.7	1.1	1.7	3.3	3.1	7.4	22.5
30	2.4	1.6	1.1	1.3	1.9	2.6	3.0	26.0	36.8	19.8	17.5	34.5	24.9	20.2	20.0	21.3	15.0	19.3	13.2	14.2	23.1	12.6	8.4	4.7	14.4	36.8
31	13.1	8.4	15.2	9.0	5.8	5.6	11.4	40.7	44.4	39.3	28.0	27.8	38.3	41.8	37.9	19.7	14.3	16.2	24.0	17.1	27.3	19.9	14.2	6.0	21.9	44.4
NO.	31	31	31	31	31	30	30	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	741	100%
MEAN	6.6	4.8	5.1	5.0	5.0	5.2	6.2	10.4	11.9	8.9	12.2	12.6	13.9	13.9	13.2	12.6	9.0	8.2	7.1	5.9	6.7	5.7	4.9	4.6		
MAX	52.5	11.5	15.2	13.7	13.3	14.7	30.9	85.1	86.3	39.3	58.2	68.2	59.4	85.0	38.6	39.0	31.8	38.6	24.0	17.1	27.3	19.9	14.2	12.4		



Number of 24HR Exceedences	0 Proposed Guideline		
Number of Non-Zero Readings	741		
Maximum 1-HR Average	86.3 UG/M3		
Maximum 24-HR Average	22.6 UG/M3		
		Operational Time	741 HRS
Monthly Calibration	0	Operational Uptime	99.6 %
Standard Deviation	10.2	Monthly Average	8.3 UG/M3

Berm PM_{10} ($\mu g/m^3$) – October 2018

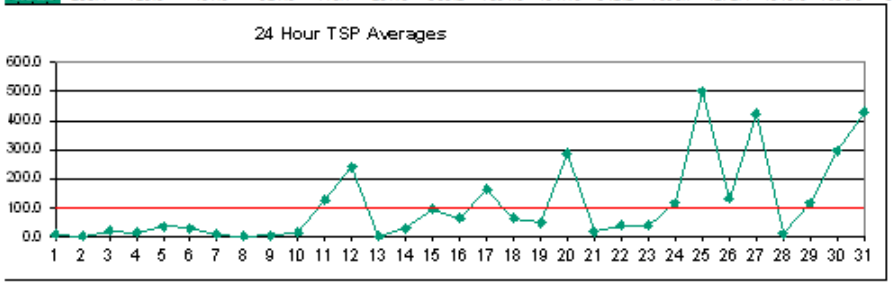
DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	10.9	9.9	15.5	13.5	12.6	10.8	11.1	11.0	11.7	10.1	9.1	8.5	7.1	9.9	6.5	9.8	10.7	9.4	7.5	6.7	5.1	8.9	3.8	2.7	9.3	15.5
2	1.9	1.9	1.8	1.9	3.1	6.7	7.3	4.8	3.9	4.1	4.3	4.1	3.8	3.8	4.0	3.3	3.2	3.7	3.5	3.8	3.3	3.9	3.5	2.5	3.7	7.3
3	2.9	2.2	2.5	2.5	1.7	1.9	4.0	5.7	16.5	7.0	21.8	19.1	17.7	13.8	38.2	33.2	28.0	14.6	11.3	4.8	2.4	2.3	2.0	2.2	10.8	38.2
4	2.3	2.3	3.5	3.6	3.5	5.3	4.8	6.1	6.4	7.4	10.6	10.1	28.6	30.2	29.1	31.4	7.0	1.9	3.1	2.9	3.3	3.6	3.8	3.7	8.9	31.4
5	3.4	3.6	3.6	3.6	3.9	3.8	4.4	5.8	10.5	24.9	25.0	27.5	55.6	35.7	35.3	49.6	27.1	21.6	5.4	4.4	5.6	6.7	5.3	4.9	15.7	55.6
6	4.5	4.6	4.6	4.7	4.6	5.1	6.1	7.0	7.5	16.8	37.0	29.6	36.5	48.8	75.0	67.8	4.6	2.7	2.2	2.2	2.3	2.6	3.0	3.5	16.0	75.0
7	4.4	4.4	4.3	4.3	4.2	5.3	4.4	4.7	5.5	8.6	9.1	7.8	15.4	13.1	14.0	8.0	2.4	1.8	2.3	7.4	7.7	7.8	3.4	3.5	6.4	15.4
8	3.7	3.3	2.5	5.9	11.1	12.9	9.5	2.2	2.0	1.7	2.4	2.0	1.1	1.5	1.4	1.2	2.0	3.2	4.5	5.8	7.3	7.8	5.3	4.6	4.4	12.9
9	4.1	3.4	1.6	0.9	2.5	2.7	5.0	6.2	3.7	5.2	3.6	2.7	1.5	2.0	2.9	3.6	3.2	3.6	5.7	9.7	8.8	10.1	11.9	12.7	4.9	12.7
10	13.8	11.5	7.0	7.9	17.5	13.6	8.0	7.3	8.0	20.1	31.1	30.1	13.9	24.2	16.8	17.8	9.6	9.5	9.4	8.1	8.5	8.9	7.9	7.1	13.2	31.1
11	76.1	8.3	9.7	11.2	9.1	8.3	7.5	10.6	17.9	27.2	140.5	97.2	70.9	66.8	101.6	101.5	100.0	85.7	102.5	48.6	80.2	25.8	10.2	7.3	51.0	140.5
12	10.3	43.8	28.1	25.7	26.6	7.9	21.1	34.8	94.2	97.1	264.1	191.9	165.1	281.1	278.2	88.9	50.4	8.0	2.0	1.5	0.3	0.7	1.2	0.7	71.8	281.1
13	0.7	1.4	0.8	1.4	1.2	E	E	4.0	3.1	1.3	2.8	3.0	3.1	2.5	E	0.5	0.9	3.0	0.8	1.6	2.0	3.1	1.7	1.6	1.9	4.0
14	1.9	1.3	1.2	1.1	1.5	2.2	4.6	15.4	9.2	21.5	13.5	13.4	6.2	3.8	4.9	8.3	15.7	7.5	7.6	7.6	7.2	5.3	3.3	9.1	7.2	21.5
15	4.0	2.2	2.7	2.1	2.1	2.6	4.1	6.1	10.9	13.7	11.2	12.1	46.1	33.7	31.9	109.0	280.0	154.6	91.6	30.0	21.5	3.6	4.8	3.8	36.8	280.0
16	3.7	4.4	4.3	4.8	5.1	4.5	12.7	15.5	9.3	16.7	58.2	59.7	99.8	81.3	73.0	40.9	33.9	10.3	37.6	13.1	26.4	9.4	7.7	11.7	26.8	99.8
17	13.4	6.5	6.3	6.6	8.0	7.8	9.0	12.0	70.0	64.4	19.1	12.0	18.1	40.9	68.2	287.4	166.0	358.9	98.6	97.1	51.1	19.6	9.0	7.8	60.7	358.9
18	5.2	5.3	5.7	6.3	6.4	5.7	7.8	36.5	20.3	12.1	13.6	15.3	15.6	21.0	148.9	133.7	48.8	26.6	33.7	13.0	26.5	12.1	8.9	13.5	26.8	148.9
19	13.6	14.7	16.8	13.9	10.4	8.3	8.6	11.5	17.0	12.0	22.7	23.0	22.9	113.5	80.6	71.2	11.5	10.2	5.7	7.8	13.3	12.8	17.4	13.7	23.0	113.5
20	25.9	32.3	101.5	75.6	30.2	12.4	9.8	13.7	37.9	31.4	238.7	257.2	385.1	603.0	238.0	134.1	43.6	46.5	35.0	35.3	15.5	6.2	7.5	7.1	101.0	603.0
21	7.1	6.7	6.7	6.0	6.5	7.1	7.6	9.7	8.5	20.3	10.7	10.4	10.1	9.9	11.4	24.7	19.2	18.9	18.7	23.0	21.7	18.5	9.3	13.7	12.8	24.7
22	11.2	13.6	23.7	33.9	18.4	8.5	7.2	9.8	18.2	21.6	24.1	27.9	43.9	53.0	35.4	29.2	6.7	4.8	15.5	11.6	7.8	6.5	9.8	8.0	18.8	53.0
23	8.9	8.3	5.9	7.4	10.4	10.8	11.3	13.4	16.4	27.6	22.9	33.5	56.5	16.8	53.8	32.8	4.7	3.5	7.2	13.2	11.6	11.6	15.6	12.4	17.4	56.5
24	21.2	7.5	7.2	5.6	5.4	5.9	7.7	11.2	16.8	20.1	24.7	27.4	85.7	63.6	126.6	222.5	155.6	111.2	44.8	34.2	43.3	34.2	50.0	22.5	48.1	222.5
25	25.7	21.5	21.5	23.6	23.6	86.7	282.6	315.4	480.4	152.4	318.7	284.9	456.5	348.6	289.9	232.6	122.4	149.2	116.7	50.6	126.6	53.4	29.6	11.7	167.7	480.4
26	10.1	15.1	12.8	4.1	3.9	4.8	2.6	6.1	6.0	13.8	93.9	99.3	112.5	84.5	128.1	114.0	124.1	58.4	31.9	2.9	39.0	85.1	34.1	60.4	47.8	128.1
27	2.5	14.3	3.2	26.4	44.5	27.0	29.1	763.2	647.8	293.5	458.3	542.4	435.4	204.4	178.1	137.1	52.3	91.7	59.8	39.0	41.9	7.5	11.6	7.6	171.6	763.2
28	6.3	17.7	4.7	4.6	5.0	9.5	14.2	3.8	5.6	4.8	2.1	2.4	2.2	3.0	5.9	34.4	7.9	2.5	2.5	1.5	3.3	3.0	11.7	14.5	7.2	34.4
29	88.9	27.7	43.3	35.2	17.1	15.1	20.8	7.4	9.1	54.7	68.5	71.4	77.3	53.0	61.5	136.0	178.1	57.0	146.8	74.0	3.1	5.8	19.5	16.0	53.6	178.1
30	11.5	4.1	1.4	1.9	3.8	7.8	17.9	250.5	327.4	186.1	160.6	262.7	145.9	163.1	162.8	169.4	111.4	165.1	114.3	110.4	185.2	82.1	47.7	20.6	113.1	327.4
31	64.9	18.0	46.7	27.9	12.8	12.2	76.0	393.1	417.0	336.7	196.1	218.7	288.0	335.7	280.9	147.6	103.7	126.9	184.7	117.4	214.0	148.8	105.5	40.0	163.1	417.0
NO.	31	31	31	31	31	30	30	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	741	100%
MEAN	15.0	10.4	12.9	12.1	10.2	10.8	20.9	64.7	74.8	49.5	74.8	77.6	88.0	89.2	86.1	80.1	56.0	50.7	39.1	25.5	32.1	19.9	15.0	11.3		
MAX	88.9	43.8	101.5	75.6	44.5	86.7	282.6	763.2	647.8	336.7	458.3	542.4	456.5	603.0	289.9	287.4	280.0	358.9	184.7	117.4	214.0	148.8	105.5	60.4		



