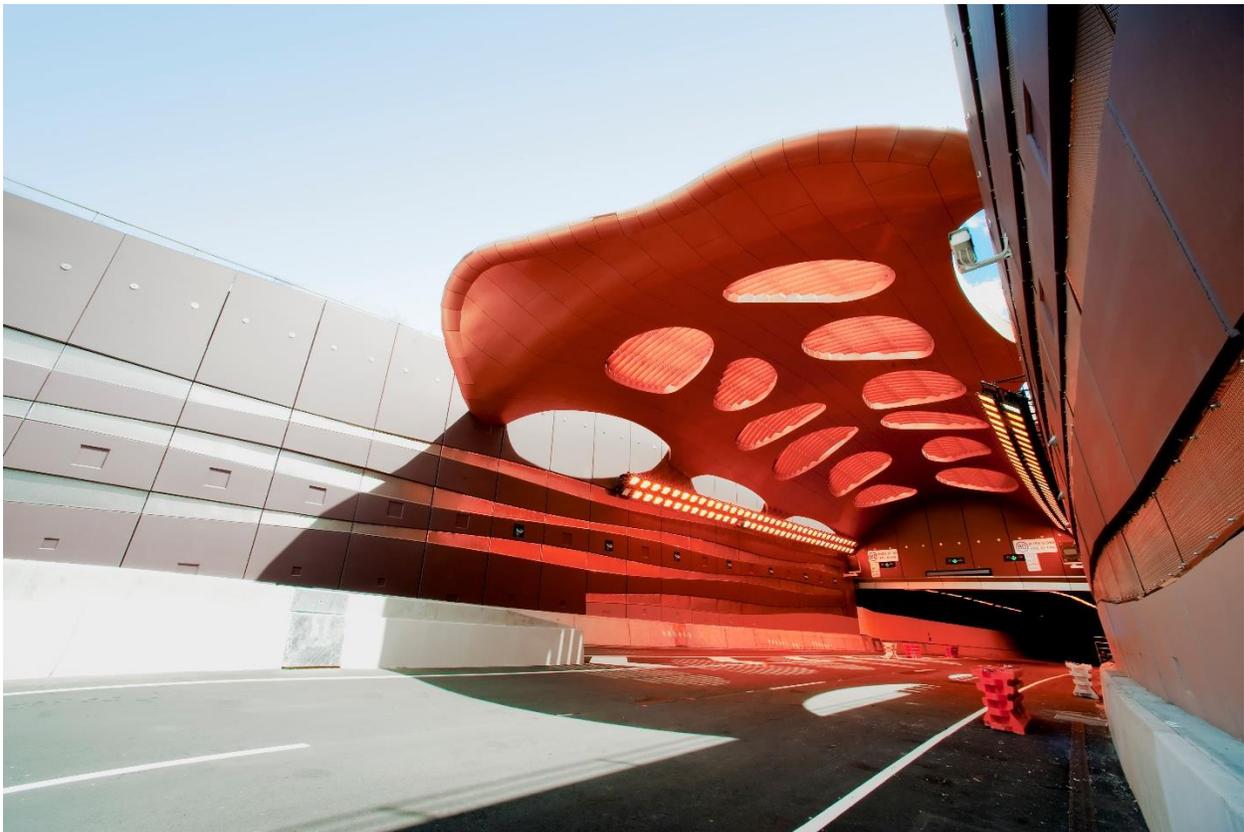


LAFARGE CANADA INC.

AMBIENT AIR QUALITY MONTHLY REPORT

APRIL 2019

MAY 21, 2019



wsp



AMBIENT AIR QUALITY MONTHLY REPORT

APRIL 2019

LAFARGE CANADA INC.

PROJECT NO.: 171-00556-00
DATE: MAY 21, 2019

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May 21, 2019

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

Attention: Janet Brygger

Dear Ms. Brygger

Subject: Ambient Air Quality Monthly Report - April 2019

The operational uptime for the meteorological systems and all analyzers at the Lagoon station was 99.9% in April. There were zero exceedances of the 24-hour TSP Alberta Ambient Air Quality Objectives (AAAQOs), zero exceedances of the 24-hour PM_{2.5} AAAQOs, and zero exceedances of the 1-hour PM_{2.5} AAAQO in April at the Lagoon monitoring location.

The Windridge station was taken out of operation beginning April 8th as a result of construction work for flood mitigation along Exshaw Creek. The monitor at this station is expected to be re-installed sometime in 2020, after the completion of the construction work.

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: 98.5% at the West monitor due to 10 hours of machine malfunction and 1 hour of machine maintenance; 98.6% at the Berm monitor due to 10 hours of machine malfunction; and 98.6% at the Entrance monitor due to 10 hours of machine malfunction. The West GRIMM monitor recorded zero exceedances of the 24-hour TSP Objective and zero exceedances of the 24-hour PM_{2.5} Objective. The Berm GRIMM had 14 exceedances of the TSP Objective and 1 exceedances of the PM_{2.5} Objective. The Entrance GRIMM monitor exceeded the 24-hour TSP AAAQO for 5 days, and did not exceed the 24-hour PM_{2.5} AAAQO.

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.
Team Leader, Environmental
Management, Vancouver Office

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PREPARED BY



May 21, 2019

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

Date

APPROVED¹ BY *(must be reviewed for technical accuracy prior to approval)*



May 21, 2019

Tyler Abel, M.Sc.
Team Leader, Environmental Management,
Vancouver Region, Environment

Date

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A DATA & CALIBRATION REPORTS

1 INTRODUCTION

This report summarizes the ambient air quality and meteorological data collected at the Lagoon, Windridge, and 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 April 1, 2019 and April 30, 2019.

This monthly report was prepared by Rowena Seto, Junior Air Quality Specialist with WSP, on behalf of Lafarge and was reviewed by Tyler Abel, Team Leader of Environmental Management in the Vancouver Region at WSP.

1.1 EXSHAW CREEK FLOOD MITIGATION

Due to flood mitigation construction at Exshaw creek (Figure 1-1), the Windridge monitor was taken out of operation and removed from the site on April 8, 2019. The monitoring station will be re-installed after the completion of construction in 2020.

Dust created from the flood mitigation work has the potential to impact particulate matter concentrations at the remaining stations.



Figure 1-1 Photo of Flood Mitigation Construction at Exshaw Creek

2 APRIL 2019 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
NO₂ (ppb)	99.9	25.2	0	12.5	-
SO₂ (ppb)	99.9	5.3	0	1.4	0
PM_{2.5} (µg/m³)	99.9	21.2	0 ¹	10.8	0
PM₁₀ (µg/m³)	99.9	173.9	-	38.2	-
TSP (µg/m³)	99.9	251.3	-	64.7	0
Temperature (°C)	99.9	15.8	-	11.0	-
Wind Speed (km/hr) /Direction (Degrees)	99.9	48.6/W	-	31.0/WSW	-
Precipitation (mm)	99.9	1.5 ²	-	10 ³	-

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

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:

- All analyzers and meteorological sensors had 99.9% uptime for the month of April due to one hour of power outage on April 9th.

2.2 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 2-2 West station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	98.5	29.4	0*	13.8	0
PM ₁₀ (µg/m ³)	98.5	136.9	-	22.9	-
TSP (µg/m ³)	98.5	266.2	-	41.8	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:

- The analyzer had 98.5% uptime for the month of April due to 10 hours of machine malfunction between April 8th and April 9th and one hour of maintenance on April 25th.

2.3 BERM GRIMM

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

Table 2-3 Berm station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	98.6	87.6	3*	30.6	1
PM ₁₀ (µg/m ³)	98.6	719.7	-	240.3	-
TSP (µg/m ³)	98.6	2920.8	-	792.7	14

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

Data Quality Notes:

- There was 1 day exceeding the 24-hour PM_{2.5} AAAQG.
- There were 3 hours exceeding the 1-hour PM_{2.5} AAAQG.
- There were 14 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzer had 98.6% uptime for the month of April due to 10 hours of machine malfunction between April 8th and April 9th.

2.4 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 2-4 Entrance station data summary

Parameter	Data Completeness (%)	1-Hour Average		24-hour Average	
		Maximum Concentration	Exceedances of Guidelines	Maximum Concentration	Exceedances of Guidelines
PM _{2.5} (µg/m ³)	98.6	35.4	0*	17.7	0
PM ₁₀ (µg/m ³)	98.6	279.7	-	83.6	-
TSP (µg/m ³)	98.6	797.5	-	196.3	5

* 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 5 days exceeding the 24-hour TSP AAAQG.

Calibration/Maintenance Notes:

- The analyzer had 98.6% uptime for the month of April due to 10 hours of machine malfunction between April 8th and April 9th.

3 LAGOON STATION

The Lagoon trailer contains NO_x, SO₂, TSP, PM₁₀, 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 April 2019.

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

3.1 OPERATIONAL SUMMARY

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

Table 3-1 Instrumentation List at the Lagoon Station

Parameter Measured	Equipment Description	Notes
PM_{2.5} Concentrations	MetOne BAM-1020 FRM Continuous Particulate Monitor	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The PM _{2.5} monitor was calibrated on April 25 th . The monitor had 99.9% uptime in April.
PM₁₀ Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The PM ₁₀ monitor was calibrated on April 25 th . The monitor had 99.9% uptime in April.
TSP Concentrations	MetOne BAM-1020 Continuous Particulate Monitor	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The TSP monitor was calibrated on April 25 th . The monitor had 99.9% uptime in April.
Oxides of Nitrogen	TEI 42C	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” Both monitors were calibrated on April 25 th . The monitors had 99.9% uptime in April.
Sulphur Dioxide	Teledyne API 102A	

Precipitation	MetOne 130 Rain/Snow Gauge	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The monitor had 99.9% uptime in April.
Wind Speed	MetOne Wind Sensor	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The monitors had 99.9% uptime in April.
Wind Direction		
Ambient Temperature	MetOne Ambient Temperature Sensor	Power failure led to one hour of lost operational time on April 9 th at 06:00. This hour was flagged as P for “power failure resulting in lost or invalid data.” The monitor had 99.9% uptime in April.



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

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 April 2019. The wind rose indicates that the winds predominantly came from the west-southwest direction, which is typical for the airshed.

Table 3-2 summarizes the hourly and daily concentrations recorded in April 2019.

Figure 3-3 graphically illustrates the time series for hourly concentrations as well as wind speed and direction, while Figure 3-9 shows daily average concentrations recorded during April 2019 for the pollutants listed in Table 3-2.

Additionally, Figure 3-4 to Figure 3-8 show the histograms of the hourly concentrations of NO₂, SO₂, PM_{2.5}, PM₁₀, and TSP measured at the Lagoon station.

Dust created from the flood mitigation work (section 1.1) has the potential to impact the monitored particulate matter concentrations in the airshed, including at the Lagoon station. Despite this potential, there were zero exceedances of the 24-hour TSP (100 µg/m³) AAAQO, zero exceedances of the 24-hour PM_{2.5} (29 µg/m³) AAAQO, and zero exceedances of the 1-hour PM_{2.5} AAQO. Historically in April, 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 exceedances was 2 days in April 2014. The station has not recorded an exceedance of the PM_{2.5} AAAQO in April since monitoring began in 2010.

Table 3-2 Summary of April 2019 data at Lagoon

Parameter	Guideline / Objectives		Station	Exceedances		Monthly		1-hour					24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration/ Meteorological Variable	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration/ Meteorological Variable	Day	
NO₂ (ppb)	159	-	Lagoon	0	-	0.7	7.0	25.2	3	8	11.8	266.0	12.5	3	99.9
SO₂ (ppb)	172	48	Lagoon	0	0	0.0	0.4	5.3	18	10	24.2	267.4	1.4	17	99.9
PM_{2.5} (µg/m³)	80	29	Lagoon	0	0	0.0	4.2	21.2	5	2	12.9	80.9	10.8	5	99.9
PM₁₀ (µg/m³)	-	-	Lagoon	-	-	0.0	15.7	173.9	3	10	13.3	268.3	38.2	17	99.9
TSP (µg/m³)	-	100	Lagoon	-	0	0.0	24.9	251.3	3	10	13.3	268.3	64.7	17	99.9
Temperature (°C)	-	-	Lagoon	-	-	-5.7	4.4	15.8	22	17	34.3	261.5	11.0	18	99.9
Wind Speed (km/hr)/Direction (degrees)	-	-	Lagoon	-	-	1.5	15.6	48.6/W	22	19	48.6	247.6	31.0/WSW	22	99.9
Precipitation (mm)	-	-	Lagoon	-	-	0.0	0.0	1.5	19	18	15.6	91.4	10.0		99.9

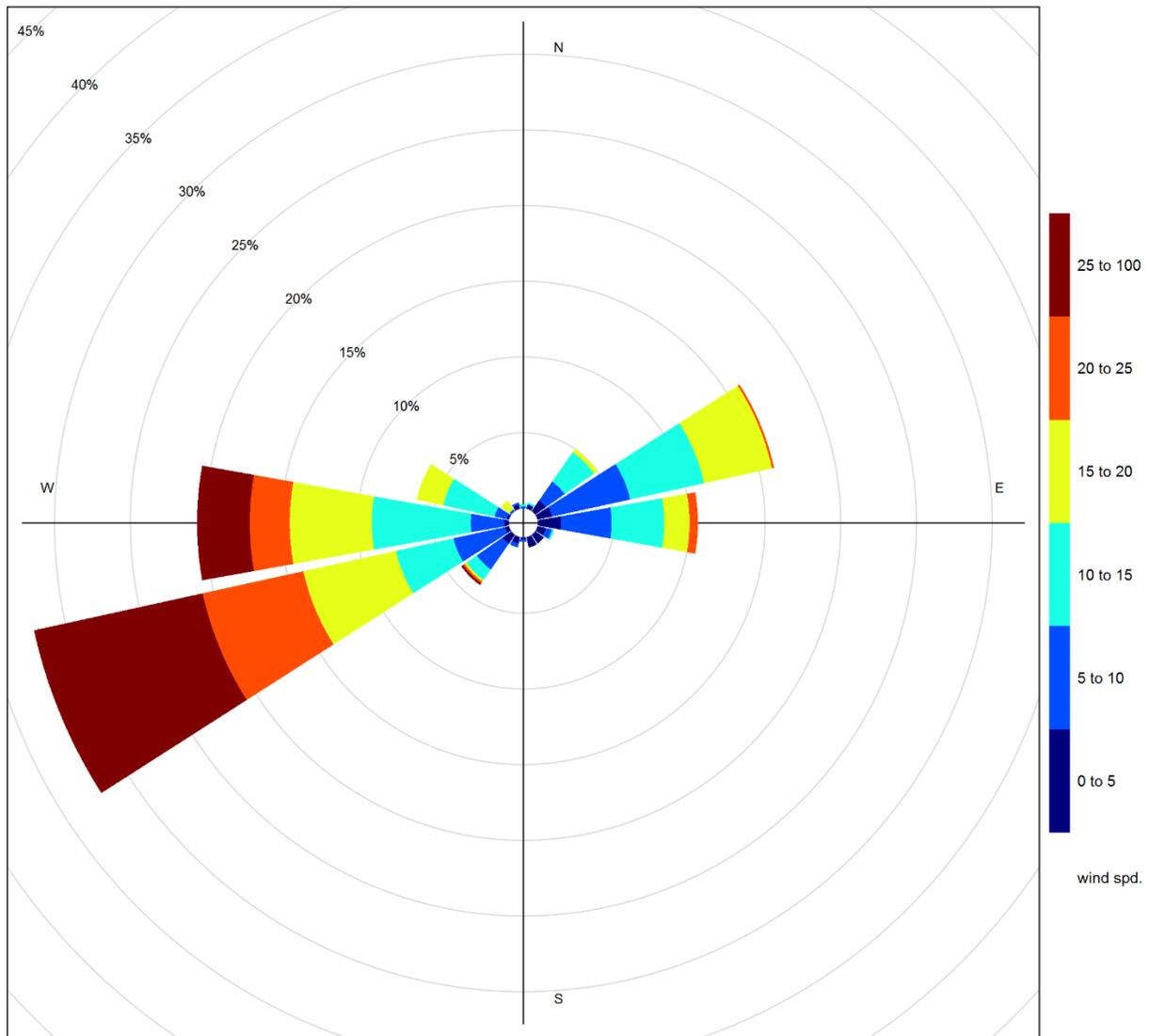


Figure 3-2 April 2019 wind rose from the Lagoon Station

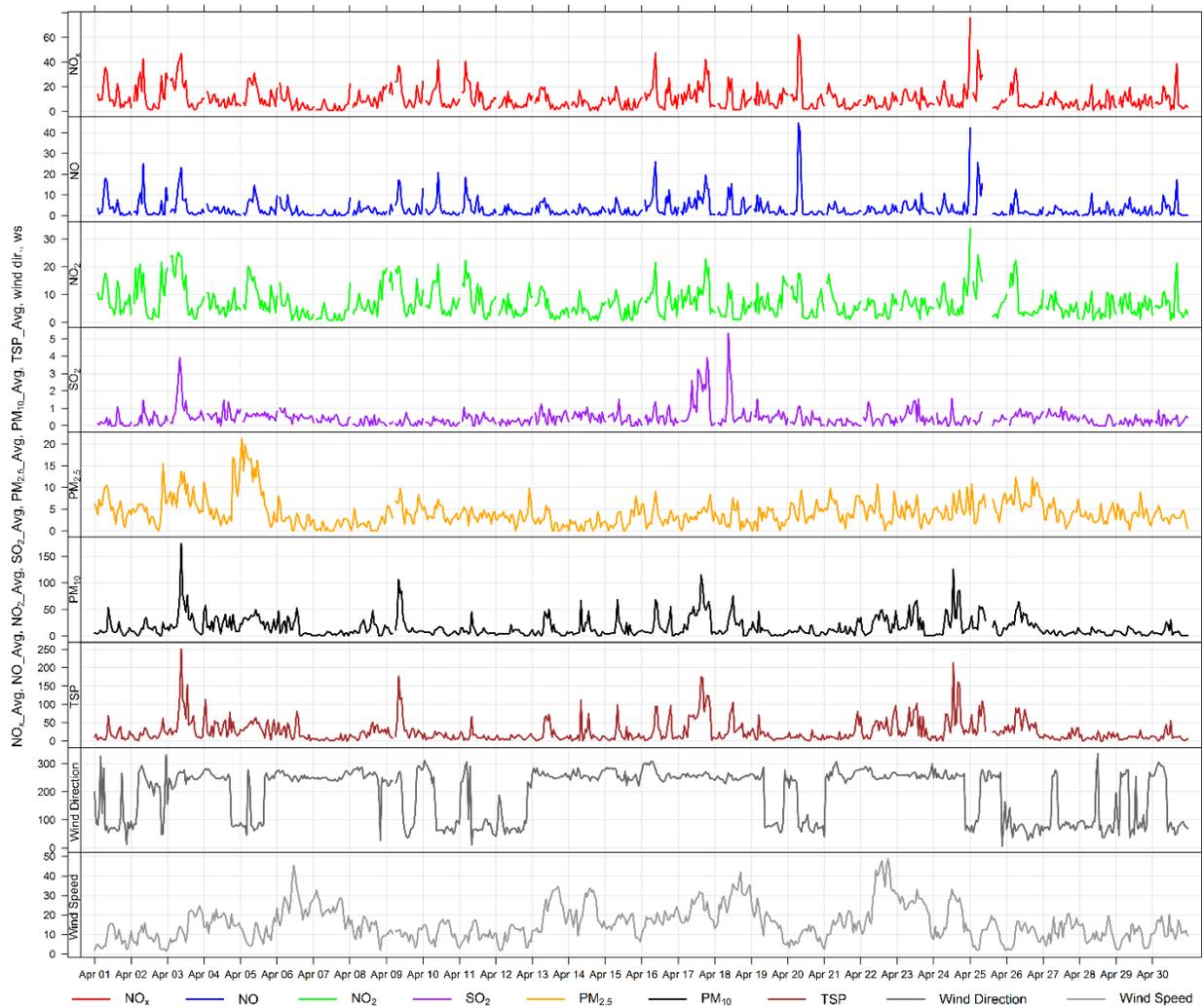


Figure 3-3 1-hour concentrations of NO_x, SO₂, particulate matter, wind direction and wind speed at the Lagoon station