Number of Non-Zero Readings	741		
Maximum 1-HR Average	763.2 UG/M3		
Maximum 24-HR Average	171.6 UG/M3		
		Operational Time	741 HRS
Monthly Calibration	0	Operational Uptime	99.6 %
Standard Deviation	84.86	Monthly Average	42.8 UG/M3

Berm TSP (µg/m^3) – October 2018

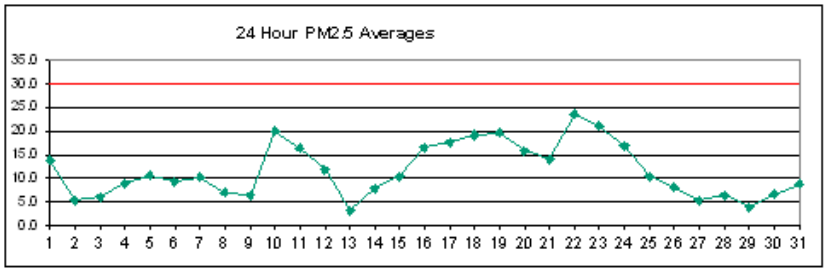
DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	7.5	6.7	11.3	9.7	8.8	7.1	7.2	7.2	7.9	6.7	6.2	5.8	20.9	24.4	4.5	8.1	9.1	8.8	6.2	5.6	3.8	8.0	3.1	1.8	8.2	24.4
2	1.2	1.2	1.2	1.2	2.0	4.3	4.7	3.1	2.6	2.7	2.8	2.7	2.5	2.6	2.9	2.2	2.1	2.4	2.3	2.5	2.1	2.5	2.3	1.7	2.4	4.7
3	2.0	1.5	1.7	1.7	1.1	1.2	2.7	4.0	38.7	27.7	36.8	28.9	25.7	24.9	95.7	75.3	46.8	30.8	12.4	4.2	1.6	1.5	1.3	1.4	19.6	95.7
4	1.5	1.5	2.3	2.3	2.2	4.1	3.5	4.8	5.3	9.0	15.2	23.6	64.7	59.5	72.3	64.4	14.5	1.2	2.0	2.0	2.3	2.5	2.6	2.4	15.2	72.3
5	2.2	2.3	2.4	2.3	2.6	2.5	2.9	4.4	22.3	80.2	80.7	74.4	123.9	73.1	112.0	110.7	57.9	42.3	15.1	3.8	6.5	5.4	4.1	3.4	34.9	123.9
6	3.0	3.0	3.0	3.1	3.0	3.4	4.2	5.3	19.2	54.5	125.2	87.1	88.1	116.6	74.3	63.9	6.3	2.9	1.7	1.4	1.5	1.7	2.0	2.3	28.2	125.2
7	2.9	2.9	2.8	2.8	2.7	3.9	2.9	3.2	7.3	13.5	20.1	11.5	27.3	20.0	20.2	10.5	2.3	1.7	2.5	12.1	6.7	6.8	4.0	4.5	8.1	27.3
8	2.4	2.3	1.7	4.5	7.9	8.9	7.1	1.5	1.6	1.3	1.8	1.4	0.8	1.1	1.0	0.8	1.3	2.1	3.3	4.0	4.9	5.8	3.5	3.1	3.1	8.9
9	2.7	2.2	1.1	0.6	1.7	1.9	4.1	5.1	2.7	4.7	3.2	1.8	1.0	2.1	7.3	16.0	4.6	2.5	4.3	7.8	6.3	6.7	7.9	8.2	4.4	16.0
10	9.0	7.5	4.6	5.4	12.7	9.8	5.4	4.8	6.0	18.8	37.8	51.9	23.3	42.3	26.2	29.4	19.3	7.5	7.4	5.9	6.0	6.1	5.2	4.7	14.9	51.9
11	80.4	5.6	6.5	8.2	6.8	6.7	5.9	10.5	48.9	92.4	482.5	314.1	196.5	156.1	259.3	247.8	218.7	228.8	272.8	121.4	191.6	47.2	26.8	9.4	126.9	482.5
12	17.9	95.9	77.8	67.6	106.2	9.4	41.3	93.5	338.3	378.7	981.2	651.8	559.0	945.3	921.4	289.6	184.4	35.4	7.9	1.2	0.2	0.5	0.8	0.5	241.9	981.2
13	0.5	1.0	0.6	1.0	0.9	E	E	3.5	2.3	0.9	2.3	2.2	2.8	2.0	E	0.4	0.6	2.7	0.5	1.2	1.7	3.1	1.6	1.3	1.6	3.5
14	1.4	0.9	0.8	0.8	1.3	2.1	15.9	93.1	34.1	105.1	69.4	62.6	28.7	13.3	18.6	26.4	41.8	16.3	13.8	40.7	30.5	21.1	9.7	38.3	28.6	105.1
15	12.1	2.6	3.2	1.6	1.4	3.6	12.4	27.1	19.6	38.1	24.5	41.8	130.4	72.6	109.3	314.9	678.9	374.3	242.9	69.3	62.3	3.7	8.2	3.1	94.1	678.9
16	3.9	7.2	5.7	5.8	24.4	10.0	59.0	30.7	27.0	44.9	156.9	202.7	197.9	134.4	152.6	81.4	87.8	22.1	120.6	20.3	62.4	17.6	18.7	40.3	63.9	202.7
17	76.7	12.7	14.4	22.6	43.1	33.6	41.4	38.8	289.9	260.8	57.3	26.1	47.8	124.9	170.3	668.8	421.8	845.1	245.8	244.9	125.2	49.1	14.1	20.0	162.3	845.1
18	4.2	3.5	13.1	10.6	8.4	5.6	16.0	97.5	46.4	16.0	26.0	30.1	31.7	49.5	394.1	370.5	117.1	80.4	112.4	24.0	55.9	23.7	8.2	14.6	65.0	394.1
19	11.2	13.3	20.3	13.0	9.4	5.4	10.3	10.1	33.8	20.1	62.6	75.1	53.1	293.5	145.4	146.7	30.4	27.4	6.6	7.5	28.1	33.3	51.0	33.2	47.5	293.5
20	94.6	120.0	437.3	324.5	120.3	23.5	12.6	35.1	90.1	62.0	438.5	656.5	1086.1	1690.0	805.1	411.4	143.1	127.4	79.2	74.2	22.8	5.3	7.3	7.1	286.4	1690.0
21	8.6	5.8	4.5	4.9	4.5	6.2	11.7	20.1	9.8	48.8	15.4	13.2	14.1	11.4	14.0	36.0	31.9	31.4	27.4	32.8	28.2	18.1	7.4	17.5	17.7	48.8
22	14.0	17.9	60.6	122.2	43.8	14.7	12.0	21.1	61.6	52.8	56.4	48.5	82.3	107.7	62.5	73.4	5.7	3.8	17.1	17.4	7.2	6.9	14.2	11.0	38.9	122.2
23	12.4	19.2	9.9	20.5	32.6	38.8	35.3	36.4	45.0	59.5	49.1	81.0	161.2	30.2	125.9	69.2	6.2	4.8	8.1	26.2	19.5	17.9	22.0	25.7	39.9	161.2
24	29.9	15.9	13.0	5.0	5.4	6.0	12.1	21.0	39.0	37.5	48.2	50.6	216.3	135.8	342.3	496.0	446.3	283.7	105.9	93.8	130.1	58.9	160.2	59.0	117.2	496.0
25	34.8	47.3	61.4	76.8	52.9	237.5	966.2	1079.8	1647.3	454.5	942.3	881.3	1310.0	1034.0	933.1	643.6	294.5	368.3	300.0	141.3	358.3	116.4	55.6	21.1	502.4	1647.3
26	16.9	33.5	26.2	6.6	3.4	10.0	6.5	21.4	8.7	49.8	278.3	268.9	272.8	212.4	334.0	291.3	365.5	173.4	109.2	9.3	129.0	226.4	108.6	200.5	131.8	365.5
27	5.5	31.5	6.5	48.5	145.1	82.3	81.6	1864.0	1519.3	677.9	1066.7	1272.4	1068.6	538.1	489.0	415.4	155.4	292.3	183.1	72.9	80.3	17.2	26.8	8.7	422.9	1864.0
28	7.4	54.5	3.9	7.4	4.5	19.0	20.6	2.9	10.4	12.7	1.4	3.6	3.8	4.3	8.6	39.0	11.6	2.4	2.5	1.8	4.0	5.2	27.5	35.8	12.3	54.5
29	209.1	56.9	82.6	53.5	33.0	27.2	29.0	18.2	18.8	115.4	139.4	159.4	147.1	126.5	150.4	310.0	427.5	119.9	332.1	187.9	4.6	10.6	26.3	36.2	117.6	427.5
30	37.7	6.3	0.9	1.3	4.3	9.8	51.2	773.5	892.7	520.9	436.1	655.5	322.6	377.2	392.8	442.7	313.5	482.8	328.2	268.8	501.9	183.9	79.6	48.2	297.2	892.7
31	138.6	31.8	67.6	55.9	17.6	19.5	276.2	1189.1	1187.5	942.2	432.2	538.0	839.9	940.0	696.3	377.1	252.4	302.7	401.3	301.0	524.2	415.1	270.5	88.6	429.4	1189.1
NO.	31	31	31	31	31	30	30	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	741	100%
MEAN	27.5	19.8	30.6	28.8	23.0	20.6	58.7	178.4	209.2	135.8	196.7	204.0	230.7	237.6	231.4	197.8	141.9	126.7	96.0	58.3	77.7	42.8	31.7	24.3		
MAX	209.1	120.0	437.3	324.5	145.1	237.5	966.2	1864.0	1647.3	942.2	1066.7	1272.4	1310.0	1690.0	933.1	668.8	678.9	845.1	401.3	301.0	524.2	415.1	270.5	200.5		



Number of 24HR Exceedences	11	Proposed Guideline	
Number of Non-Zero Readings	741		
Maximum 1-HR Average	1864.0	UG/M3	
Maximum 24-HR Average	502.4	UG/M3	
IZS Calibration Time		Operational Time	741 HRS
Monthly Calibration	0	Operational Uptime	99.6 %
Standard Deviation	234.9	Monthly Average	109.6 UG/M3