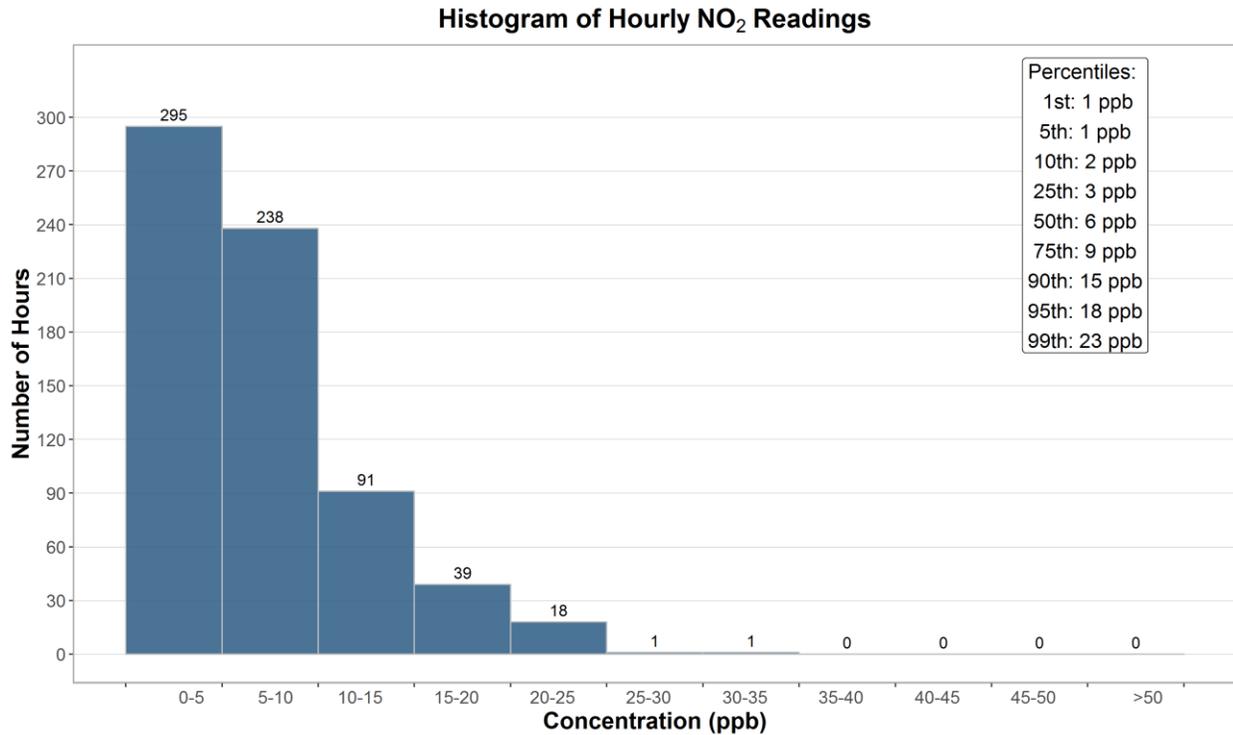


Figure 3-4 Histogram of hourly NO₂ concentrations at the Lagoon station

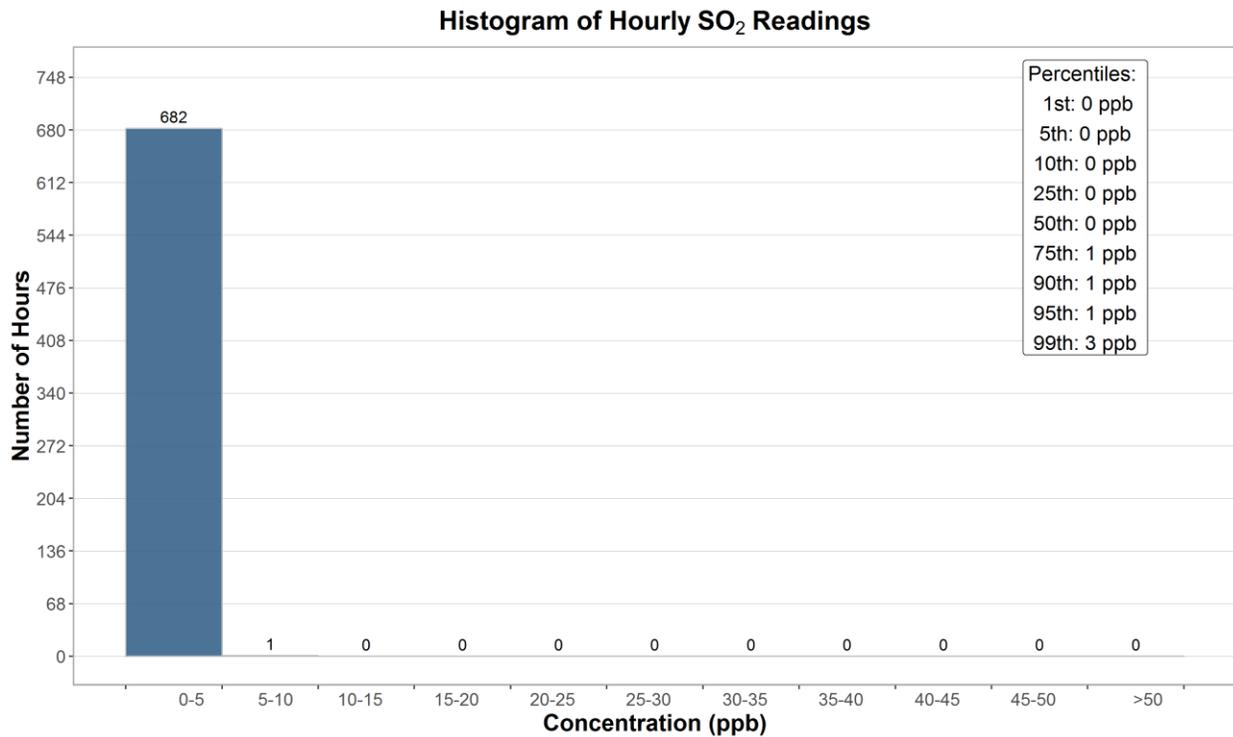


Figure 3-5 Histogram of hourly SO₂ concentrations at the Lagoon station

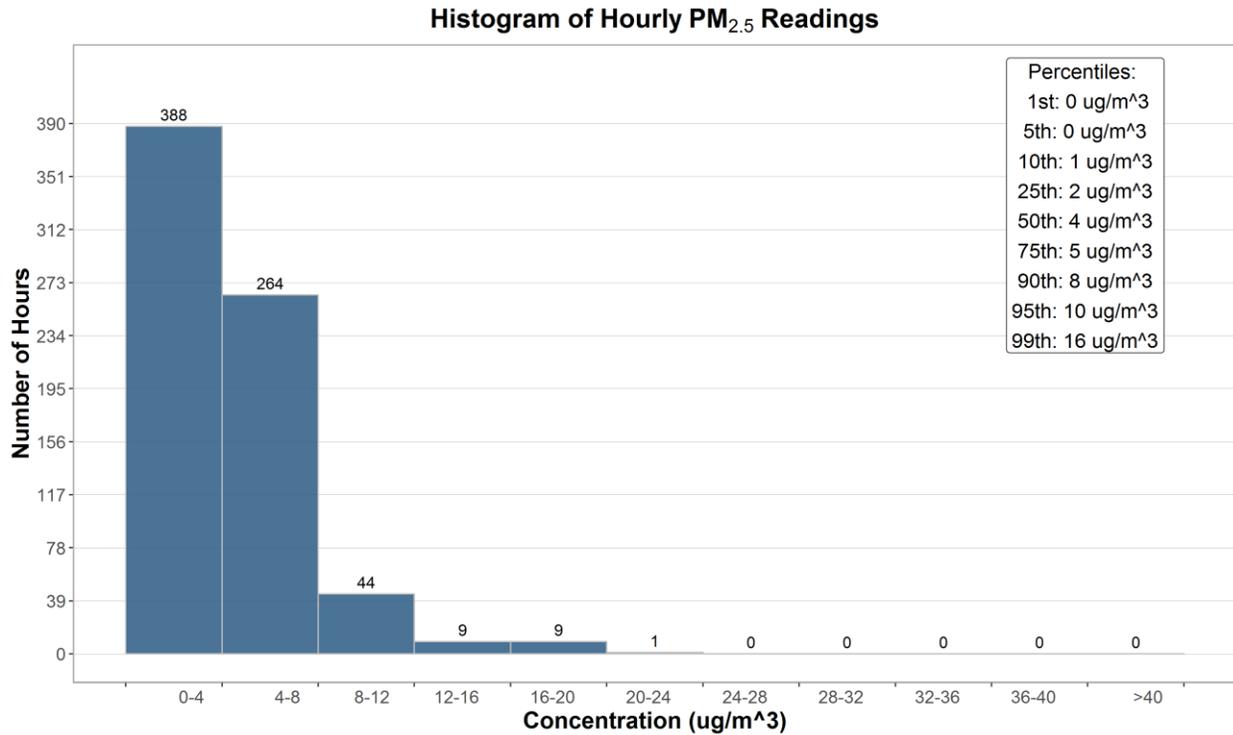


Figure 3-6 Histogram of hourly PM_{2.5} concentrations at the Lagoon station

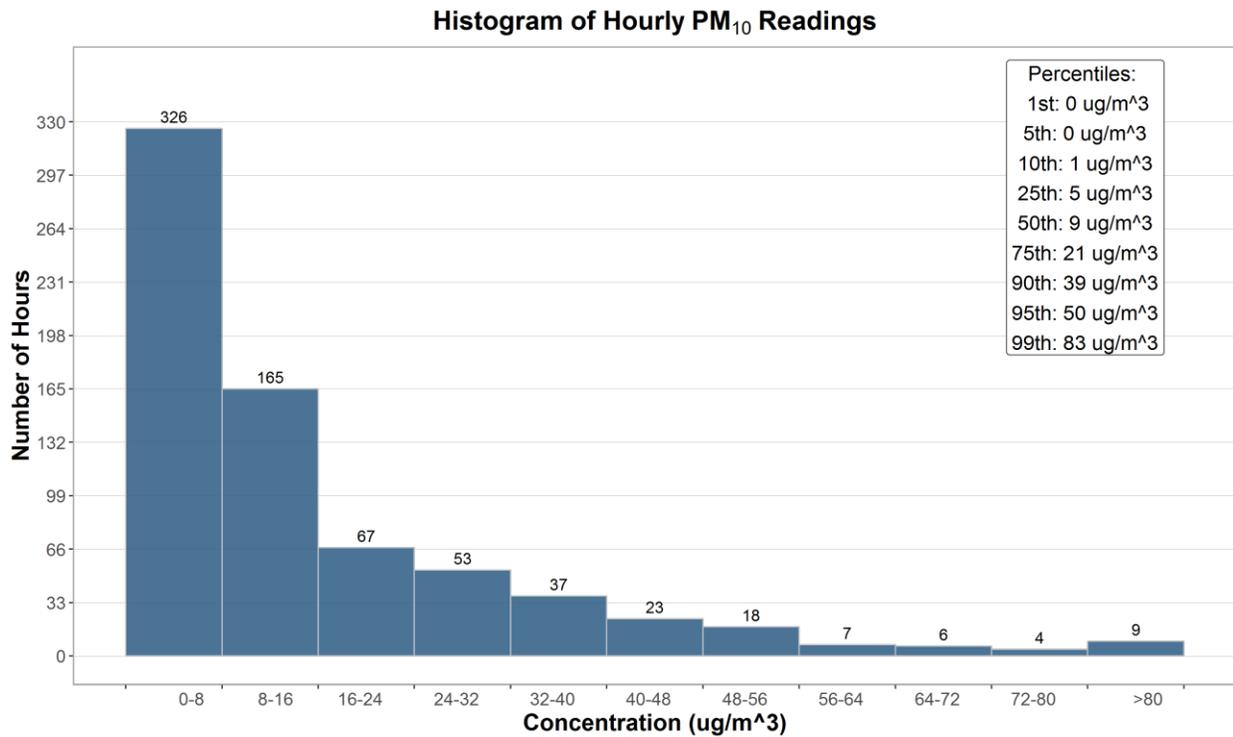


Figure 3-7 Histogram of hourly PM₁₀ concentrations at the Lagoon station

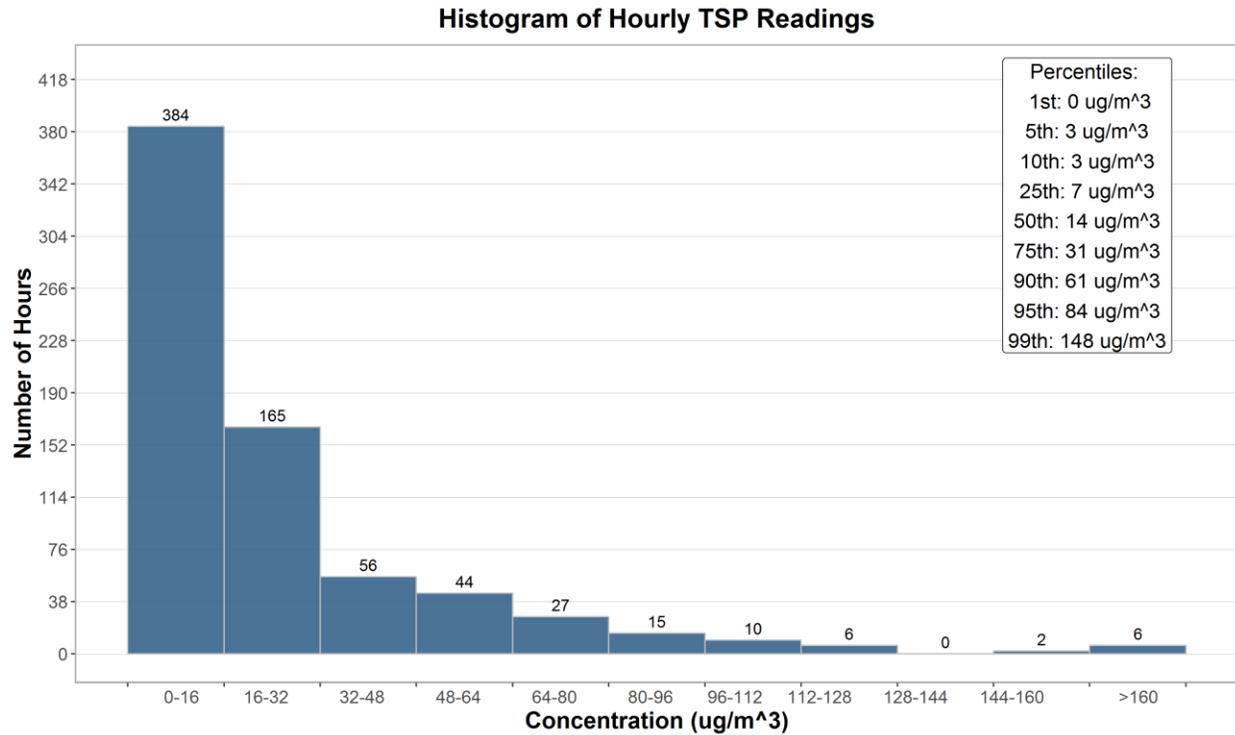


Figure 3-8 Histogram of hourly TSP concentrations at the Lagoon station

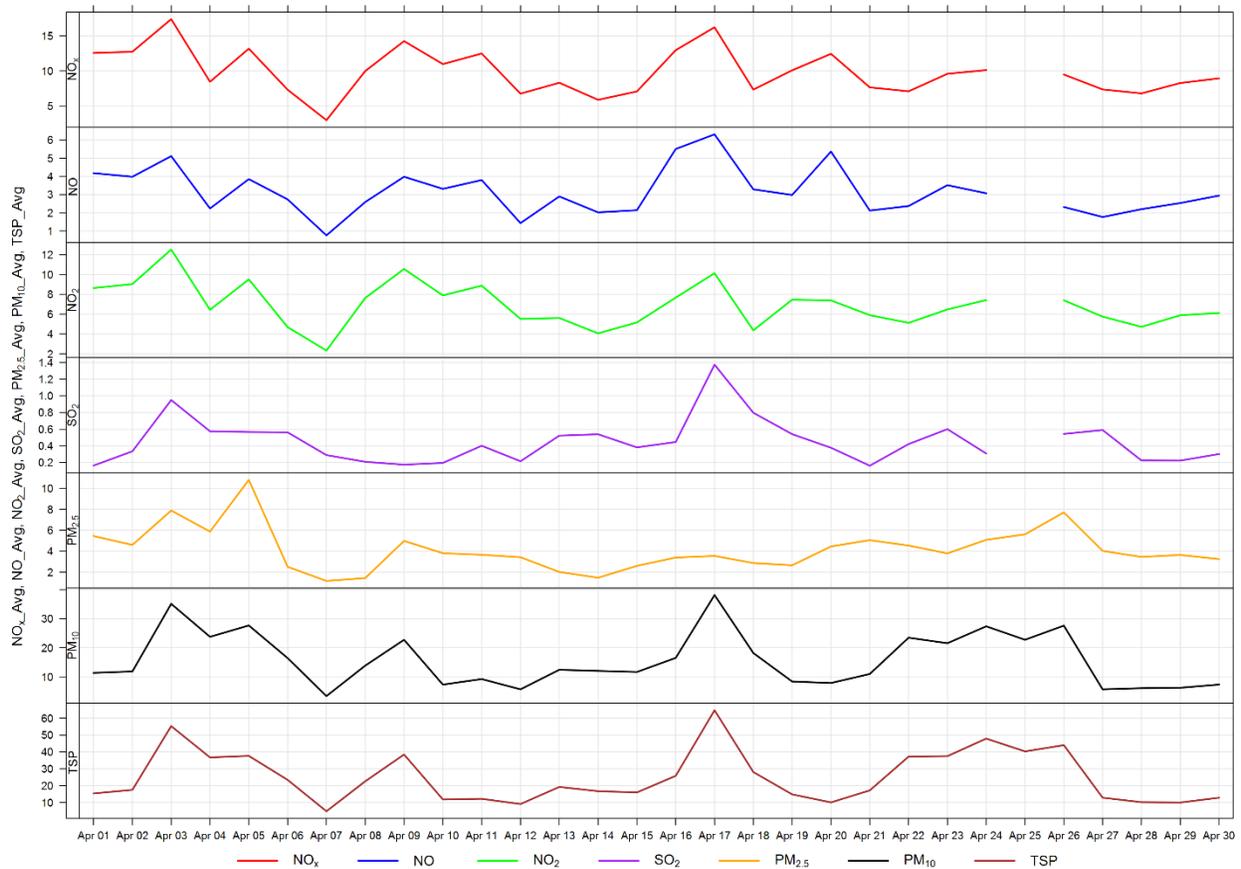


Figure 3-9 24-hour concentrations of NO_x, SO₂, and particulate matter at the Lagoon monitor

Figure 3-10 through Figure 3-12 show the variation in concentrations over various time averaging periods for PM, SO₂ and NO_x. The particulate matter plot in Figure 3-10 shows that PM₁₀ and TSP concentrations shows a diurnal pattern associated with Lafarge operations, daytime emissions from traffic and other activities. The diurnal patterns also follow the diurnal pattern of higher wind speeds during the daytime hours.

Figure 3-11 shows the variation of SO₂ over various time periods. SO₂ concentrations patterns are dependent on the timing of the highest SO₂ concentrations recorded in the month because in general SO₂ concentrations are very low. Figure 3-12 shows the variation of NO_x, NO and NO₂, with the peak of all three pollutants occurring in the early morning. This may be indicative of a peak in traffic.

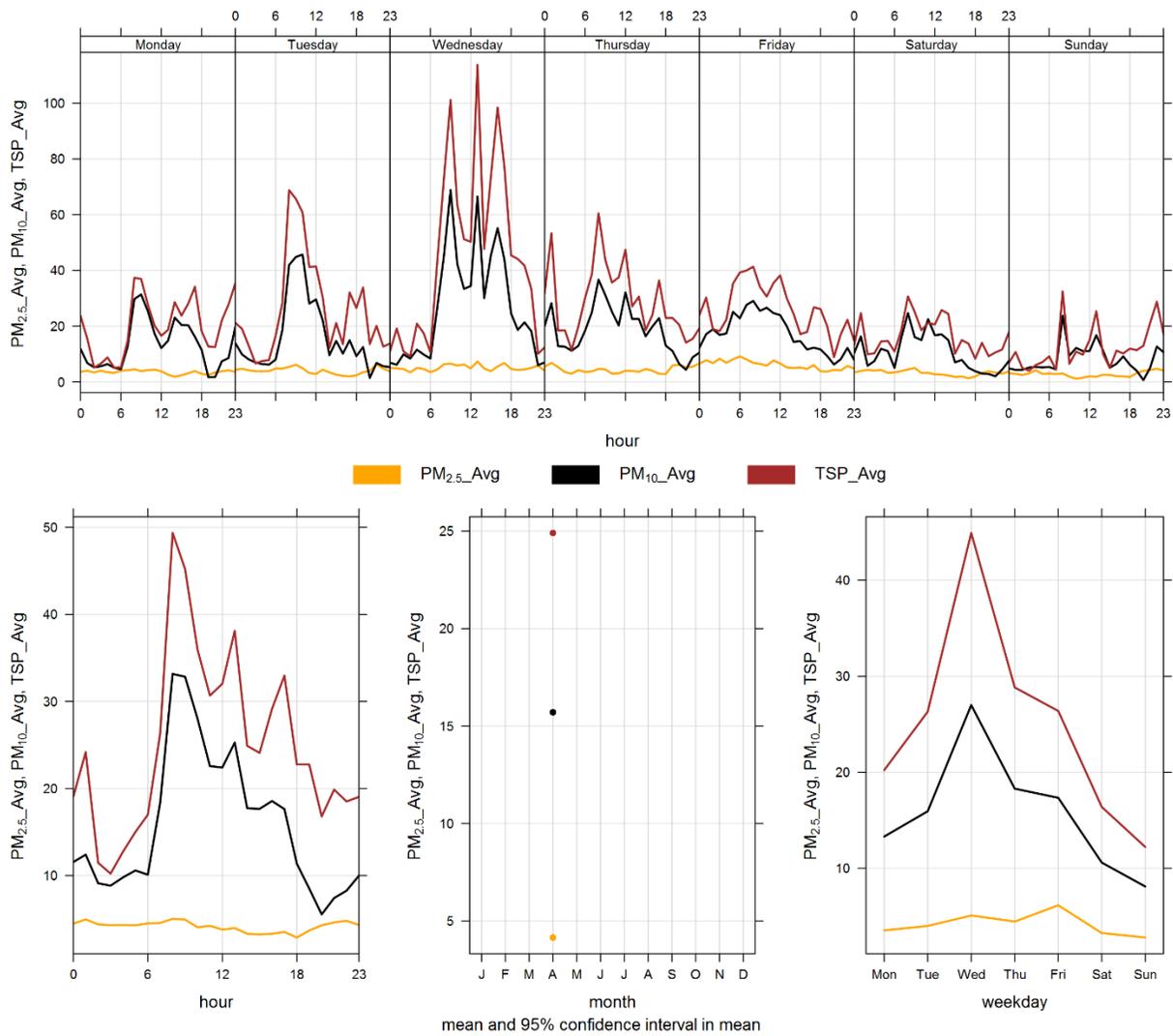


Figure 3-10 Lagoon monitor particulate matter time variation

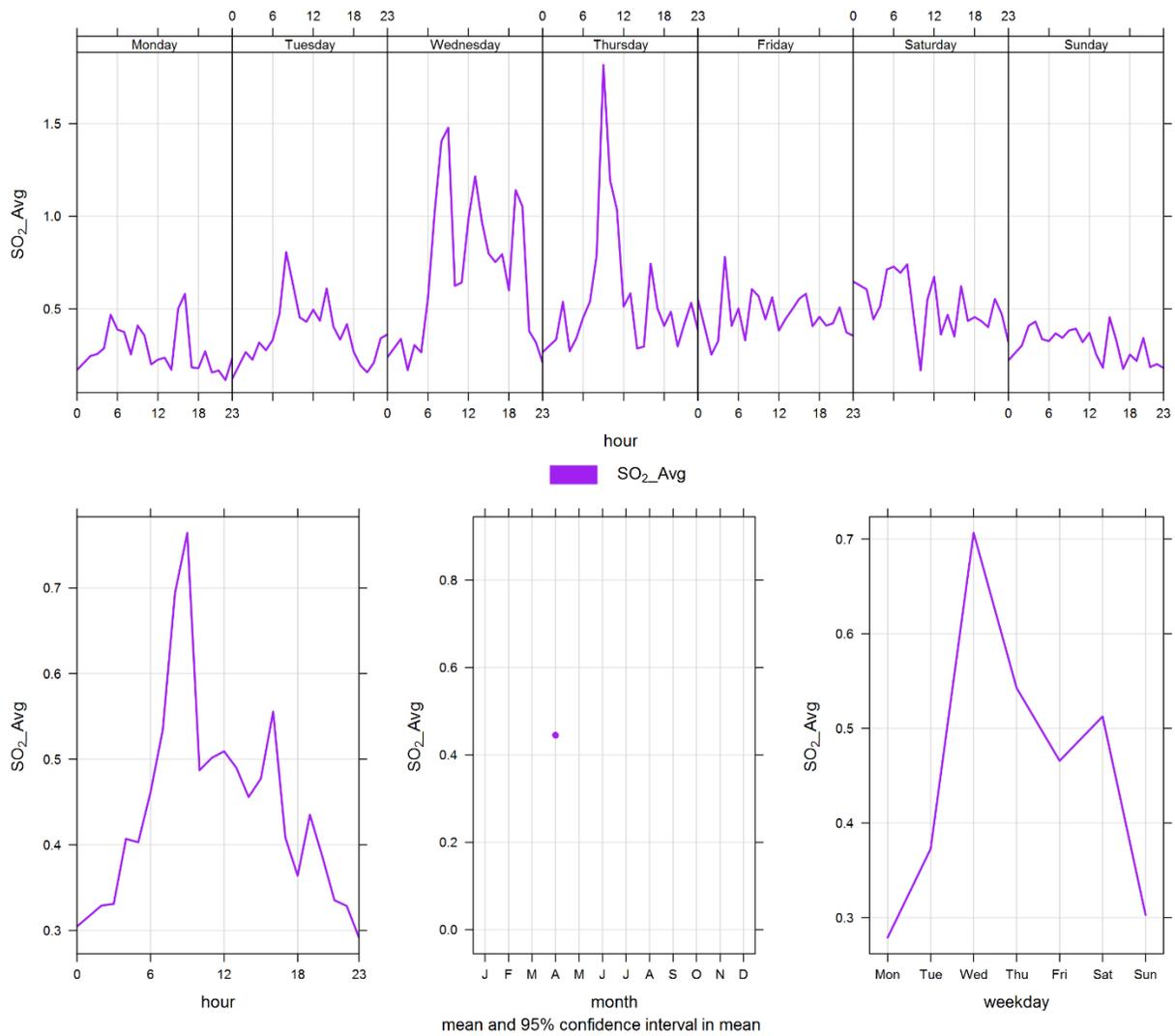


Figure 3-11 Lagoon monitor SO₂ time variation

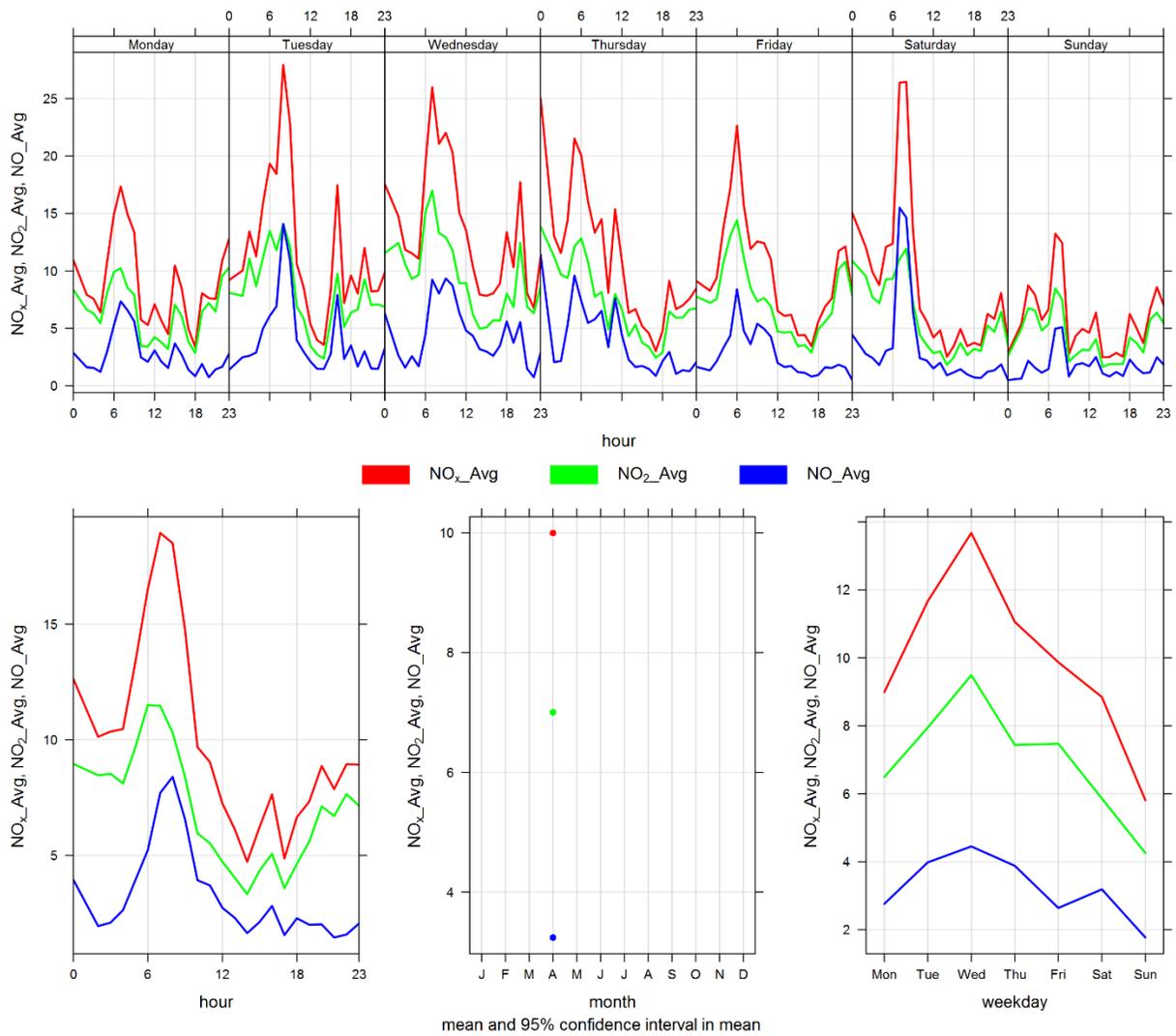


Figure 3-12 Lagoon monitor NO_x time variation

4 WEST INDUSTRIAL GRIMM

4.1 OPERATIONAL SUMMARY

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

Table 4-1 Instrumentation List at the West monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	<p>Machine malfunction led to 10 hours of lost operational time from April 8th at 17:00 to April 9th at 03:00. These hours were flagged as X for “instrument malfunction, data quality cannot be assured.”</p> <p>An additional hour of lost operational time resulted from machine maintenance on April 25th at 14:00. This hour was flagged as Y for “operational maintenance carried out on the instrument.”</p> <p>Operational time and valid data were still above 98% for the month of April, at 98.5%.</p>

4.2 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. Table 4-2 summarizes the maximum 1-hour and 24-hour concentrations recorded over the course of the month. 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 4-1 and Figure 4-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. There were zero exceedances of the 24-hour TSP guideline (100 µg/m³) and zero exceedances of the PM_{2.5} (29µg/m³) guideline. Historically in April, the average number of 24-hour TSP AAAQO exceedances and 24-hour PM_{2.5} AAAQO exceedances are both zero. The maximum number of 24-hour TSP AAAQO exceedances was 3 days in April 2010. The station has not recorded an exceedance of the PM_{2.5} AAAQO in April since monitoring began in 2010.

Table 4-2 Summary of April 2019 data at the West GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour				Maximum 24-hour		Operational Time (Percent)	
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration		Day
PM_{2.5} ($\mu\text{g}/\text{m}^3$)	80	29	West	0	0	0.2	3.7	29.4	1	9	8.3	77.7	13.8	5	98.5
PM₁₀ ($\mu\text{g}/\text{m}^3$)	-	-	West	-	-	0.2	6.7	136.9	3	9	14.1	271.9	22.9	3	98.5
TSP ($\mu\text{g}/\text{m}^3$)	-	100	West	-	0	0.1	9.3	266.2	3	9	14.1	271.9	41.8	3	98.5