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

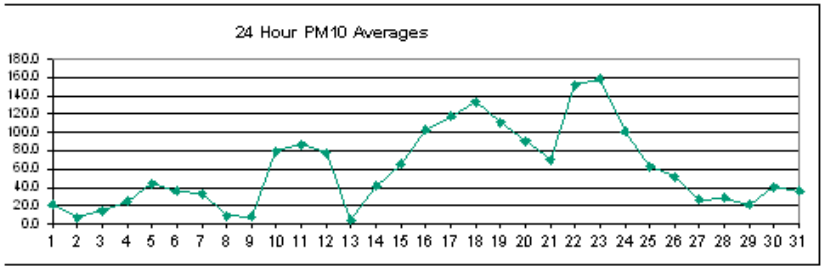
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	16.8	11.7	14.5	17.2	12.2	12.8	12.3	12.8	14.4	16.4	17.8	20.5	15.7	14.8	8.9	13.4	23.8	17.6	12.2	13.6	8.6	16.7	5.3	3.8	13.9	23.8
2	3.4	3.3	3.2	3.3	4.1	9.2	11.0	7.3	5.3	5.9	5.6	5.8	6.0	5.1	4.7	3.9	8.8	4.3	7.2	4.7	3.7	3.4	4.6	3.5	5.3	11.0
3	4.6	3.8	4.0	3.8	3.7	4.4	11.5	14.6	14.2	10.6	11.8	4.9	3.6	5.0	3.3	5.0	3.3	3.2	4.1	6.9	4.9	6.0	4.6	5.7	6.1	14.6
4	5.4	6.5	7.5	8.4	7.9	10.8	13.7	12.7	14.2	13.4	16.3	10.9	9.6	7.1	7.0	5.7	7.6	3.4	5.9	8.5	6.6	9.8	9.7	8.5	9.0	16.3
5	6.6	5.8	5.3	5.9	8.5	8.2	7.1	17.0	20.5	12.6	15.0	10.6	11.6	9.0	8.2	6.6	5.9	18.3	15.1	13.1	10.9	15.0	10.3	8.4	10.6	20.5
6	6.2	7.4	6.6	6.0	10.0	12.1	11.4	12.8	28.2	20.9	14.9	9.3	7.0	9.6	6.9	3.6	6.5	3.1	4.0	3.2	4.6	7.6	9.6	10.9	9.3	28.2
7	14.4	10.6	9.3	11.9	14.6	14.4	11.7	13.3	13.7	20.5	11.4	7.9	6.6	4.4	5.2	8.3	8.9	6.4	4.6	8.0	6.3	5.1	11.6	14.4	10.2	20.5
8	12.3	7.6	6.5	6.3	14.1	13.3	14.7	3.2	4.4	3.5	6.9	5.9	2.6	1.6	4.9	3.4	3.2	4.1	7.4	8.3	9.5	10.5	7.0	5.6	6.9	14.7
9	4.4	3.3	2.2	2.8	2.7	4.1	9.4	8.0	8.8	13.9	10.6	4.3	2.5	2.7	2.7	3.8	3.8	4.0	6.5	7.8	8.3	11.4	12.8	15.2	6.5	15.2
10	16.3	13.4	8.7	15.2	18.7	13.8	9.9	11.8	12.7	20.3	28.2	28.4	31.1	38.1	36.8	39.2	35.4	20.0	22.6	12.7	14.8	11.4	9.3	11.0	20.0	39.2
11	8.5	9.4	11.2	12.2	10.3	10.3	16.4	30.6	38.8	45.5	23.3	14.2	12.4	16.6	14.5	12.2	16.8	13.3	12.1	15.1	13.3	12.9	12.1	9.5	16.3	45.5
12	8.1	7.2	16.3	8.0	12.4	8.0	12.6	15.6	14.6	25.8	38.9	23.4	11.3	12.7	15.0	11.4	20.7	13.5	3.7	4.6	0.4	0.4	0.8	1.3	11.9	38.9
13	1.1	0.6	1.2	1.8	1.5	2.6	6.2	6.3	4.5	3.2	2.7	3.7	10.4	5.2	2.0	0.8	1.8	5.6	3.4	2.3	3.2	2.7	1.5	1.5	3.2	10.4
14	2.6	2.6	4.2	7.2	14.0	30.7	33.7	16.0	11.1	7.1	5.1	4.5	5.2	2.7	4.4	3.9	4.6	4.2	4.3	4.7	5.1	4.4	4.5	3.2	7.9	33.7
15	2.6	7.7	7.5	7.2	9.7	11.6	6.4	13.0	14.5	17.1	16.6	14.9	13.9	7.4	13.7	9.9	7.5	8.3	4.3	21.5	11.0	6.4	9.4	6.5	10.4	21.5
16	4.6	3.9	4.7	11.0	9.6	10.1	19.7	24.3	13.2	25.2	31.0	28.1	22.0	10.9	15.1	11.9	8.2	16.1	32.4	30.0	18.6	16.8	13.8	15.9	16.5	32.4
17	10.7	21.0	15.9	7.6	7.7	15.2	15.2	23.6	35.4	25.4	25.9	29.9	26.4	17.2	14.4	18.8	10.4	8.7	15.0	8.6	15.1	26.5	18.9	11.2	17.7	35.4
18	7.3	6.9	12.9	16.4	14.0	17.0	16.4	48.0	46.2	30.4	21.0	22.0	27.5	25.8	28.4	19.3	14.9	10.2	20.8	19.7	9.6	8.8	6.8	10.1	19.2	48.0
19	11.8	12.3	17.6	10.5	19.6	19.5	19.8	21.9	27.4	22.2	26.5	17.7	16.6	9.9	17.4	31.6	22.0	20.7	8.6	20.5	22.3	25.6	31.5	18.4	19.7	31.6
20	25.7	18.2	27.9	15.7	17.5	22.3	24.7	31.7	33.0	21.5	8.6	10.6	14.1	15.6	12.1	7.7	6.2	6.9	9.1	9.6	10.0	7.5	12.7	12.2	15.9	33.0
21	15.1	18.4	16.5	14.7	21.2	15.9	16.2	15.8	22.6	24.1	17.8	11.0	6.6	5.9	9.6	11.0	10.2	12.9	11.9	9.8	11.5	13.2	9.0	15.7	14.0	24.1
22	13.4	17.4	21.9	29.8	30.1	27.0	24.8	21.8	36.8	37.6	34.8	31.3	40.7	28.3	13.5	18.6	20.9	20.6	23.9	15.0	20.3	11.7	15.5	12.4	23.7	40.7
23	12.4	8.9	7.8	13.7	15.1	17.7	22.8	34.8	24.4	22.8	27.2	30.2	29.1	22.0	13.7	16.5	20.0	21.7	27.2	32.9	30.9	21.9	13.9	17.5	21.0	34.8
24	17.6	14.6	14.6	20.2	19.4	26.2	19.6	26.0	35.4	34.0	24.6	19.9	17.8	19.2	20.2	16.4	11.0	8.8	7.6	6.3	7.2	6.1	7.9	4.8	16.9	35.4
25	6.7	4.5	4.4	4.8	3.9	6.3	13.6	20.0	36.2	18.2	15.9	15.0	15.0	19.8	23.4	8.4	7.4	5.0	3.1	3.7	4.0	2.8	2.4	3.5	10.3	36.2
26	8.1	3.0	1.8	7.9	10.3	4.9	5.6	24.6	23.0	17.5	9.7	6.0	4.8	8.5	7.2	8.4	3.8	4.2	6.3	12.8	4.4	2.5	4.1	3.0	8.0	24.6
27	5.7	1.3	1.6	1.7	1.9	1.7	6.5	9.9	7.5	4.4	8.1	7.6	7.1	4.6	6.5	10.1	8.5	8.9	3.4	2.3	2.4	2.8	3.1	9.6	5.3	10.1
28	8.9	13.4	6.6	11.6	11.4	8.7	13.5	8.3	6.4	4.8	3.9	6.9	9.1	6.1	5.8	1.8	3.2	3.5	4.0	3.7	3.5	7.0	1.7	1.0	6.5	13.5
29	1.0	0.7	1.7	1.2	1.5	2.1	3.0	7.8	11.4	6.7	4.6	3.1	5.5	7.2	4.1	4.3	5.1	1.3	3.9	1.2	6.2	5.8	2.0	1.2	3.9	11.4
30	1.0	4.1	6.3	9.9	12.6	9.3	10.6	10.3	7.1	9.7	9.1	12.2	9.7	6.0	9.8	7.2	7.1	6.0	2.6	1.2	1.2	1.4	2.5	1.9	6.6	12.6
31	3.8	9.1	10.5	6.7	6.3	5.7	11.3	11.7	11.6	10.6	10.5	11.6	13.2	13.1	8.5	10.3	9.5	5.6	4.4	4.7	6.2	7.4	10.0	8.3	8.8	13.2
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	8.6	8.3	9.1	9.7	11.2	12.1	13.9	17.3	19.3	17.8	16.3	13.9	13.4	11.7	11.2	10.7	10.6	9.4	9.7	10.2	9.2	9.4	8.7	8.2		
MAX	25.7	21.0	27.9	29.8	30.1	30.7	33.7	48.0	46.2	45.5	38.9	31.3	40.7	38.1	36.8	39.2	35.4	21.7	32.4	32.9	30.9	26.5	31.5	18.4		



Number of 24HR Exceedences	0 Proposed Guideline		
Number of Non-Zero Readings	744		
Maximum 1-HR Average	48.0 UG/M3		
Maximum 24-HR Average	23.7 UG/M3		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	8.347	Monthly Average	11.7 UG/M3