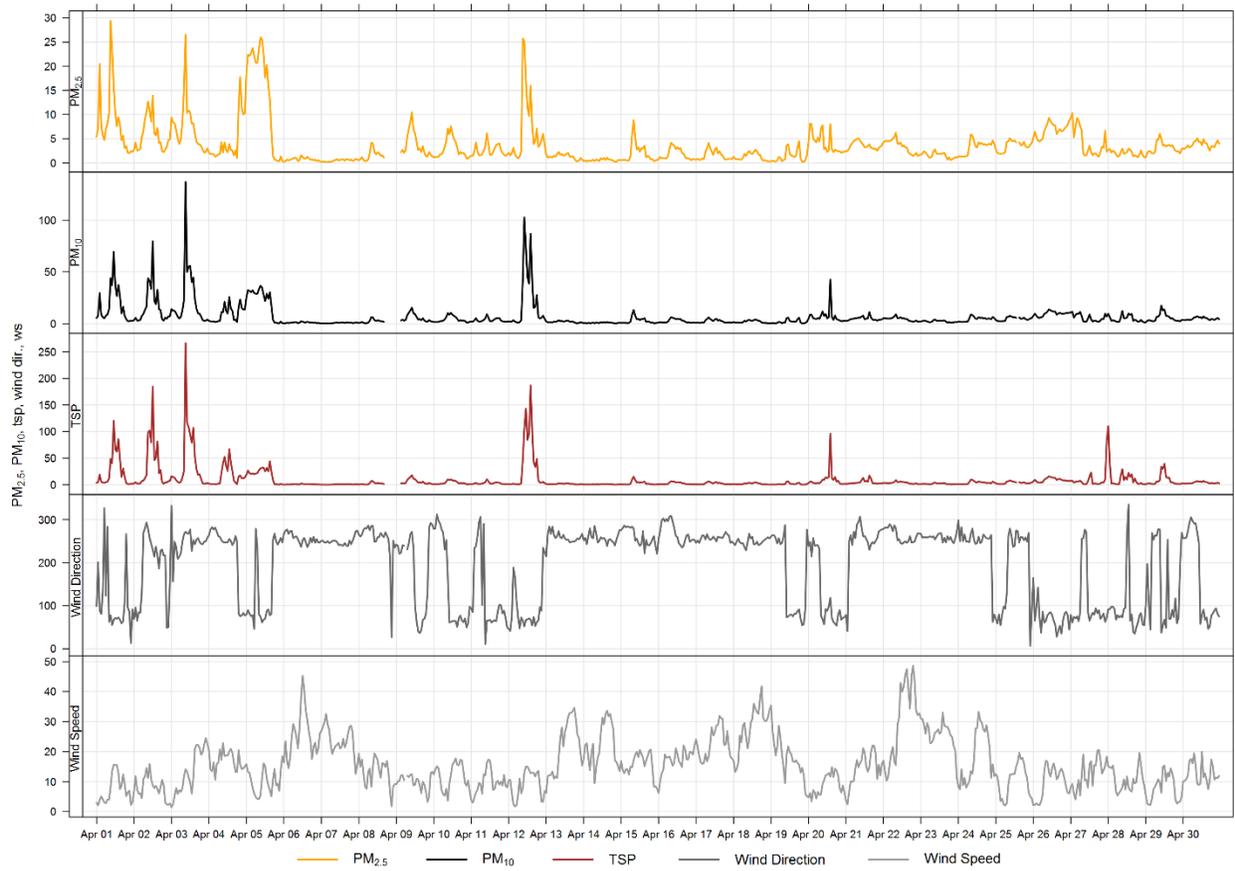


Figure 4-1 1-hour particulate matter concentrations at the West monitor

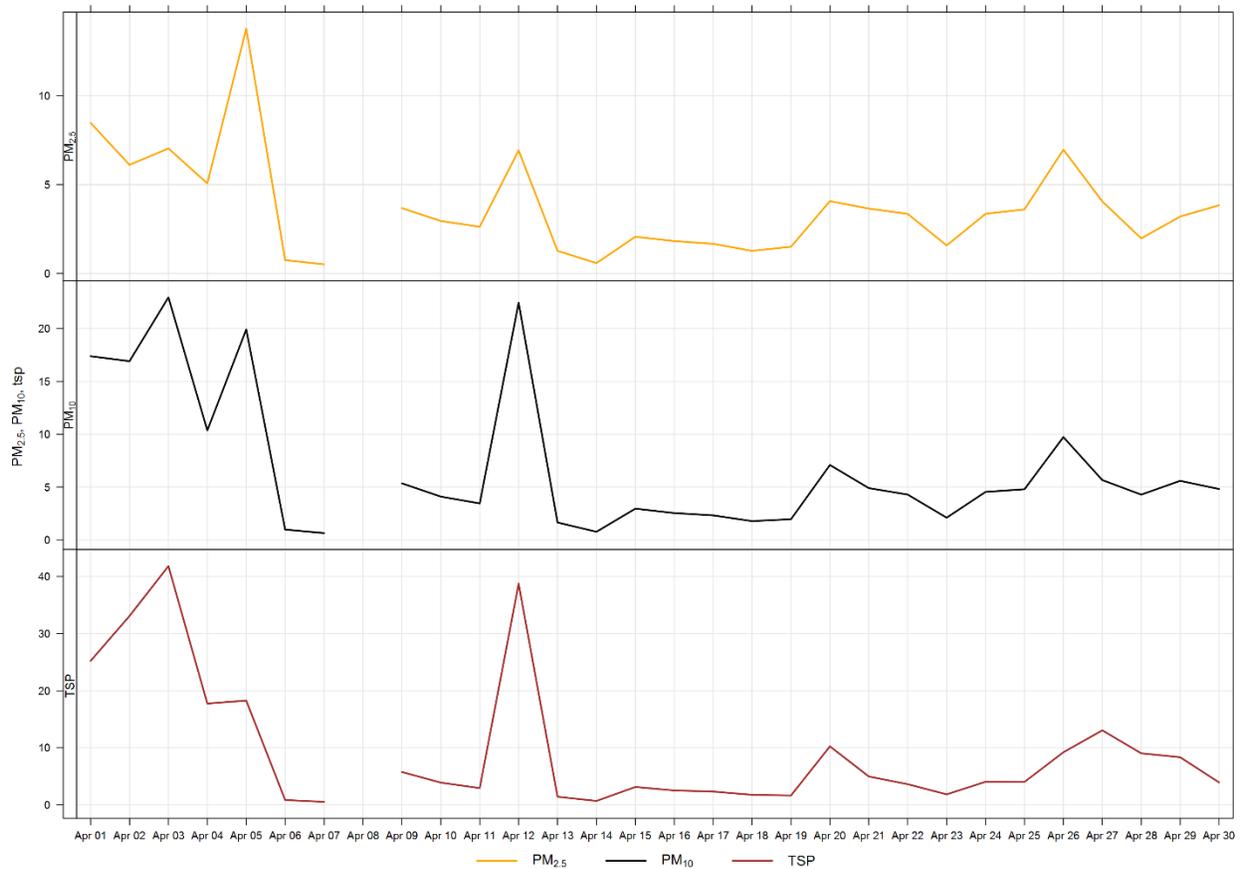


Figure 4-2 24-hour particulate matter concentrations at the West monitor

Figure 4-1 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 4-2 is based on data collected during April 2019 and indicates a diurnal relationship that could be due to the proximity of the West monitor to the highway. As the monitor is generally ‘up-wind’ of the facility, the daily variations in PM are more likely a result of higher traffic volume during daylight hours than specific Lafarge operations.

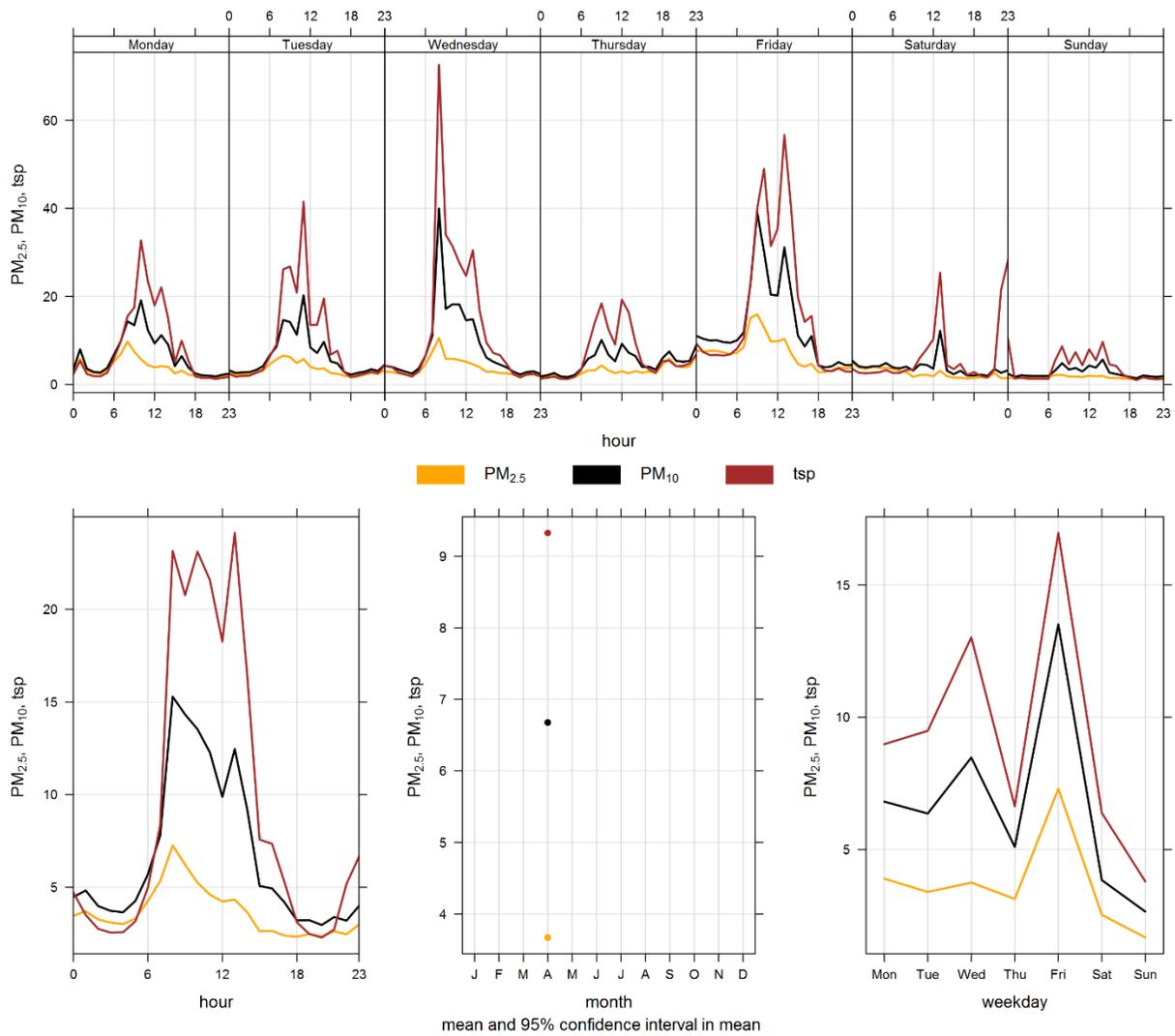


Figure 4-3 West particulate matter time variation

5 BERM INDUSTRIAL GRIMM

5.1 OPERATIONAL SUMMARY

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

Table 5-1 Instrumentation List at the Berm monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	Machine malfunction led to 10 hours of lost operational time from April 8 th at 17:00 to April 9 th at 03:00. These hours were flagged as X for “instrument malfunction, data quality cannot be assured.” Operational time and valid data were still above 98% for the month of April, at 98.6%.

5.2 MONITORING RESULTS AND TRENDS

The Berm monitor was placed at its current location as a result of the dispersion modelling conducted for the facility in 2009. Figure 5-1 and Figure 5-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. Table 5-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month, and Table 5-3 summarizes the recorded exceedances. This is an industrial monitor that is not Alberta Air Monitoring Directive (AMD) compliant and is not required to show compliance with the AAAQO.

There were 14 and one exceedances of the 24-hour TSP (100 µg/m³) and PM_{2.5} (29 µg/m³) guidelines, respectively. Elevated PM_{2.5} concentrations this month could be associated with Exshaw Creek flood mitigation construction activities, residential woodsmoke, open burning or industrial combustion sources in the airshed

Historically during the month of April, the Berm monitor records an average of 9 and zero exceedances of the 24-hour TSP and PM_{2.5} guidelines, respectively. The maximum number of TSP exceedances recorded during April occurred in 2010 where there were 22 days that exceeded the guideline. The minimum number of TSP exceedances was recorded during April 2018, which had 4 days that exceeded the guideline. The station had not recorded an exceedance of the PM_{2.5} AAAQO in April since monitoring began in 2010.

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 5-2 Summary of April 2019 data at the Berm GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour					Maximum 24-hour		Operational Time (Percent)
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration	Day	
PM_{2.5} (µg/m ³)	80	29	Berm	3	1	0.2	8.9	87.6	17	15	31.9	258.7	30.6	17	98.6
PM₁₀ (µg/m ³)	-	-	Berm	-	-	0.2	55.2	719.7	17	15	31.9	258.7	240.3	17	98.6
TSP (µg/m ³)	-	100	Berm	-	14	0.1	181.1	2920.8	24	17	26.7	261.1	792.7	17	98.6

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

Date	TSP (ug/m ³)	PM _{2.5} (ug/m ³)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Berm						
4/3/2019	282.2	-	251.3	14.0	48.4	Dust from flood mitigation work
4/4/2019	200.7	-	256.3	16.8	47.7	
4/6/2019	292.7	-	254.1	25.9	51.6	High wind event, and dust from flood mitigation work
4/7/2019	113.7	-	248.6	23.4	39.3	High wind event, and dust from flood mitigation work
4/13/2019	234.6	-	257.1	22.0	51.4	High wind event, and dust from flood mitigation work
4/14/2019	340.6	-	255.5	22.3	44.1	High wind event, and dust from flood mitigation work
4/15/2019	126.7	-	257.9	15.3	46.8	
4/16/2019	257.4	-	268.0	17.9	41.1	
4/17/2019	792.7	30.6	257.3	22.6	34.6	High wind event, and dust from flood mitigation work
4/18/2019	445.7	-	249.2	28.7	39.9	High wind event, and dust from flood mitigation work
4/22/2019	592.5	-	257.4	31.0	29.9	High wind event, and dust from flood mitigation work
4/23/2019	448.2	-	258.5	25.1	33.0	High wind event, and dust from flood mitigation work

4/24/2019	629.0	-	256.8	18.4	44.4	
4/25/2019	121.3	-	259.9	10.0	37.1	
Total # of Exceedances	14	1				
Maximum # of Exceedances (April)	22 (2010)	0 (2010 ~ 2018)				
Average # of Exceedances (April)	9	0				
Minimum # of Exceedances (April)	4 (2018)	0 (2010 ~ 2018)				