Entrance PM_{10} ($\mu g/m^3$) – October 2018

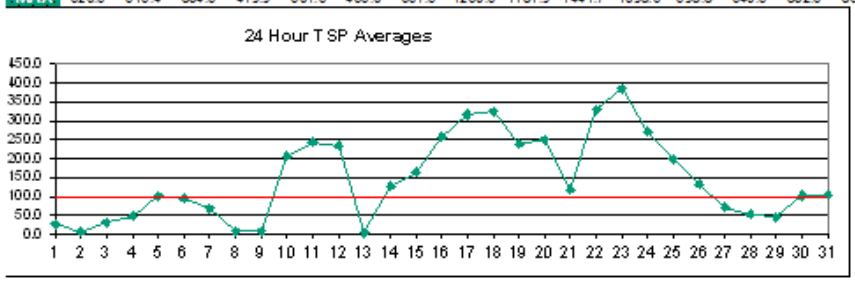
Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	20.8	12.6	16.6	20.6	13.1	13.9	13.2	14.3	17.3	20.3	22.4	33.2	69.6	39.3	12.0	18.4	34.4	25.4	16.7	18.6	11.3	23.7	6.7	5.0	20.8	69.6
2	4.6	4.5	4.4	4.5	5.3	12.0	13.8	9.8	7.5	8.1	7.8	7.8	7.9	6.6	6.3	5.0	10.8	5.7	9.1	5.8	4.5	4.0	5.8	4.5	6.9	13.8
3	5.6	4.3	4.5	4.3	4.3	6.1	17.1	21.8	28.0	63.7	79.0	16.1	6.3	9.2	5.0	6.7	4.6	4.7	11.8	20.4	6.5	8.5	5.7	7.1	14.6	79.0
4	6.4	8.6	10.7	12.3	11.1	15.9	20.5	19.0	21.4	78.6	94.8	50.0	36.4	25.4	26.6	20.9	51.7	8.7	8.1	12.7	9.8	14.6	14.5	12.7	24.6	94.8
5	9.7	8.0	7.1	8.0	11.9	11.1	9.0	25.3	112.6	68.7	101.9	46.6	44.6	34.7	36.2	28.9	21.1	69.9	125.5	85.2	54.3	78.1	35.6	25.0	44.1	125.5
6	8.5	10.3	8.7	7.6	14.5	17.9	16.9	19.2	214.0	183.2	117.9	44.9	20.3	32.9	19.4	9.9	29.4	8.5	13.6	6.9	7.1	11.1	14.2	16.2	35.5	214.0
7	21.5	15.7	13.2	17.8	21.9	21.6	17.5	26.4	74.7	134.8	72.5	35.2	21.9	17.5	27.1	55.6	47.5	49.3	21.7	19.6	9.3	7.3	17.2	21.6	32.8	134.8
8	18.1	10.8	8.7	8.4	18.3	16.2	18.7	4.1	6.1	5.0	10.0	8.4	3.4	2.1	6.9	4.4	3.8	4.5	9.0	9.6	10.5	12.9	8.2	6.4	8.9	18.7
9	4.7	3.4	2.3	3.5	3.0	4.9	12.6	11.0	12.3	20.4	15.5	5.7	3.5	4.4	3.1	9.1	5.1	5.0	8.3	8.9	8.8	12.6	13.5	15.7	8.2	20.4
10	17.0	13.9	9.2	20.3	27.2	18.7	11.6	16.5	18.1	46.2	140.6	128.3	201.2	269.7	296.3	299.5	241.9	29.6	33.6	18.1	20.7	14.8	10.2	13.0	79.8	299.5
11	9.3	10.5	13.6	16.0	13.9	14.8	24.3	45.9	327.3	432.5	196.2	94.0	78.5	114.3	86.4	78.1	115.2	77.1	61.6	76.4	65.7	46.4	51.6	24.9	86.4	432.5
12	25.5	30.2	55.4	27.7	65.0	30.4	61.1	117.6	120.2	221.7	320.3	210.3	71.7	85.1	105.2	62.4	116.9	108.6	13.2	6.7	0.4	0.5	0.9	1.5	77.4	320.3
13	1.4	0.7	1.4	2.1	1.7	3.3	7.0	7.8	6.1	3.9	3.4	4.8	14.9	7.6	2.6	0.9	2.1	7.9	4.1	2.6	4.4	3.3	1.7	1.5	4.1	14.9
14	2.6	2.8	6.1	10.8	28.8	186.4	221.0	136.8	73.4	51.8	37.5	20.5	23.5	9.9	19.5	17.4	23.9	20.7	16.9	21.5	24.9	13.8	15.5	14.9	41.7	221.0
15	7.0	43.5	36.7	35.4	53.2	74.8	28.8	88.0	111.3	133.6	125.0	94.6	91.6	34.9	99.8	60.8	31.1	42.4	20.5	153.0	84.8	47.1	53.0	27.5	65.8	153.0
16	11.6	7.1	11.7	50.9	42.6	53.2	143.6	154.0	90.7	196.4	258.1	153.3	108.3	61.1	90.4	64.0	38.4	137.7	230.0	183.6	114.8	102.6	84.6	85.5	103.1	258.1
17	58.8	119.4	81.2	27.8	29.6	80.9	104.6	182.1	290.1	178.8	174.4	209.6	202.8	109.6	82.0	112.0	66.7	51.2	95.5	43.9	108.6	223.0	140.7	56.7	117.9	290.1
18	21.3	18.8	59.5	92.8	78.7	98.7	100.0	473.1	450.0	246.8	125.2	149.2	209.5	197.5	193.9	140.3	75.8	45.7	170.6	124.0	48.9	40.0	13.2	25.8	133.3	473.1
19	31.2	18.1	61.6	16.7	79.6	36.3	67.1	125.6	167.7	133.0	223.0	129.2	113.0	52.4	104.3	192.0	150.9	137.3	42.8	151.3	131.8	194.0	207.5	102.6	111.2	223.0
20	179.8	104.8	237.6	104.2	86.0	127.4	136.2	215.3	249.4	126.6	26.4	63.7	87.6	98.2	63.8	25.1	17.8	15.8	31.3	33.0	37.4	19.3	49.8	48.0	91.0	249.4
21	75.8	102.7	80.2	74.9	130.0	65.3	77.0	71.0	105.6	130.3	90.7	39.0	16.3	16.0	49.2	70.0	58.6	85.7	79.9	50.6	48.2	70.8	38.7	56.2	70.1	130.3
22	39.2	63.3	103.8	179.9	177.0	142.6	139.6	125.4	268.8	297.4	314.9	257.4	301.9	188.6	75.1	142.1	136.6	134.5	151.3	59.7	130.1	60.6	91.1	74.3	152.3	314.9
23	64.6	45.6	34.0	81.5	88.5	113.1	200.9	342.9	206.0	184.4	234.4	271.5	237.8	166.4	70.9	103.5	176.3	154.6	200.9	252.1	244.4	143.7	73.3	106.6	158.2	342.9
24	103.6	87.8	86.0	131.9	150.3	175.0	123.4	190.3	341.2	316.7	157.2	87.3	69.5	74.5	97.2	69.1	27.7	22.3	20.2	9.3	28.2	13.7	36.2	7.3	101.1	341.2
25	20.8	7.4	6.7	12.3	6.2	22.8	91.9	146.2	304.9	119.0	110.9	89.6	88.5	148.2	181.9	41.4	35.9	19.0	6.5	8.3	10.9	7.4	4.9	14.2	62.7	304.9
26	54.9	8.9	3.8	41.1	59.5	24.3	26.8	203.9	165.4	140.6	66.1	29.3	26.3	46.9	53.9	49.8	23.5	20.4	37.2	79.3	21.0	11.5	21.7	23.6	51.7	203.9
27	35.4	3.4	4.4	5.4	6.6	5.7	26.7	65.0	42.0	23.4	50.9	39.8	43.5	19.0	39.5	55.0	38.1	43.6	12.2	3.8	4.5	6.2	6.4	59.3	26.7	65.0
28	51.3	80.8	33.0	71.2	57.8	44.1	61.4	41.3	29.2	7.8	5.4	24.0	42.9	19.4	12.9	5.5	5.3	11.1	16.5	9.3	12.0	30.1	7.4	2.0	28.4	80.8
29	1.6	1.3	4.4	2.6	2.8	6.8	11.9	36.5	70.1	48.1	22.1	10.7	29.3	48.8	23.5	24.2	33.6	4.1	18.2	3.3	46.0	41.3	8.8	2.5	20.9	70.1
30	1.5	29.8	40.2	75.9	90.1	54.5	67.7	57.8	46.0	58.2	47.3	84.8	68.9	42.8	59.0	44.4	41.5	24.7	11.7	3.4	2.0	3.6	7.6	2.7	40.3	90.1
31	5.3	11.4	11.9	8.5	8.6	8.6	36.9	40.7	44.7	48.2	59.2	67.8	94.3	72.8	55.9	55.2	44.1	27.4	12.8	14.9	17.3	41.3	47.1	28.7	36.0	94.3
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	29.7	28.7	34.1	38.0	44.7	48.6	61.6	97.9	129.7	120.3	106.8	80.8	78.6	66.3	64.7	60.4	55.2	45.3	48.8	48.3	42.9	42.2	35.3	28.8		
MAX	179.8	119.4	237.6	179.9	177.0	186.4	221.0	473.1	450.0	432.5	320.3	271.5	301.9	269.7	296.3	299.5	241.9	154.6	230.0	252.1	244.4	223.0	207.5	106.6		



Number of Non-Zero Readings	744		
Maximum 1-HR Average	473.1 UG/M3		
Maximum 24-HR Average	158.2 UG/M3		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	71.41	Monthly Average	59.9 UG/M3

Entrance TSP (μg/m^3) – October 2018

Day	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	MAX
1	16.2	8.5	12.1	14.9	8.8	9.2	9.0	10.2	14.0	17.3	20.5	44.9	234.7	91.9	10.7	16.9	32.7	25.8	15.0	17.0	10.0	24.7	6.0	4.0	28.1	234.7
2	4.0	4.1	4.0	4.2	4.6	10.2	10.7	8.8	8.1	8.3	8.0	7.8	7.9	6.4	5.9	4.1	8.4	5.3	7.2	4.6	3.6	2.9	4.8	3.6	6.2	10.7
3	4.4	3.3	3.4	3.1	3.1	5.5	19.0	24.6	52.6	203.7	272.3	40.9	9.5	13.8	7.5	10.6	6.1	6.5	15.8	29.1	5.6	7.8	4.2	5.6	31.6	272.3
4	4.5	7.1	9.4	11.5	9.7	17.0	20.7	21.2	24.5	221.8	237.8	117.4	59.1	65.0	54.8	42.2	121.9	16.9	7.0	12.3	10.1	16.1	16.3	13.9	47.4	237.8
5	10.0	7.5	6.1	7.1	11.6	10.6	7.8	28.5	369.0	215.9	311.2	133.0	90.7	81.6	64.4	65.7	47.7	98.2	273.5	193.4	117.0	143.1	68.4	52.0	100.6	369.0
6	7.2	9.3	6.8	6.0	14.9	19.3	18.0	21.8	635.0	665.9	400.2	121.5	34.2	50.6	33.8	16.2	90.3	18.3	22.3	7.4	6.0	10.3	14.5	17.4	93.6	665.9
7	23.6	16.4	13.4	19.9	24.2	24.5	18.9	44.4	208.4	397.8	214.2	87.1	35.1	36.4	51.5	100.7	133.2	97.0	32.2	25.2	9.4	6.6	18.0	24.5	69.3	397.8
8	19.0	10.8	7.5	6.7	15.0	11.4	14.0	3.0	4.6	3.9	8.9	8.1	2.5	1.6	5.9	3.5	3.1	3.0	6.4	7.3	7.2	10.0	5.6	4.9	7.2	19.0
9	3.1	2.2	1.6	2.6	2.1	3.6	10.4	10.3	12.0	21.0	15.6	4.4	9.4	12.0	2.6	34.8	4.3	4.2	7.0	6.7	5.9	8.5	9.1	10.2	8.5	34.8
10	11.1	9.1	6.3	16.7	25.5	16.2	8.8	15.5	17.0	84.6	338.0	381.5	640.3	802.5	855.0	799.7	768.2	32.9	36.9	17.6	20.1	13.4	7.1	10.7	205.6	855.0
11	6.6	7.6	10.0	13.0	11.1	14.3	26.5	53.3	1108.5	1441.7	591.6	285.1	242.2	301.0	216.9	187.9	297.6	189.3	152.5	193.3	192.2	110.8	139.0	58.7	243.8	1441.7
12	77.0	130.6	149.7	71.2	216.3	57.6	117.0	303.2	336.3	673.4	1098.6	678.0	218.1	295.5	372.9	171.8	236.0	360.5	38.7	6.7	0.3	0.3	0.6	1.0	233.8	1098.6
13	1.0	0.5	0.9	1.5	1.2	2.5	4.7	5.6	4.7	3.0	2.7	3.7	13.4	7.1	2.3	0.7	1.6	7.3	3.0	1.8	3.5	2.5	1.1	1.0	3.2	13.4
14	1.7	1.9	5.9	12.0	43.5	465.0	597.2	641.9	232.5	181.9	149.8	65.4	68.0	30.6	46.9	57.4	65.3	59.7	46.1	70.0	75.5	32.0	40.8	62.7	127.2	641.9
15	26.6	99.3	67.8	69.8	130.2	199.6	64.4	226.2	328.3	385.8	338.6	223.8	232.2	72.2	244.3	146.3	65.1	86.3	41.6	338.8	217.6	154.5	122.3	68.0	164.6	385.8
16	22.9	11.8	19.7	162.1	112.4	158.5	489.3	463.0	311.7	546.0	651.7	321.2	226.4	150.5	218.1	126.5	76.1	307.0	430.1	276.0	306.9	291.1	221.1	255.0	256.5	651.7
17	222.9	297.4	243.4	99.9	103.4	236.4	430.3	652.8	899.3	488.4	477.9	489.2	503.0	208.9	159.2	228.8	161.9	107.3	178.1	96.9	229.0	545.5	383.6	148.9	316.3	899.3
18	43.0	37.2	119.6	209.1	216.7	226.6	266.6	1230.6	1181.9	638.4	325.6	443.2	549.5	488.1	419.8	301.1	145.8	82.9	327.2	264.3	117.3	85.0	15.6	29.9	323.5	1230.6
19	36.6	15.6	105.2	21.2	133.4	47.2	135.2	342.7	405.7	337.4	584.2	296.0	227.9	96.5	237.9	357.9	262.2	273.4	78.4	215.0	311.7	494.9	480.0	228.5	238.5	584.2
20	520.5	315.4	804.6	415.4	230.9	326.9	338.4	647.1	720.9	305.3	48.7	161.8	252.0	297.7	190.3	66.0	37.1	23.8	45.5	46.7	43.3	21.1	72.1	67.9	250.0	804.6
21	150.6	137.9	123.7	119.8	196.7	116.2	165.3	152.9	184.1	227.8	184.9	57.0	25.3	23.4	112.2	153.9	110.5	120.8	103.3	64.0	62.0	88.8	52.2	76.5	117.1	227.8
22	51.0	81.9	212.4	419.9	430.0	280.9	272.0	258.6	731.5	751.6	801.8	622.9	590.6	362.8	147.0	281.6	351.5	187.2	174.6	81.8	304.2	144.4	198.4	135.6	328.1	801.8
23	146.3	115.5	94.5	249.5	245.9	313.3	637.5	988.1	610.7	546.2	648.6	698.8	564.2	408.5	119.6	192.8	416.4	232.9	339.7	447.8	575.6	308.4	120.3	217.9	385.0	988.1
24	206.5	212.9	193.6	308.9	501.6	366.4	283.6	574.5	1149.5	936.5	404.7	191.2	164.8	149.5	275.6	221.9	59.3	48.1	50.3	12.7	52.9	24.7	108.8	14.9	271.4	1149.5
25	30.8	21.8	13.1	28.6	11.7	53.6	287.8	480.3	1128.7	383.6	371.3	247.0	294.5	496.0	623.8	104.3	84.4	41.3	8.8	12.8	19.7	14.5	9.0	24.5	199.7	1128.7
26	120.4	18.0	6.5	89.7	118.1	44.5	57.4	600.2	433.7	380.8	160.8	84.5	74.5	132.8	183.1	123.0	55.0	34.5	78.3	193.4	38.7	32.2	47.1	77.4	132.7	600.2
27	94.2	9.6	5.9	10.4	19.2	16.0	65.6	189.7	110.3	66.6	152.7	105.1	117.2	48.4	109.8	147.4	90.8	96.0	35.0	4.5	7.4	10.4	9.0	167.8	70.4	189.7
28	137.7	155.8	62.8	143.3	91.4	77.2	98.0	82.1	61.9	11.3	4.7	39.1	82.0	26.7	20.2	10.9	6.6	28.9	56.3	10.4	14.2	42.2	18.4	2.1	53.5	155.8
29	1.6	6.8	6.0	16.0	3.6	9.4	25.5	64.6	122.4	103.2	48.2	17.6	76.6	136.2	66.5	61.8	93.1	7.9	47.1	5.4	93.1	66.8	13.0	3.5	45.7	136.2
30	2.6	66.9	70.2	124.8	187.8	103.9	182.5	146.3	155.1	128.2	127.5	303.6	233.2	140.5	144.0	110.5	105.2	64.4	28.7	11.6	3.3	7.2	11.5	2.1	102.6	303.6
31	5.8	8.2	9.1	27.4	7.5	11.9	71.8	105.6	109.9	136.1	166.1	203.7	313.0	247.7	206.7	232.3	134.1	68.6	33.0	49.1	35.6	144.0	142.8	49.8	105.0	313.0
NO.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	744	100%
MEAN	64.8	59.1	77.3	87.3	101.0	105.0	153.3	270.9	376.5	339.1	295.7	209.2	199.7	170.4	168.0	141.3	131.3	88.3	87.7	87.9	93.5	92.4	76.2	59.4		
MAX	520.5	315.4	804.6	419.9	501.6	465.0	637.5	1230.6	1181.9	1441.7	1098.6	698.8	640.3	802.5	855.0	799.7	768.2	360.5	430.1	447.8	575.6	545.5	480.0	255.0		



Number of 24HR Exceedences	19 Proposed Guideline		
Number of Non-Zero Readings	744		
Maximum 1-HR Average	1441.7 UG/M3		
Maximum 24-HR Average	385.0 UG/M3		
		Opperational Time	744 HRS
Monthly Calibration	0	Opperational Uptime	100.0 %
Standard Deviation	204.5	Monthly Average	147.3 UG/M3

MetOne BAM $PM_{2.5}$ Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	October 24, 2018
START TIME (MST):	13:00	END TIME (MST):	14:15

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM2.5	Audit Device S/N	682
Serial Number	T19087	Certification Date	03-May-18

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	11.7	647	0.00	16.7	14:12
As Found Data	MEASURED (AF)	11.7	647	0.30	16.30	14:11
	AF Difference (AF-I)	0.0	0	0.30	-0.40	0:01
Adjusted Data	MEASURED (M)	11.7	647	0.30	16.69	14:12
	Adj Difference (M-I)	0.0	0	0.30	-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: 1/3 roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed self-test, all passed

MetOne BAM PM_{10} Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	October 24, 2018
START TIME (MST):	14:20	END TIME (MST):	14:45

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	PM10	Audit Device S/N	682
Serial Number	A3315	Certification Date	03-May-18

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	11.6	647	0.00	16.7	14:35
As Found Data	MEASURED (AF)	11.6	647	0.60	16.40	14:36
	AF Difference (AF-I)	0	0	0.60	-0.30	0:01
Adjusted Data	MEASURED (M)	11.6	647	0.60	16.70	14:35
	Adj Difference (M-I)	0.0	0	0.60	0.00	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: new roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed self-test, all passed

MetOne BAM TSP Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	October 24, 2018
START TIME (MST):	14:00	END TIME (MST):	15:30

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	682
Serial Number	A3589	Certification Date	03-May-18

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	12.4	647	0.00	16.7	15:31
As Found Data	MEASURED (AF)	12.4	647	0.90	16.55	15:30
	AF Difference (AF-I)	0.0	0	0.90	-0.15	0:01
Adjusted Data	MEASURED (M)	12.4	647	0.90	16.70	15:31
	Adj Difference (M-I)	0.0	0	0.90	0.00	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: new roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Leak check has been increasing and it is now near the max allowed.

Replaced BAM monitor with spare unit while maintenance is performed on this one.

MetOne BAM TSP Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	October 24, 2018
START TIME (MST):	15:30	END TIME (MST):	17:00

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	682
Serial Number	F4643	Certification Date	03-May-18

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	10.4	648	0.00	16.7	10:56
As Found Data	MEASURED (AF)	10.4	648	0.80	16.30	10:56
	AF Difference (AF-I)	0.0	0	0.80	-0.40	0:00
Adjusted Data	MEASURED (M)	10.4	648	0.80	16.69	10:56
	Adj Difference (M-I)	0.0	0	0.80	-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: 1/3 roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Temporary unit installed while s/nA3589 gets serviced in Calgary

Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon

Reason: Routine | Installation | Removal | Other:

Start Time (MST)	10:00		End Time (MST)	14:35	
Barometric Pressure	648	mmHg	Station Temperature	22.3	Deg C
Calibrator	Sabio 2010		Serial Number	9700712	
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	1.005439	0.996136	0.990770
	Data Offset	1.514421	2.418365	2.643456
After	Data Slope	1.000689	0.999509	0.995989
	Data Offset	1.650618	3.100097	2.888461
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	0.957		0.962	
NO Offset	-0.600	mV	-0.6	mV
NOX Slope	0.952		0.962	
NOX Offset	0.6	mV	0.6	mV
HVPS	771.0	V	771	V
Moly Temp	314.0	degC	314.2	degC
O3 Flow	80.0	ccm	81	ccm
RxCell Press	4.5	inHg	4.4	inHg
Sample press	23.9	inHg	23.7	inHg
Sample flow	439	ccm	436	ccm

Notes: Span adjusted

Calibration Report

Parameter **NOx-NO-NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date: October 24, 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	-1.4	-1.1	-1.6	N/A	N/A
1	5000	39.00	398.6	397.8	0.8	397.0	397.7	-1.7	1.0041	1.0004
2	5000	20.00	205.2	204.8	0.4	200.1	201.1	-1.9	1.0254	1.0182
3	7000	14.00	102.8	102.6	0.2	98.9	98.8	-1.2	1.0399	1.0385
AFZ	5000	0	0.0	0.0	0.0	-1.4	-1.1	-1.6	0.0000	0.0000
AFS	5000	39	398.6	397.8	0.8	389.9	391.0	-2.1	1.0224	1.0174
							Average Correction Factor		1.0231	1.0190