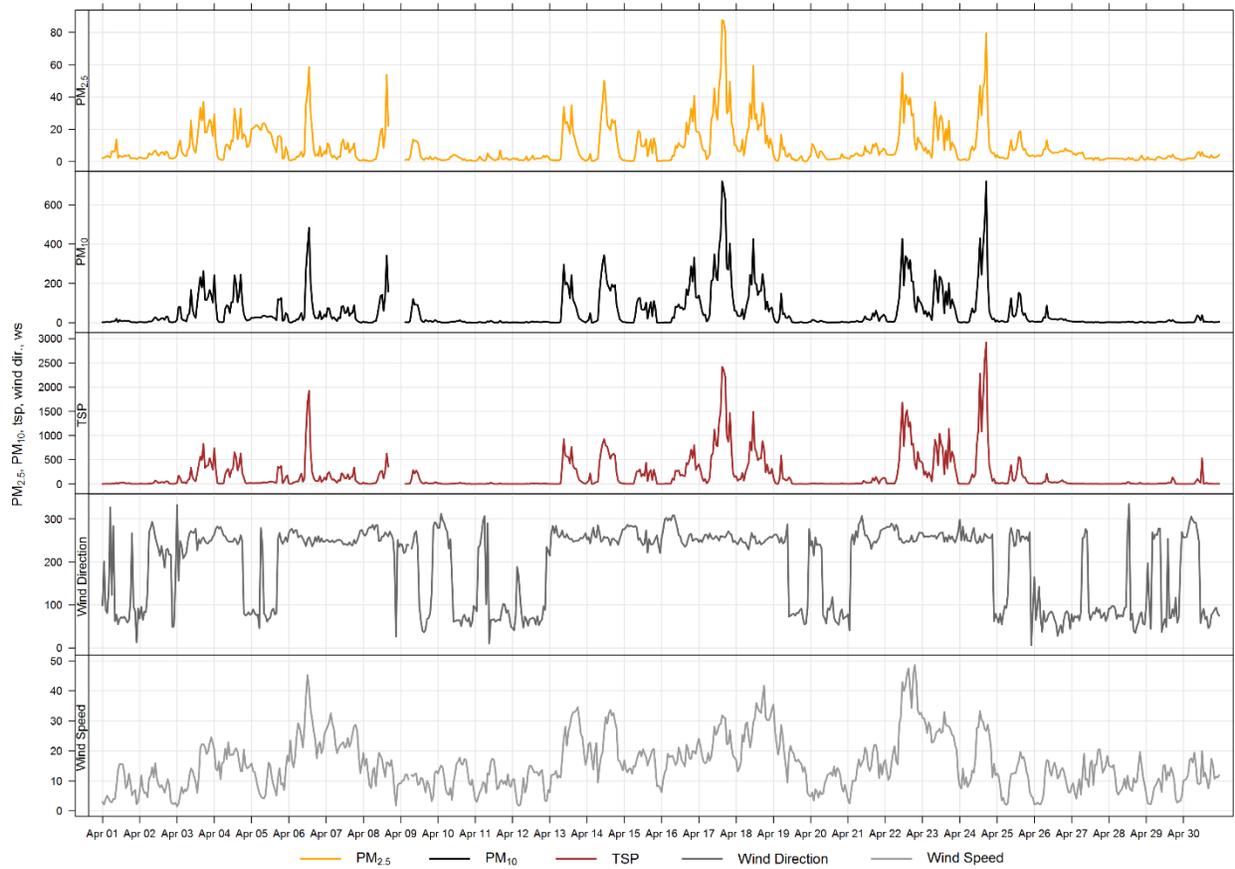


Figure 5-1 1-hour particulate matter concentrations recorded at the Berm monitor

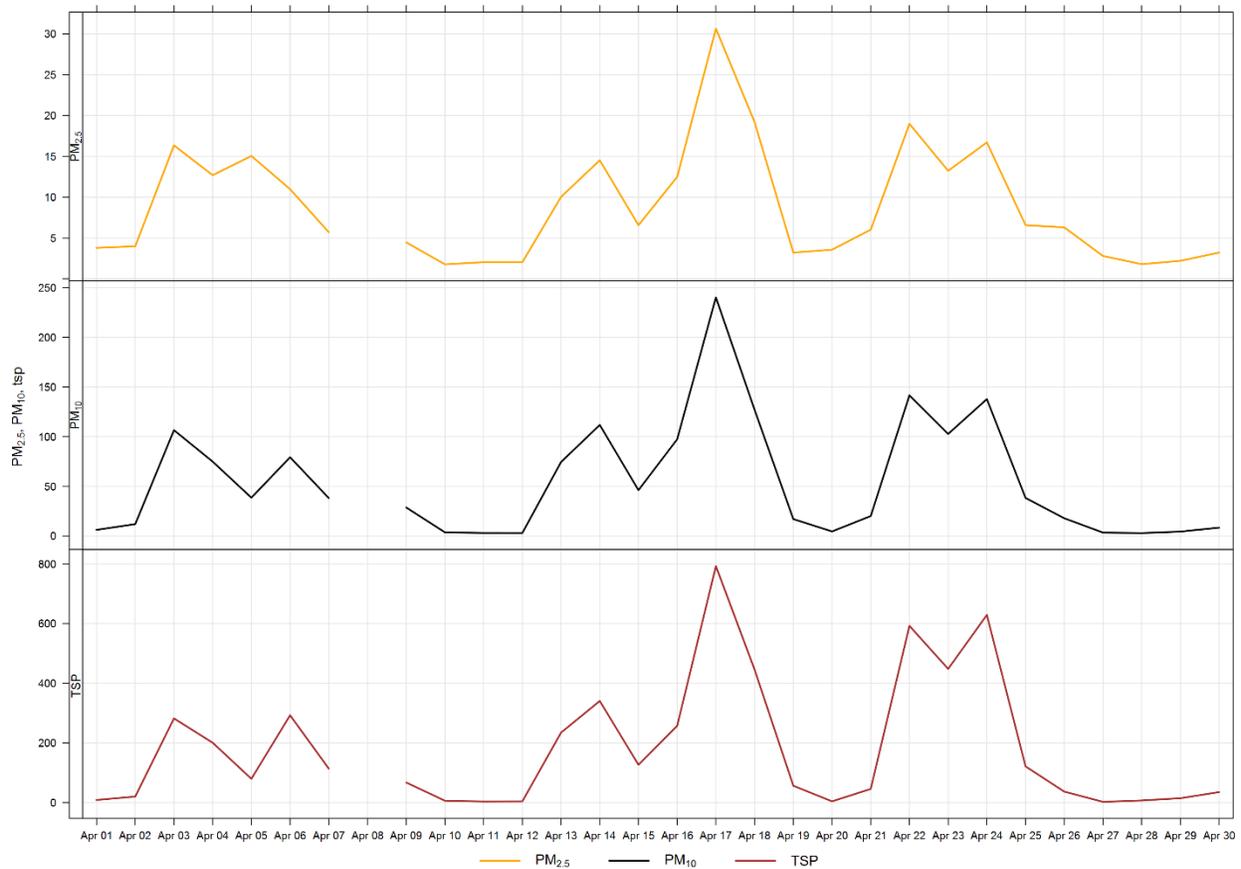


Figure 5-2 24-hour particulate matter concentrations recorded at the Berm monitor

Figure 5-3 shows the wind rose for the 14 days of TSP exceedances, while Figure 5-4 shows the wind rose for the one day of PM_{2.5} exceedances. The wind roses show that the winds predominantly came from the west-southwest direction for both the TSP and PM_{2.5} exceedance days.

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

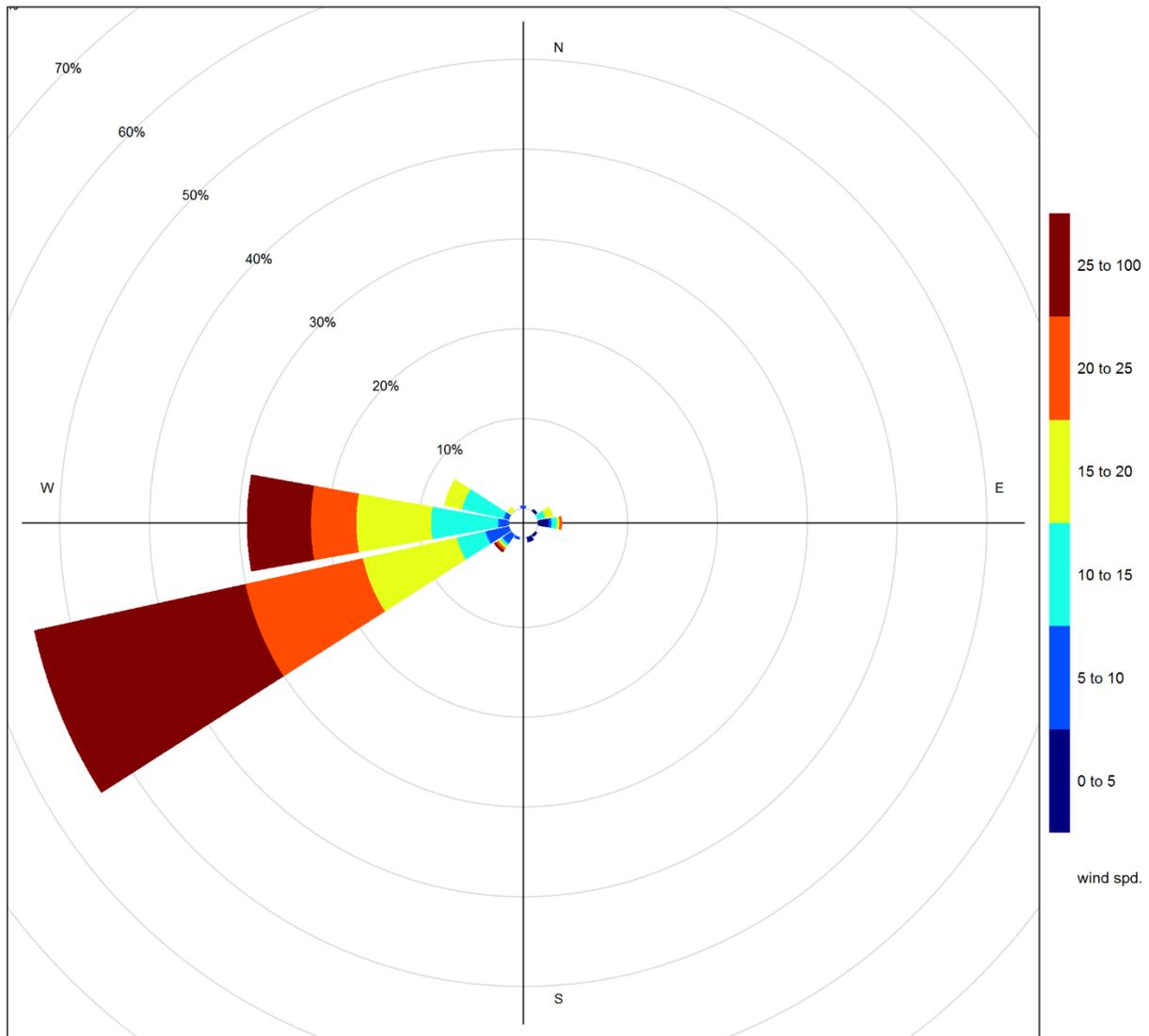


Figure 5-3 Wind rose for TSP exceedance days recorded at the Berm GRIMM

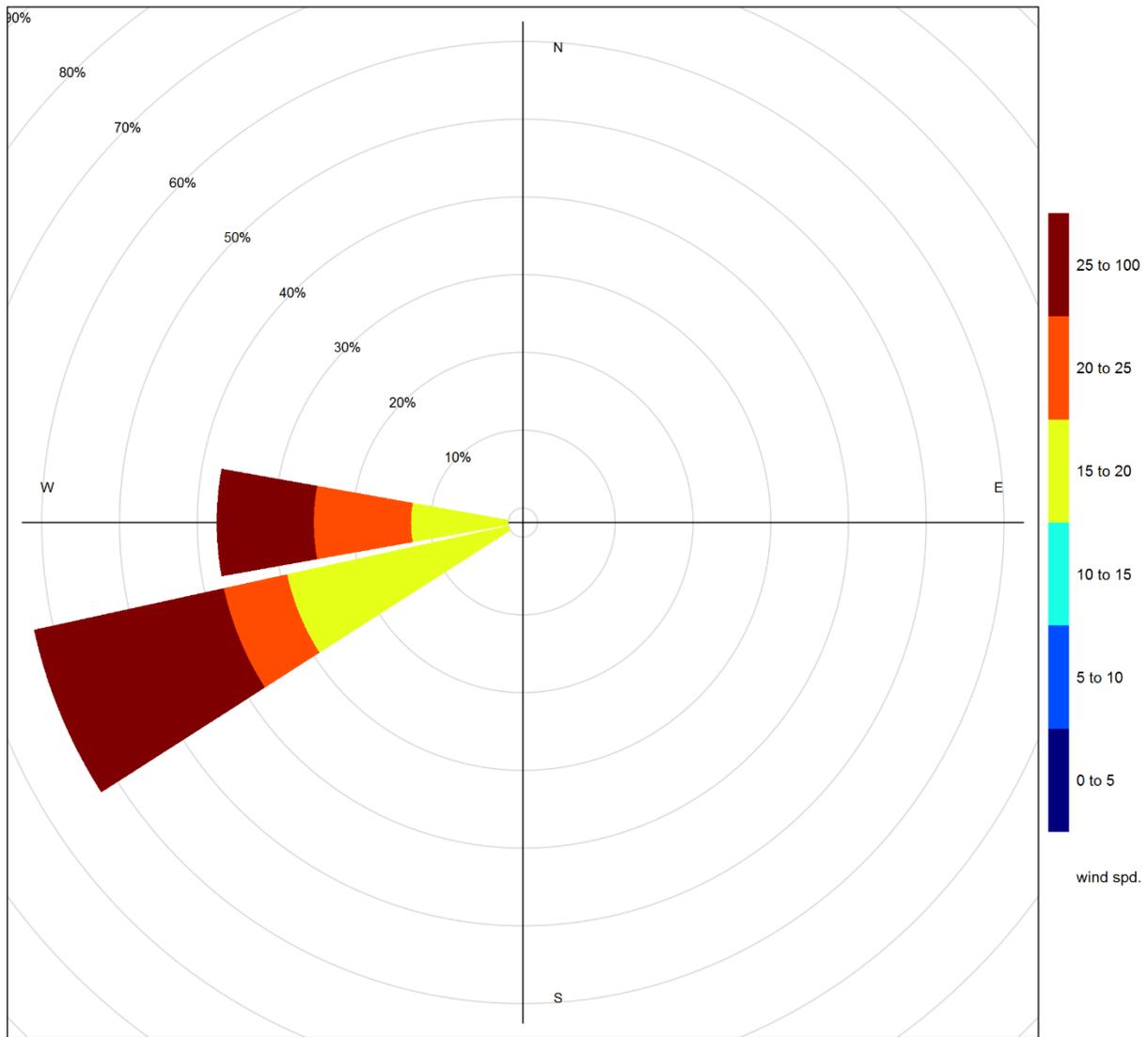


Figure 5-4 Wind rose for PM_{2.5} exceedance days recorded at the Berm GRIMM

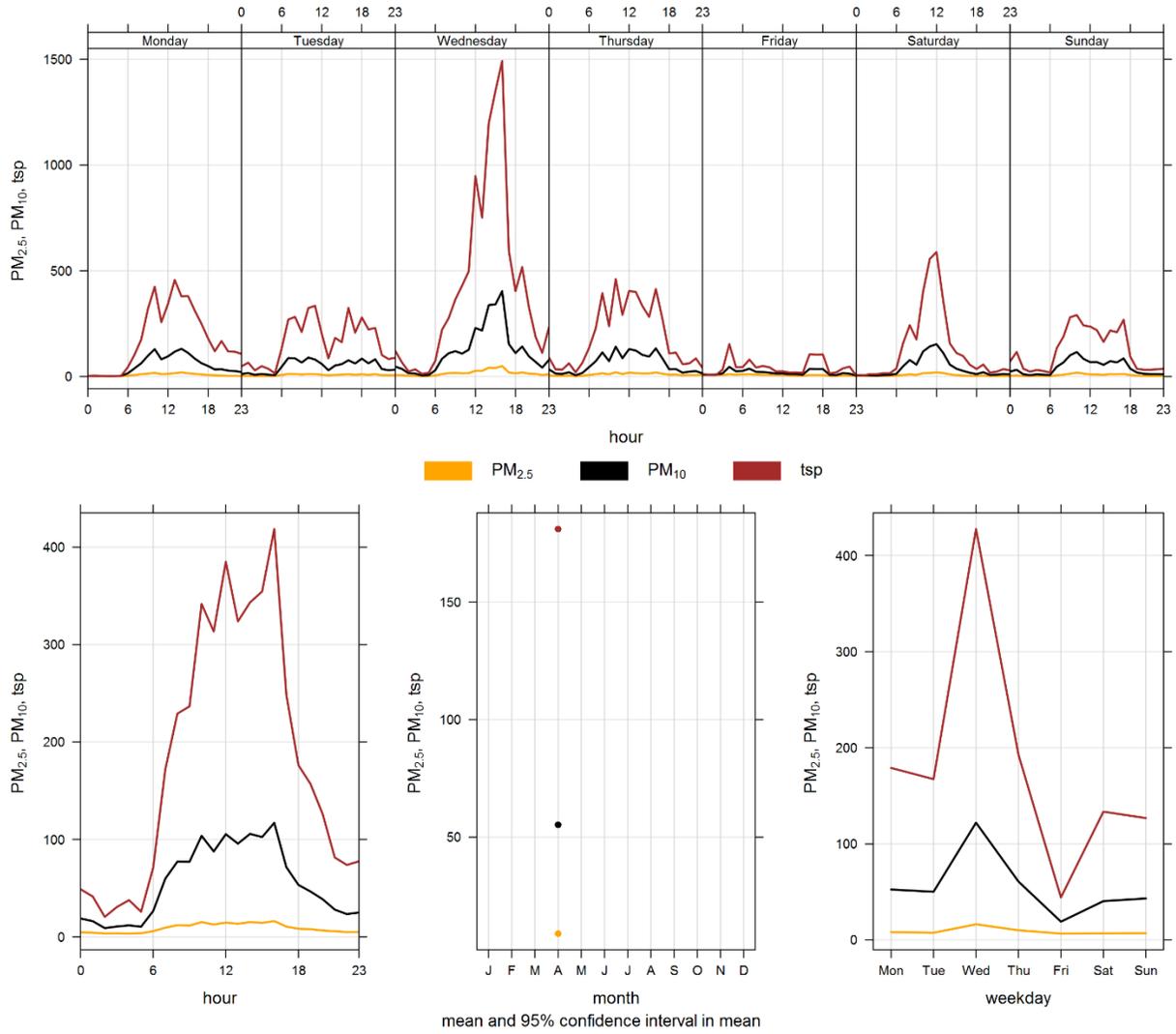


Figure 5-5 Berm particulate matter time variation

6 ENTRANCE INDUSTRIAL GRIMM

6.1 OPERATIONAL SUMMARY

A summary of the station operation for the month is provided in Table 6-1.