As Found Concentrations: NO_X= 393.7 NO= 394.8 As Found Percent Change NO_X= -1.2% NO= -0.8%

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	-1.1	-1.1	0.0	-1.4	-1.1	-1.6	N/A	N/A	N/A	N/A
NO point	396.0	396.0	0.0	396.0	396.0	-0.9	1.0000	1.0000	N/A	N/A
0.70V	396.0	90.3	305.7	395.3	90.3	304.0	1.0017	1.0000	1.0058	99.4%
0.45V	396.0	228.8	167.2	395.2	228.8	165.2	1.0020	1.0000	1.0120	98.8%
0.3V	396.0	315.8	80.2	395.5	315.8	78.6	1.0012	1.0000	1.0208	98.0%
					Average Correction Factor		1.0016	1.0000	1.0129	98.7%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	1.4	-1.5	1.5	ppb	2.0	0.3	2.0	ppb
Auto span	391.6	-1.4	391.9	ppb	392.4	0.3	391.3	ppb

Calibration Performed By: Darrin Pike

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

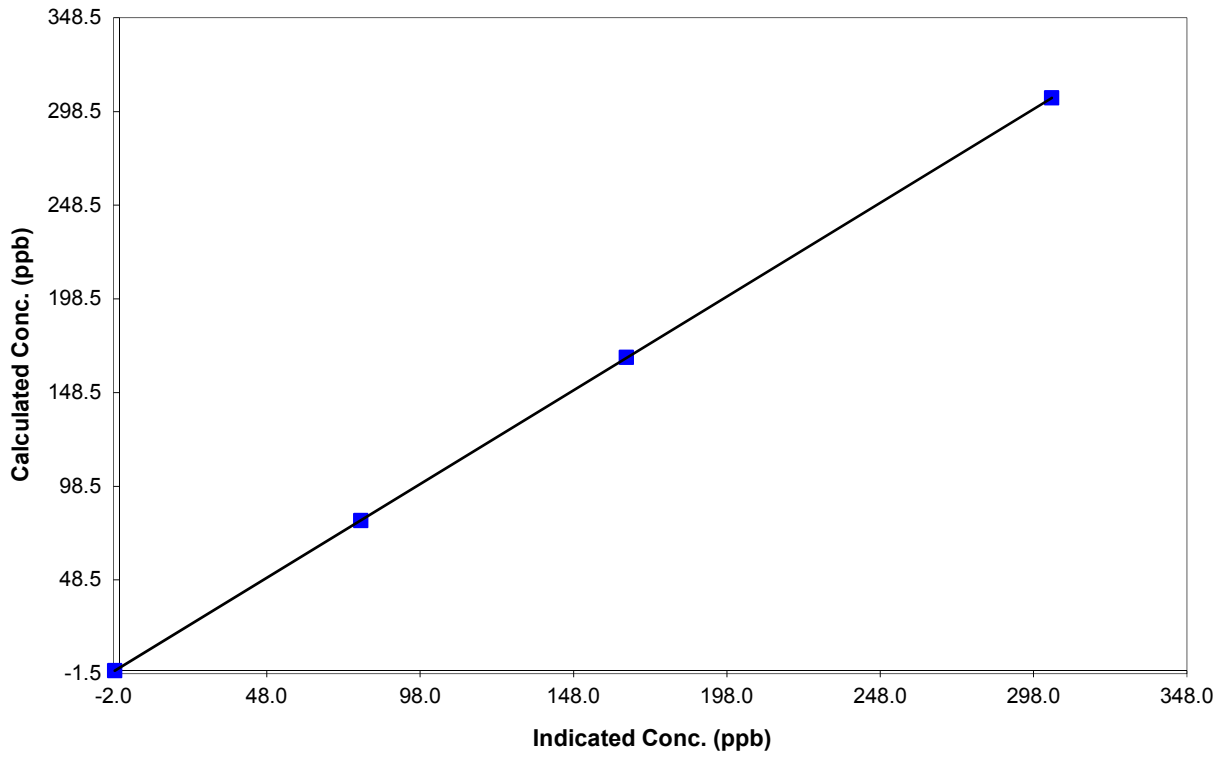
Station Information

Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:35
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.6	N/A		
305.7	304.0	1.0058	Correlation Coefficient	0.999999
167.2	165.2	1.0120		
80.2	78.6	1.0208	Slope	1.000689
			Intercept	1.650618

NO_2 Calibration Curve



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

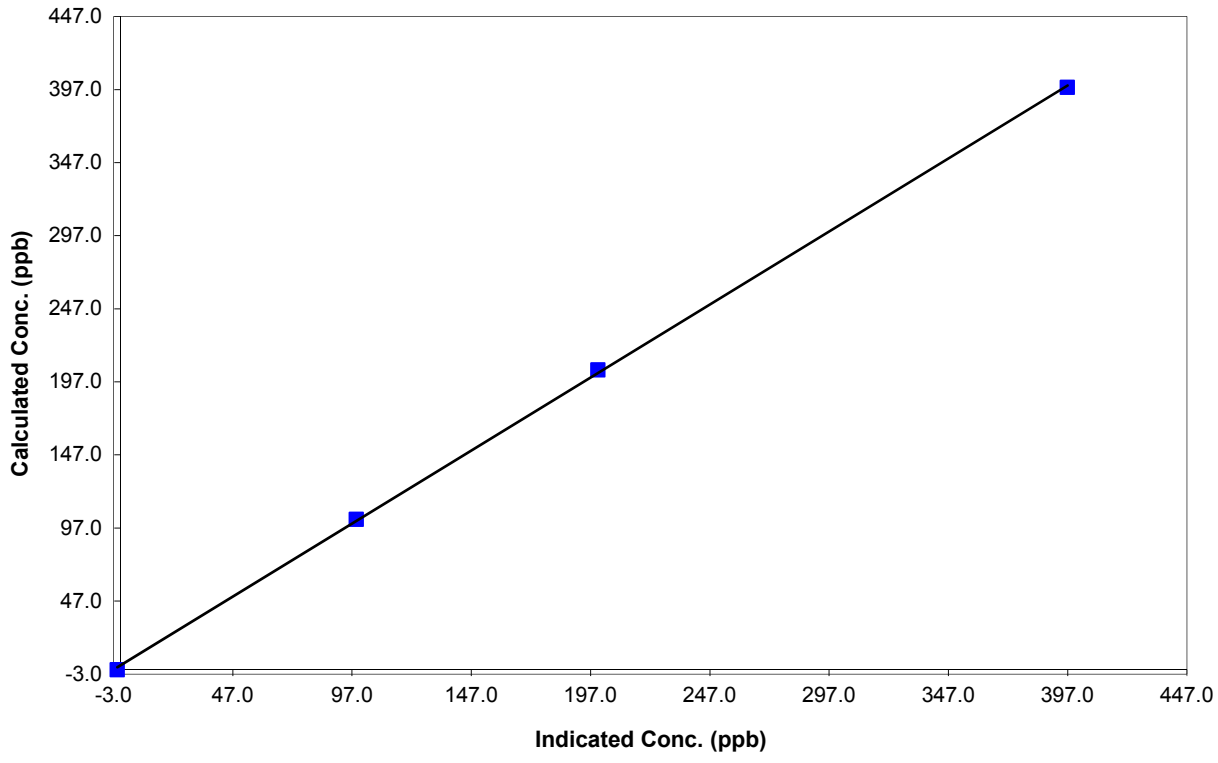
Station Information

Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:35
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.4	N/A		
398.6	397.0	1.0041	Correlation Coefficient	0.999889
205.2	200.1	1.0254		
102.8	98.9	1.0399	Slope	0.999509
			Intercept	3.100097

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

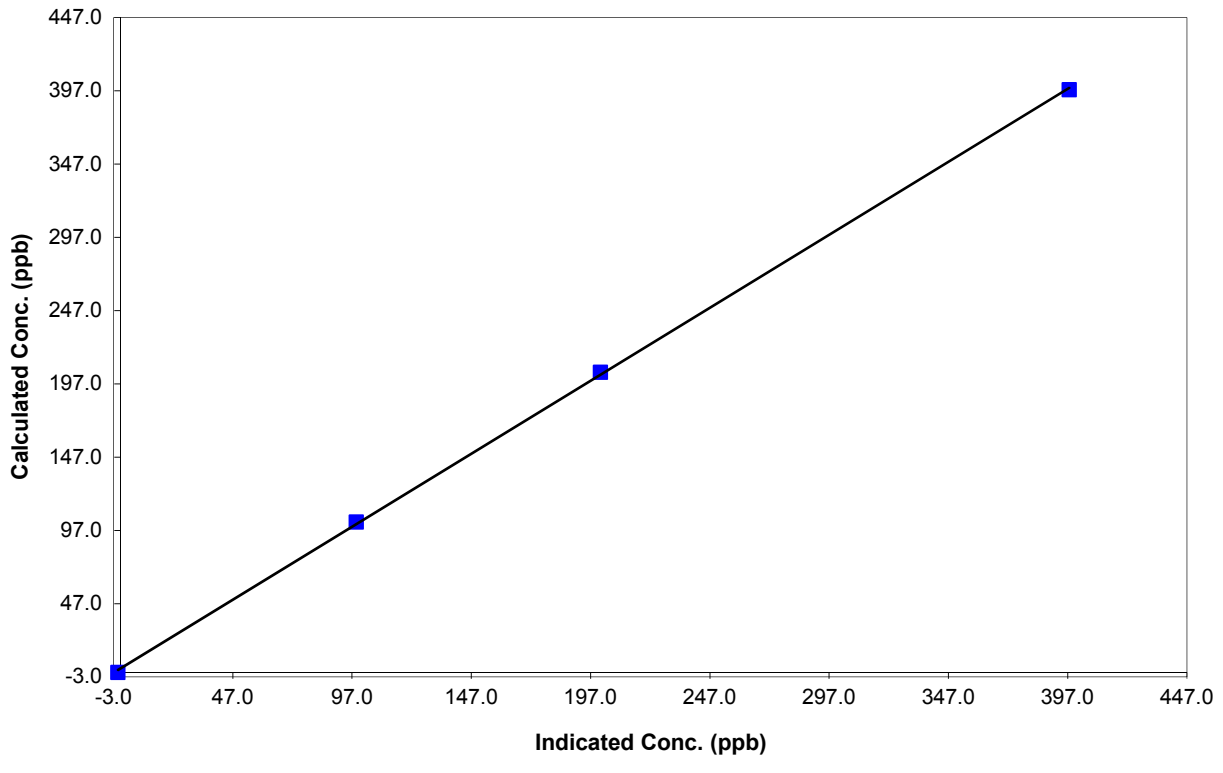
Station Information

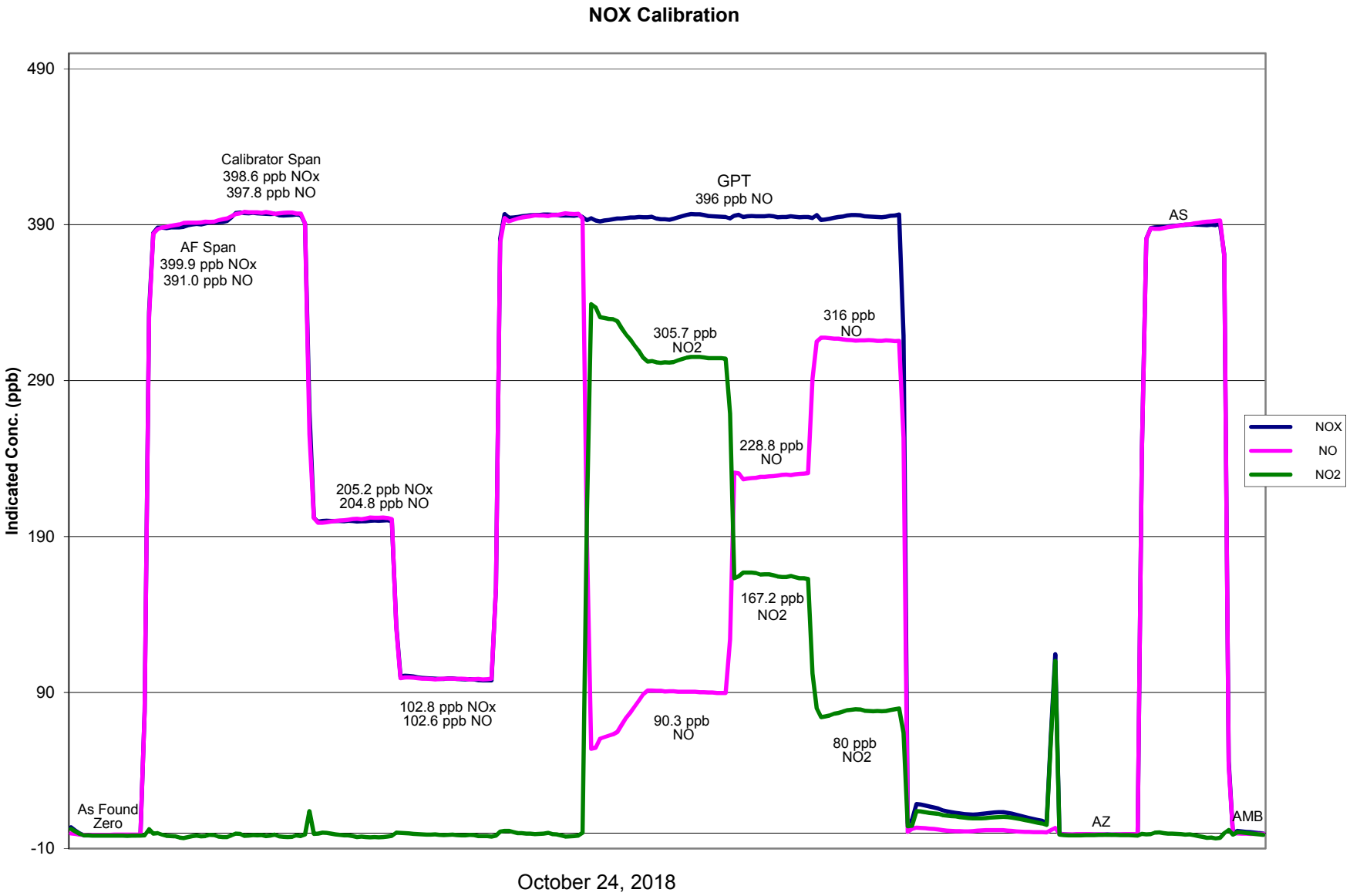
Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:35
Analyzer make	T200	Analyzer serial #	642

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-1.1	N/A		
397.8	397.7	1.0004	Correlation Coefficient	0.999901
204.8	201.1	1.0182		
102.6	98.8	1.0385	Slope	0.995989
			Intercept	2.888461

NO Calibration Curve




NOX Calibration
490
390
290
190
90
-10
Indicated Conc. (ppb)
Calibrator Span
398.6 ppb NOx
397.8 ppb NO
AF Span
399.9 ppb NOx
391.0 ppb NO
205.2 ppb NOx
204.8 ppb NO
102.8 ppb NOx
102.6 ppb NO
As Found
Zero
GPT
396 ppb NO
305.7 ppb
NO2
316 ppb
NO
228.8 ppb
NO
167.2 ppb
NO2
90.3 ppb
NO
80 ppb
NO2
AS
AZ
AMB
NOX
NO
NO2
October 24, 2018

Calibration Report

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

WSP AIR QUALITY MONITORING

Station Information

Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Reason: Routine	Install	Removal	Other:
Start Time (MST)	10:00	End Time (MST)	14:35
Barometric Pressure	648 mmHg	Station Temperature	22.3 Deg C
Calibrator	SABIO 2010	Serial Number	9700712
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	0.998253	Calculated slope	0.992023
Calculated intercept	1.674779	Calculated intercept	2.490198
Analyzer make	API Model 102A	Analyzer serial #	393

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Slope	1.177		1.203	
Offset	43.2	mV	43.2	mV
Pressure	23.9	in Hg	23.8	in Hg
Sample Flow	418	ccm	404	ccm
UV Lamp	3436	mV	3335	mV
HVPS	690	V	690	V
PMT Temp	7.3	degC	7.4	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	-0.8	N/A
5000	39.00	393.2	394.8	0.9958
5000	20.00	202.4	200.3	1.0107
7000	14.00	101.4	98.3	1.0315
5000	0.00	0.0	-0.8	As found zero
5000	39.00	393.2	381.2	As found span
			Average Correction Factor	1.0127

Calculated value of As Found Response: 383.1 ppb Percent Change of As Found: 2.6%

	before calibration		after calibration	
Auto zero	-0.3	ppb	-0.4	ppb
Auto span	385.3	ppb	393.0	ppb