Table 6-1 Instrumentation List at the Entrance monitoring location

Parameter Measured	Equipment Description	Notes
PM _{2.5} , PM ₁₀ , TSP Concentrations	GRIMM 365 Continuous Particulate Monitor	Machine malfunction led to 10 hours of lost operational time from April 8 th at 17:00 to April 9 th at 03:00. These hours were flagged as X for “instrument malfunction, data quality cannot be assured.” Operational time and valid data were still above 98% for the month of April, at 98.6%.

6.2 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 6-1 and Figure 6-2 show the hourly and daily PM_{2.5}, PM₁₀ and TSP concentrations recorded over the month. Table 6-2 summarizes the maximum 1-hour and 24-hour PM concentrations recorded during the month. 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.

During April, there were 5 and zero exceedances of the 24-hour TSP (100 µg/m³) and PM_{2.5} (29 µg/m³) guidelines, respectively. Dust created from the flood mitigation work (section 1.1) has the potential to impact particulate matter concentrations and may have contributed to particulate at the Entrance monitor. Historically, the Entrance monitor records an average of 12 and zero exceedances of the 24-hour TSP and PM_{2.5} guidelines respectively, during the month of April. The maximum number of TSP exceedances recorded during April occurred in 2010, which had 20 days that exceeded the guideline. The minimum number of TSP exceedances recorded during April occurred in 2017, which had one day that exceeded the guideline. The station has not recorded an exceedance of the PM_{2.5} AAAQO in April since monitoring began in 2010.

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 6-3 shows the wind rose for the 5 days that exceeded the TSP Guideline. The wind rose indicates that the winds predominantly came from the west-southwest direction. High wind speeds were not a primary factor for most of the TSP exceedances in April at the Entrance station. On those days without high wind speeds other sources, such as industry, traffic and rail may have contributed to the TSP exceedances.

Table 6-2 Summary of April 2019 data at the Entrance GRIMM

Parameter	Guideline		Station	Exceedances		Monthly		Maximum 1-hour				Maximum 24-hour		Operational Time (Percent)	
	1-hr	24-hr		1-hr	24-hr	Minimum	Average	Maximum Concentration	Day	Hour	Wind Speed (km/hr)	Wind Direction (degrees)	Maximum Concentration		Day
PM_{2.5} (µg/m ³)	80	29	Entrance	0	0	0.2	6.4	35.4	3	7	7.8	248.9	17.7	5	98.6
PM₁₀ (µg/m ³)	-	-	Entrance	-	-	0.3	26.6	279.7	16	8	17.0	308.9	83.6	3	98.6
TSP (µg/m ³)	-	100	Entrance	-	5	0.3	65.5	797.5	16	8	17.0	308.9	196.3	3	98.6

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

Date	TSP (ug/m³)	PM_{2.5} (ug/m³)	Average Wind Direction (degrees)	Average Wind Speed (km/hr)	Average RH (%)	Root Cause (Provided by Lafarge)
Entrance						
4/3/2019	196.3	-	251.3	14.0	48.4	
4/16/2019	119.2	-	268.0	17.9	41.1	
4/17/2019	107.6	-	257.3	22.6	34.6	High wind event and potential dust from flood mitigation work
4/22/2019	143.0	-	257.4	31.0	29.9	High wind event and potential dust from flood mitigation work
4/24/2019	103.8	-	256.8	18.4	44.4	
Total # of Exceedances	5	0				
Maximum # of Exceedances (April)	20 (2010)	0 (2010 ~ 2018)				
Average # of Exceedances (April)	12	0				
Minimum # of Exceedances (April)	1 (2017)	0 (2010 ~ 2018)				

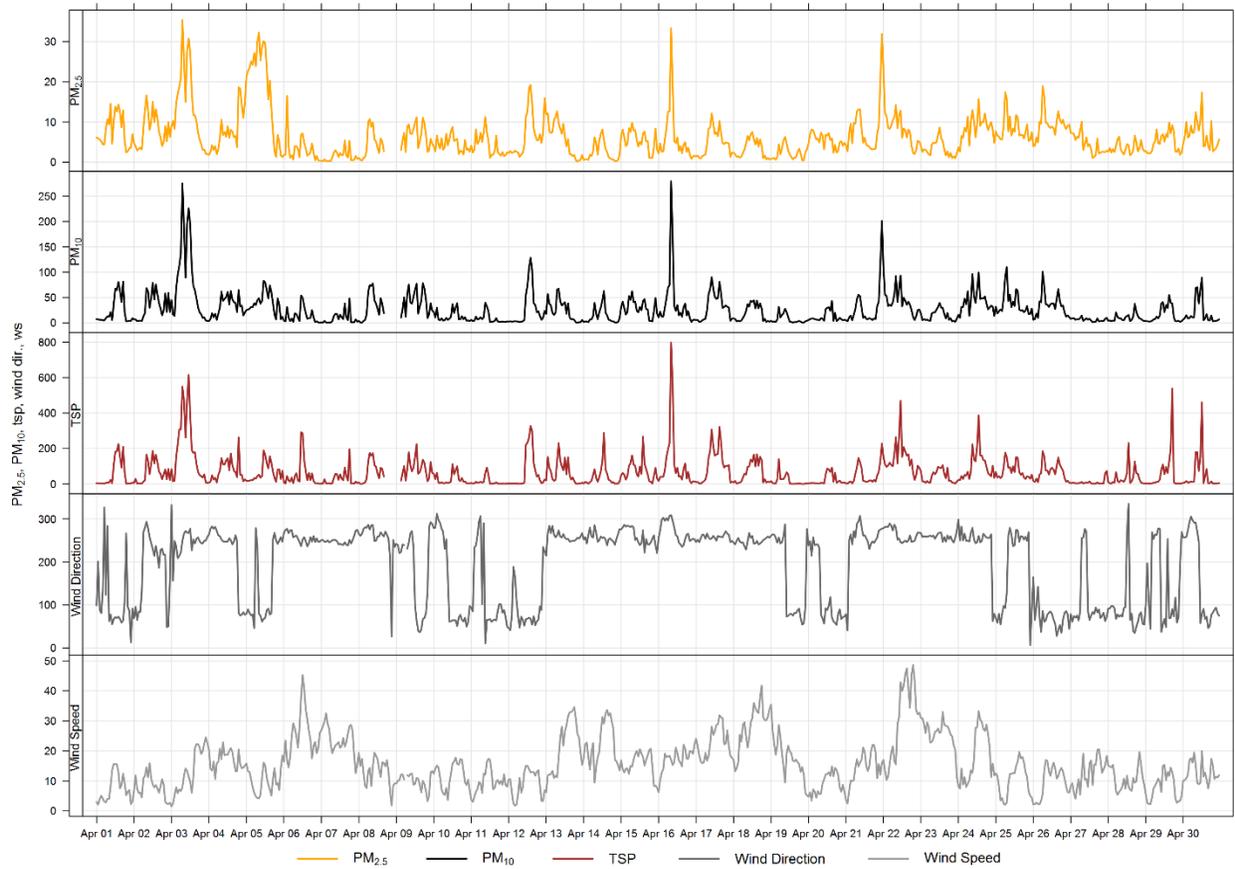


Figure 6-1 1-hour particulate matter concentrations recorded at the Entrance monitor