Notes: Span adjusted

Calibration Performed By: Darrin Pike

Calibration Summary

Parameter **SO2**

Air Monitoring Network **Lafarge - Exshaw**

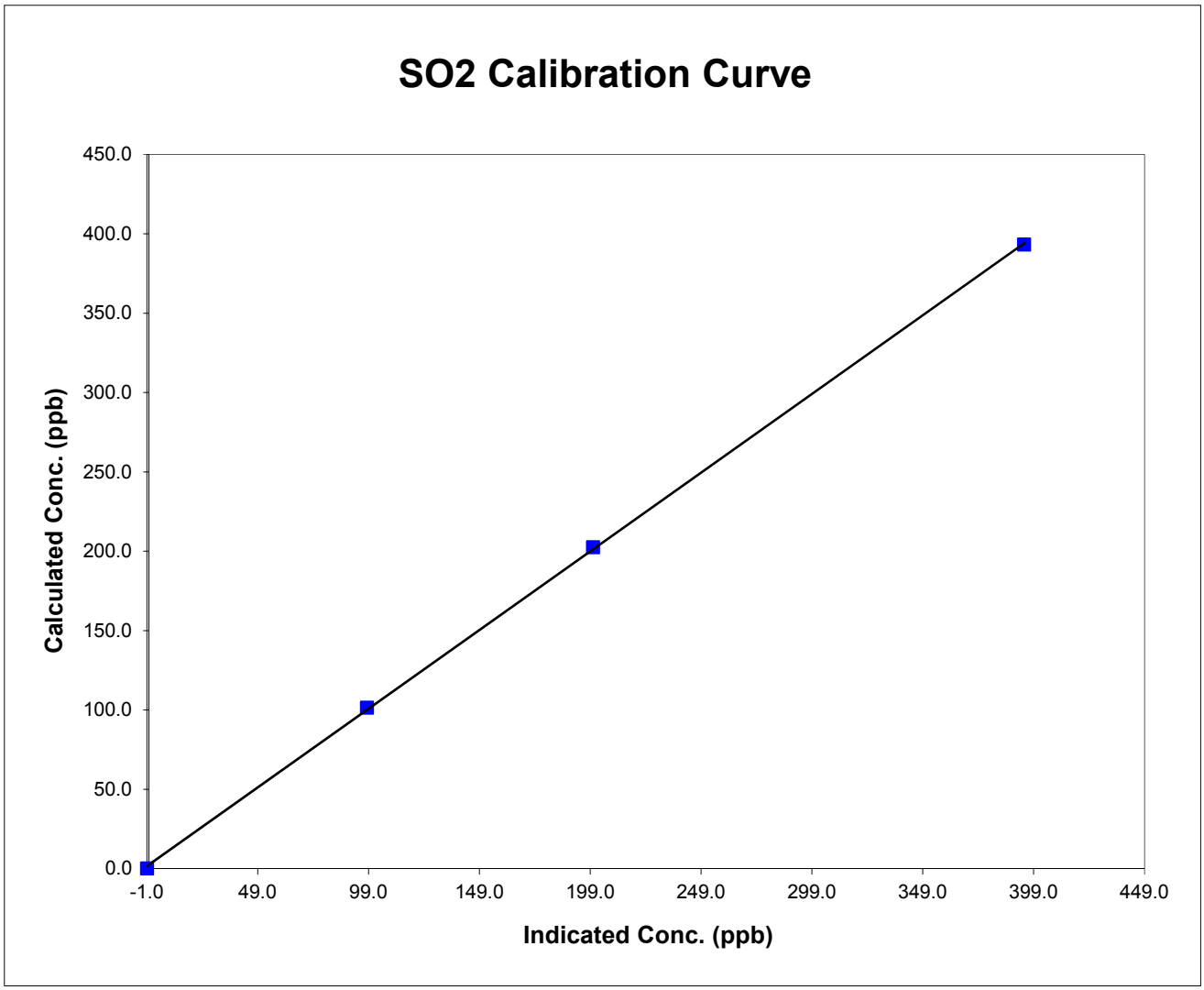
WSP AIR QUALITY MONITORING

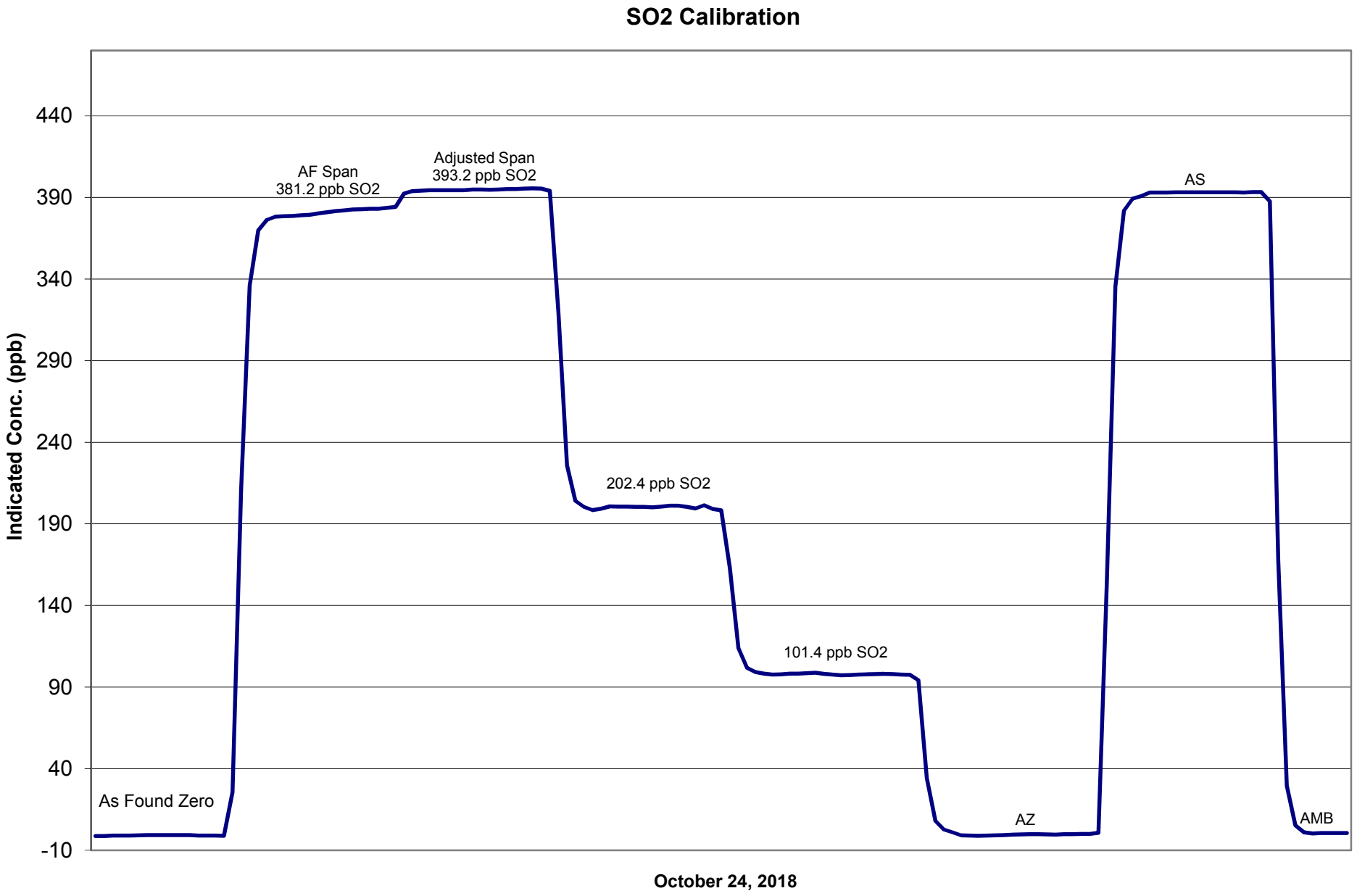
Station Information

Calibration Date	October 24, 2018	Previous Calibration	September 24, 2018
Station Number	N/A	Station Location	Exshaw - Lagoon
Start Time (MST)	10:00	End Time (MST)	14:35
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	-0.8	N/A		
393.2	394.8	0.9958	Correlation Coefficient	0.999915
202.4	200.3	1.0107		
101.4	98.3	1.0315	Slope	0.992023
			Intercept	2.490198




SO2 Calibration
Indicated Conc. (ppb)
440
390
340
290
240
190
140
90
40
-10
AF Span
381.2 ppb SO2
Adjusted Span
393.2 ppb SO2
202.4 ppb SO2
101.4 ppb SO2
As Found Zero
AZ
AS
AMB
October 24, 2018

Field Service Report

Air Monitoring Network / Client: Lafarge

Station Information

Visit Date: October 24, 2018
Station Location: Exshaw
Reason for Visit: monthly calibrations
Arrival Time: 09:30
Weather Conditions: Clear, 10°C

Project Number: 171-00556-00
Station Name: Lagoon

Departure Time: 16:30

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
DP	TR	3	2	47mm sample filter
DP	CAL	7		

Station Information

Time (MST) Comments

9:30 – Signed in at Lafarge Plant

9:45 - Arrived at Lagoon station. Started unloading and setting up gear

09:45 – Flagged all PM channels for calibrations.

10:00 - Started AF calibrator Zero on NOx and SO2.

10:20 – AF Zero was good. Started AF calibrator Span.

10:38 - NOx/SO2 spans adjusted

11:31 - SO2 calibration completed, no issues noted. NOx GPT reference point started, no issues noted in the first portion of the calibration.

12:16 - Started introducing O3 for GPT portion of calibration.

13:10 - GPT portion of calibration went well, no issues noted. Started AIC on NOx and SO2.

14:15 - BAM PM2.5 calibration completed with no issues.

14:45 - BAM PM10 calibration completed with no issues

Field Service Report

15:30 - BAM TSP is near the fail point for leak test, getting 0.9LPM and the max allowed is 1LPM.
- Replaced unit with a spare
- Calibration was completed on spare unit with no issues.

15:40 Left station & proceeded to the Grimm sites

West Sharp:
Measured Sample flow = 1.1 LPM
Sharp AmbT = 12.8 degC
Audit AmbT = 12.6 degC

Berm Sharp:
Measured Sample flow = 1.14 LPM
Sharp AmbT = 11 degC
Audit AmbT = 11.4 degC

Entrance Sharp:
Measured Sample flow = 1.1 LPM
Sharp AmbT = 11.6 degC
Audit AmbT = 12 degC

16:30 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

Technician: Darrin Pike

Ref #: Click here to enter text.

MetOne BAM TSP Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Lagoon	DATE:	October 25, 2018
START TIME (MST):	9:30	END TIME (MST):	12:00

MONITOR INFO / PARAMETER VALUES:

Make/Model	MetOne BAM	Audit Device Model	Delta Cal
Configuration	TSP	Audit Device S/N	682
Serial Number	A3589	Certification Date	03-May-18

AUDIT / CALIBRATION RESULTS:

		Ambient Temp. (˚ C)	Ambient Pres. (mmHg)	Leak Check (L/min)	Flow Rate (lpm)	Time settings (hh:mm)
	Audit values (I)	10.4	648	0.00	16.7	10:56
As Found Data	MEASURED (AF)	10.4	648	0.30	16.30	10:56
	AF Difference (AF-I)	0.0	0	0.30	-0.40	0:00
Adjusted Data	MEASURED (M)	10.4	648	0.30	16.69	10:56
	Adj Difference (M-I)	0.0	0	0.30	-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: Full roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

New Nozzle assembly installed, all nozzle O-rings replaced. BAM installed back in service after maintenance.

Performed leak check and full flow calibration. Performed self-tests, all passed.

Field Service Report

Air Monitoring Network / Client: Lafarge

Station Information

Visit Date: October 25, 2018
Station Location: Exshaw
Reason for Visit: monthly calibrations
Arrival Time: 09:30
Weather Conditions: Windy, , 6°C

Project Number: 171-00556-00
Station Name: Lagoon

Departure Time: 11:30

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
DP	TR	3		
DP	CAL	2		

Station Information

Time (MST) Comments

09:00 – arrived on site and signed in at the plant

09:45 – arrived at lagoon site

10:00 – Replaced the spare unit with the s/n A3589, we performed maintenance in Calgary where the nozzle assy and all o-rings were replaced. Leak check is now well within limits.

11:00 – BAM calibration was completed with no issues, minor adjustments to flow and temp.

11:30 – signed out at plant and left site

Technician: Darrin Pike

Ref #: 10902

MetOne BAM $PM_{2.5}$ Calibration

AIR QUALITY MONITORING

STATION:	Lafarge	OPERATOR:	Darrin Pike
LOCATION:	Exshaw - Windridge	DATE:	October 17, 2018
START TIME (MST):	12:30	END TIME (MST):	12:50

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)	13.0	655	0.00	16.7	12:47
As Found Data	MEASURED (AF)	12.0	655	0.50	16.65	12:48
	AF Difference (AF-I)	-1.0	0	0.50	-0.05	0:01
Adjusted Data	MEASURED (M)	13.0	655	0.50	16.65	12:47
	Adj Difference (M-I)	0.0	0	0.50	-0.05	0:00
	LIMITS	**± 2.0 ^{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: 1/2 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:	October 17, 2018
START TIME (MST):	12:40	END TIME (MST):	13:10

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)	13.0	654	0.00	16.7	13:05
As Found Data	MEASURED (AF)	13.0	654	0.40	16.75	13:06
	AF Difference (AF-I)	0.0	0	0.40	0.05	0:01
Adjusted Data	MEASURED (M)	13.0	654	0.40	16.75	13:05
	Adj Difference (M-I)	0.0	0	0.40	0.05	0:00
	LIMITS	**± 2.0 ^{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: 1/2 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:	October 17, 2018
START TIME (MST):	12:55	END TIME (MST):	13:30

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)	14.4	654	0.00	16.7	13:22
As Found Data	MEASURED (AF)	14.4	654	0.50	16.74	13:23
	AF Difference (AF-I)	0.0	0	0.50	0.04	0:01
Adjusted Data	MEASURED (M)	14.4	654	0.50	16.74	13:22
	Adj Difference (M-I)	0.0	0	0.50	0.04	0:00
	LIMITS	**± 2.0 ^{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: 1/2 roll

Nozzle Inspection / cleanliness: clean

COMMENTS:

Performed self-tests, all passed.

Field Service Report

Air Monitoring Network / Client: Lafarge

Station Information

Visit Date: October 17, 2018
Station Location: Exshaw
Reason for Visit: monthly calibrations
Arrival Time: 12:30
Weather Conditions: Clear, 18°C

Project Number: 171-00556-00
Station Name: Windridge

Departure Time: 14:00

Record of Hours ***Parts Used***

Employee	Category	Hours	Qty	Parts Description
DP	TR	3		
DP	CAL	2		

Station Information

Time (MST) Comments

12:30 – Arrived at Lafarge plant and signed in

12:15 - Flagged all PM channels at Windridge site for BAM 1020 calibrations.

12:50 - BAM PM2.5 calibration completed with no issues.

13:10 - BAM PM10 calibration completed with no issues.

13:30 - BAM TSP calibration unable to complete due to rain.

14:00 – Left site

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

Technician: Darrin Pike

Ref #: 10900