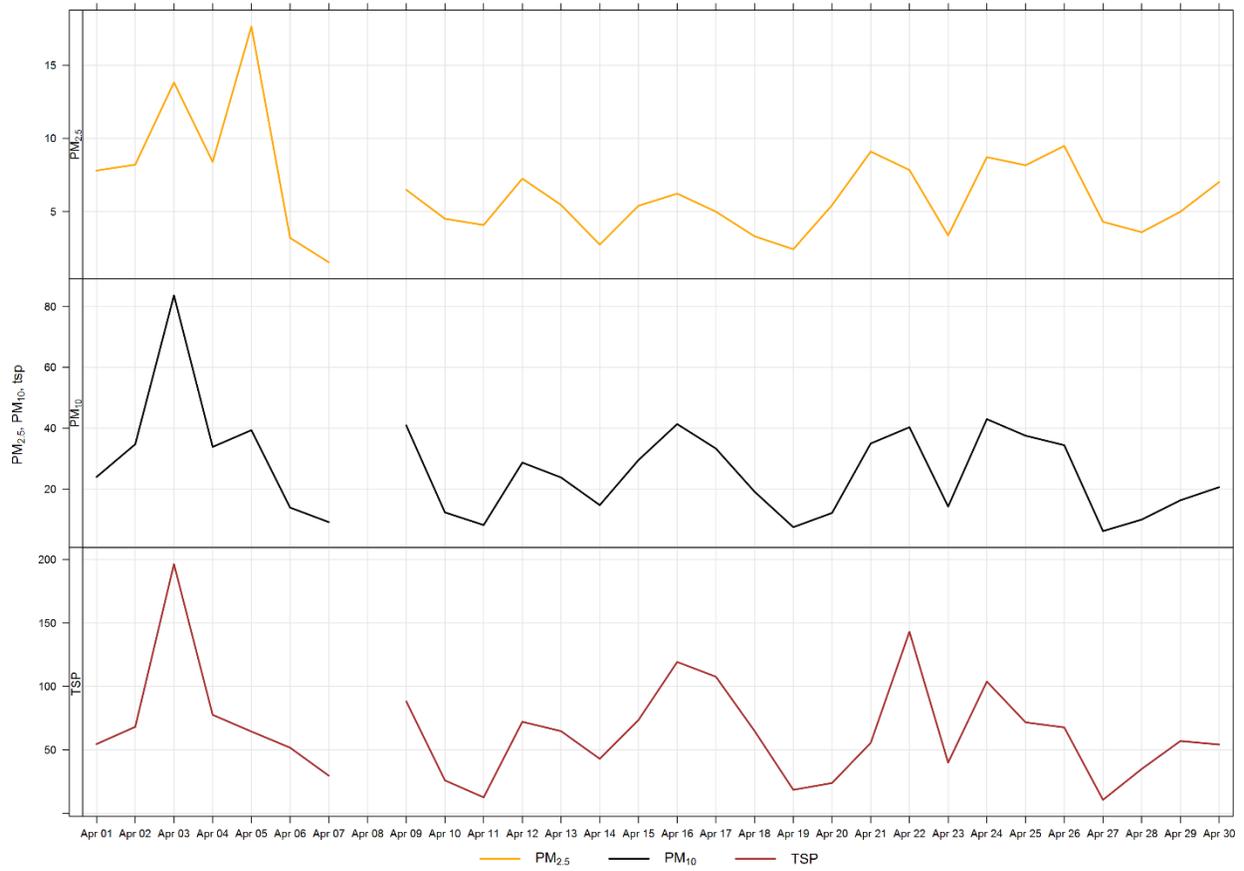


Figure 6-2 24-hour particulate matter concentrations at the Entrance monitor

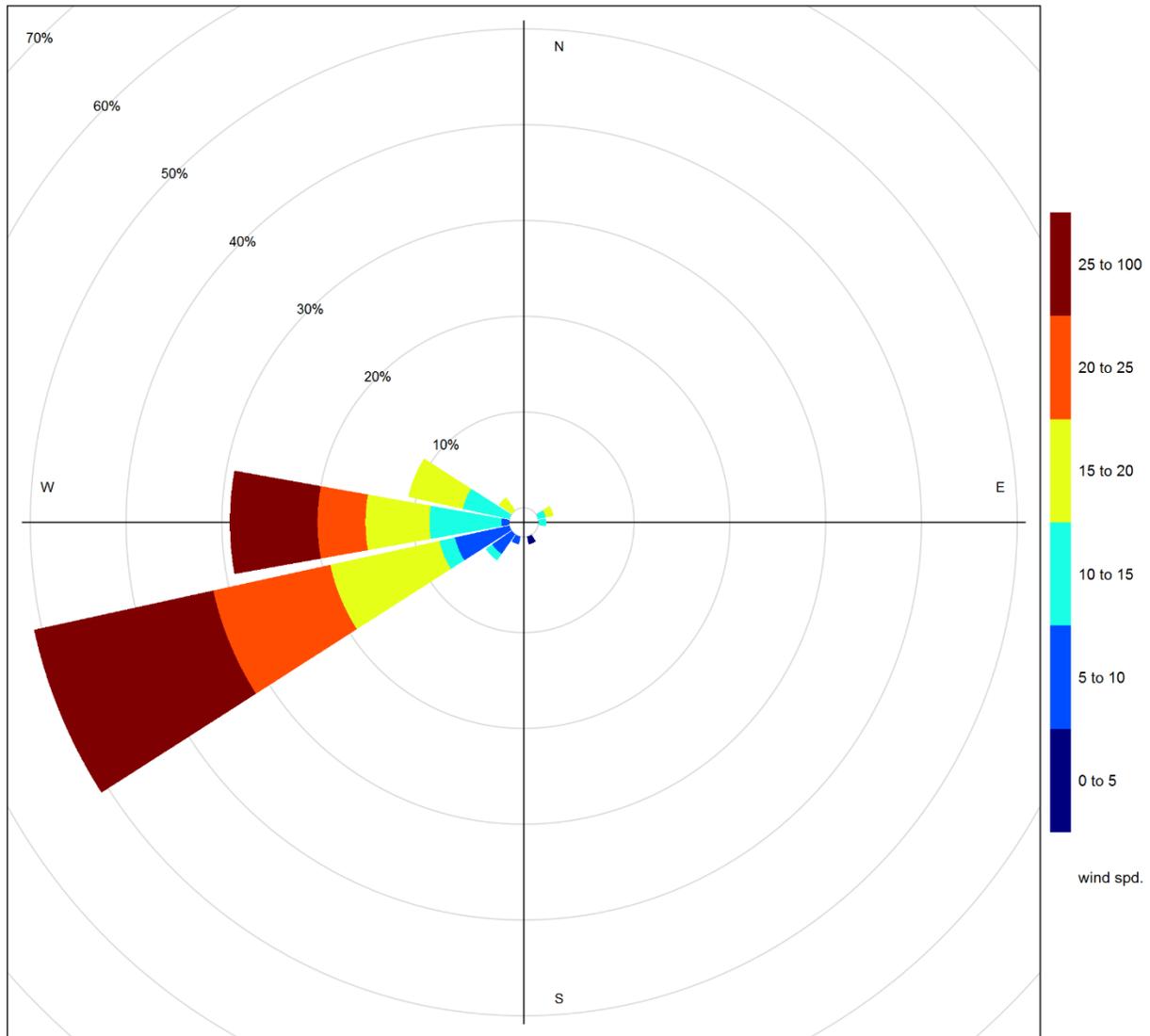


Figure 6-3 Wind rose for TSP exceedance days recorded at the Entrance GRIMM

Figure 6-4 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 6-4 is based on data collected during April 2019. The diurnal pattern differs from the Windridge, Lagoon and Berm stations and are likely more influenced by daytime traffic emission (from vehicles serving Lafarge as well as regular highway traffic) given its location near the highway entrance to Lafarge.

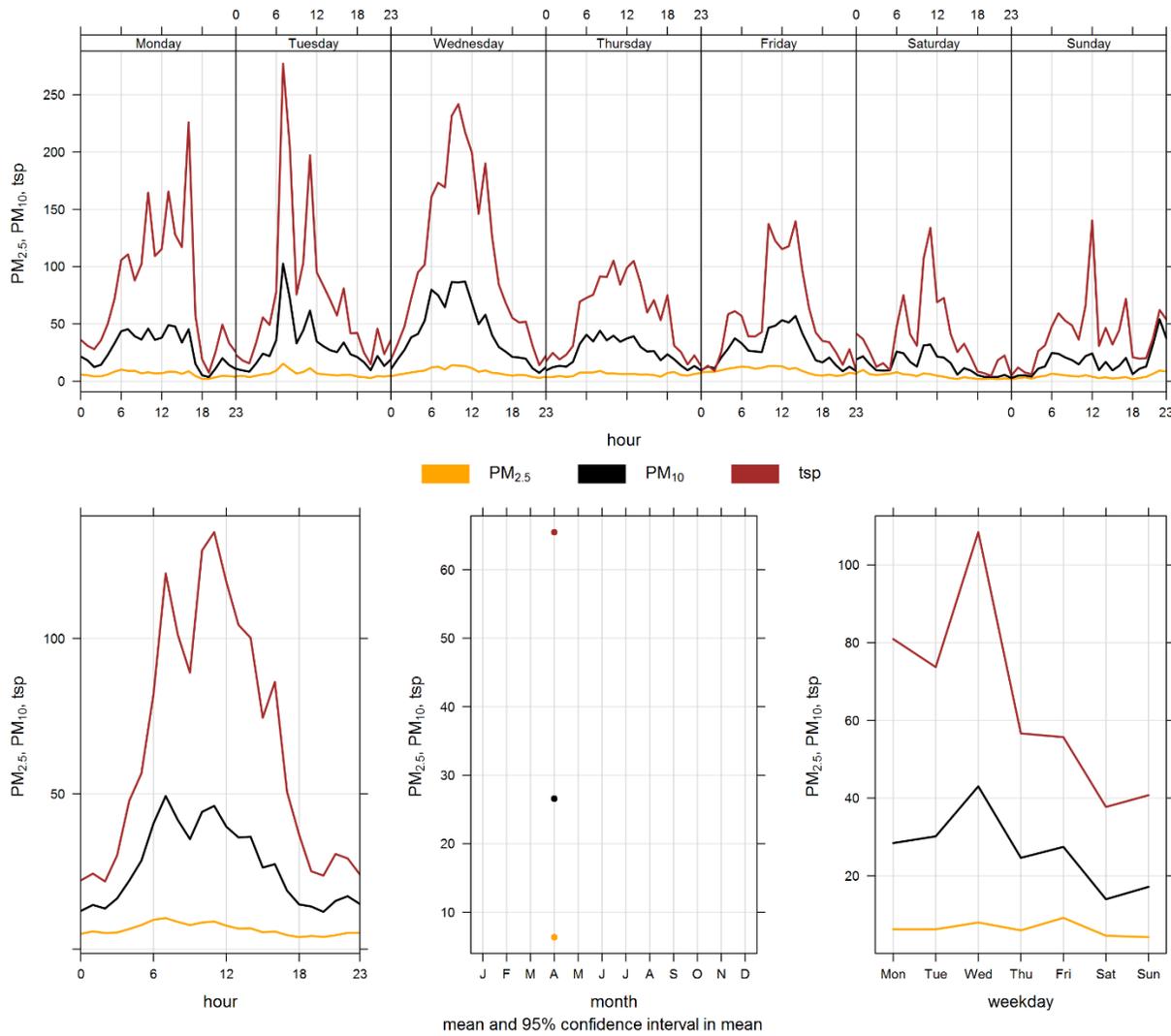


Figure 6-4 Entrance particulate matter time variation

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APPENDIX

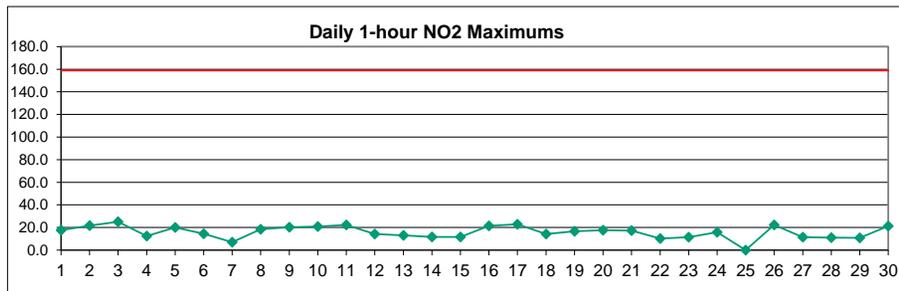
A DATA & CALIBRATION REPORTS

APPENDIX



Lagoon NO₂ (ppb) – April 2019

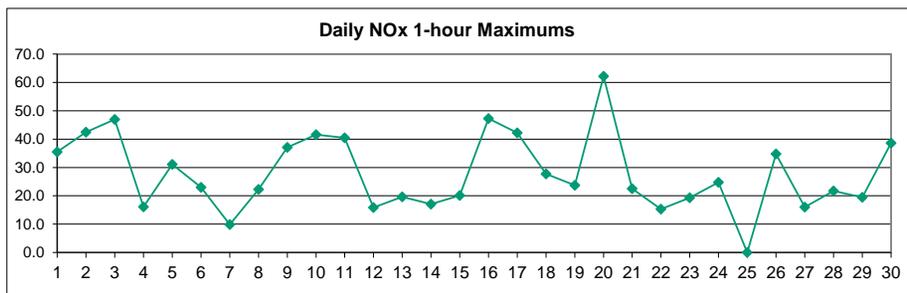
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	9.8	S	10.6	8.3	8.5	8.3	14.9	17.7	15.8	10.8	5.4	5.4	4.8	2.7	5.8	15.0	12.5	2.8	4.6	3.4	7.4	6.4	7.7	10.1	8.6	17.7
2	2.9	S	6.7	19.6	8.4	19.1	21.0	10.8	17.7	8.8	3.9	1.8	1.5	1.3	1.3	5.0	2.8	2.2	1.9	10.5	21.7	11.4	9.6	18.0	9.0	21.7
3	19.5	S	23.7	24.0	17.7	16.1	23.0	25.2	23.8	23.9	15.5	11.9	17.1	6.1	2.6	3.1	5.1	2.0	1.2	1.5	5.4	5.8	6.0	7.6	12.5	25.2
4	9.2	S	10.7	10.4	4.5	6.2	10.4	9.4	5.1	6.1	3.0	3.4	5.1	5.5	2.0	3.0	8.0	4.1	5.1	9.1	12.5	4.4	5.6	5.3	6.4	12.5
5	4.4	S	6.3	4.7	10.6	20.1	19.3	16.2	14.9	16.5	12.5	11.4	9.2	5.1	8.0	4.4	7.2	4.3	5.4	3.5	13.4	9.5	8.0	3.6	9.5	20.1
6	9.5	S	14.4	6.5	5.9	6.0	7.5	10.4	7.9	4.1	0.7	2.5	3.2	5.9	0.8	1.1	3.7	5.1	2.8	1.8	4.3	1.3	1.3	1.4	4.7	14.4
7	2.9	S	1.0	1.4	1.4	1.3	4.6	7.1	4.3	1.4	0.7	0.8	0.8	0.8	3.4	1.1	0.7	3.1	0.8	1.0	1.4	4.4	4.6	4.6	2.3	7.1
8	14.1	S	3.1	4.5	4.6	6.9	10.4	7.4	5.1	5.0	4.0	5.7	8.2	5.6	3.4	3.0	7.7	5.5	2.2	10.0	15.1	8.0	18.5	17.5	7.6	18.5
9	19.6	S	14.5	18.1	11.8	X	19.1	17.6	20.2	18.3	10.6	8.7	4.0	2.2	2.8	6.1	6.7	3.6	2.9	6.8	15.6	10.2	6.8	6.0	10.6	20.2
10	11.7	S	5.7	6.2	5.1	7.1	12.7	15.1	14.7	14.2	20.9	10.8	6.0	2.8	4.4	2.6	2.7	4.1	2.3	5.6	8.8	6.2	4.8	7.1	7.9	20.9
11	8.7	S	14.0	12.9	22.3	15.8	17.5	15.3	5.9	4.0	3.2	9.2	13.8	6.4	12.7	9.0	2.0	1.3	1.2	3.5	2.4	7.4	7.6	8.1	8.9	22.3
12	9.3	S	2.7	4.0	5.1	8.4	7.3	2.9	10.4	5.0	6.6	3.3	1.7	4.6	2.5	3.0	2.2	2.5	3.2	5.3	3.6	9.9	14.3	9.0	5.5	14.3
13	9.3	S	6.0	6.6	7.1	11.9	13.1	11.5	11.3	4.8	8.6	4.7	1.5	3.3	1.5	1.0	2.5	1.6	1.5	3.8	4.5	2.9	5.2	5.0	5.6	13.1
14	1.8	S	3.8	5.5	4.7	2.8	5.1	11.6	8.1	3.3	5.4	4.6	4.5	3.4	0.7	1.3	2.2	1.3	2.6	0.7	2.6	4.1	7.0	6.3	4.1	11.6
15	7.3	S	8.5	5.3	6.2	7.6	7.7	11.7	9.2	5.9	2.8	0.9	0.9	5.2	1.2	6.6	1.9	1.0	0.9	7.5	2.9	3.2	6.6	7.7	5.2	11.7
16	8.8	S	7.7	7.0	9.2	8.3	10.7	10.5	14.7	21.5	6.2	3.5	2.2	2.4	1.6	1.0	9.2	8.9	14.8	7.5	4.5	5.3	8.8	2.3	7.7	21.5
17	9.7	S	11.8	5.2	9.4	7.4	10.9	13.4	6.5	6.5	8.2	9.3	4.3	12.7	9.9	12.0	10.0	14.0	22.8	17.3	19.7	3.2	4.8	4.0	10.1	22.8
18	3.7	S	5.6	4.4	2.4	2.3	2.2	1.9	5.2	14.3	8.6	11.4	1.1	1.1	1.3	1.1	1.0	1.3	3.8	8.9	2.9	4.7	6.2	5.2	4.4	14.3
19	7.3	S	7.2	3.8	14.1	3.2	8.7	9.4	5.4	4.7	7.6	10.6	4.2	5.3	4.9	3.3	2.1	2.3	6.9	10.1	5.2	16.6	14.8	13.9	7.5	16.6
20	13.2	S	12.3	13.1	8.3	9.3	7.2	17.7	17.3	13.0	1.8	1.7	1.5	1.3	1.9	3.4	4.8	2.0	1.9	1.8	8.5	9.3	12.1	6.4	7.4	17.7
21	4.2	S	14.0	17.3	13.0	10.8	8.2	7.6	6.5	2.9	2.6	3.7	3.3	7.0	1.4	1.9	2.3	1.2	2.6	3.3	6.1	4.5	4.4	6.8	5.9	17.3
22	7.6	S	4.9	4.3	4.8	8.7	6.1	8.1	7.9	7.2	1.4	2.0	3.1	2.9	2.4	3.4	7.0	2.9	1.0	1.6	5.5	10.3	6.5	8.4	5.1	10.3
23	6.6	S	4.4	4.5	8.8	11.5	11.0	9.4	6.7	5.8	5.8	7.8	9.0	4.5	4.5	1.1	8.8	6.3	8.8	5.1	2.6	5.4	5.6	5.0	6.5	11.5
24	5.3	S	8.5	7.0	5.0	8.1	13.9	14.3	8.1	7.0	2.5	3.7	8.4	3.1	3.1	2.6	5.0	2.6	5.7	3.1	15.9	12.4	9.6	15.8	7.4	15.9
25	33.8	S	14.7	11.0	8.4	24.2	21.2	16.5	14.8	C	C	C	C	C	C	1.9	2.6	3.0	1.5	4.3	5.8	7.3	7.2	8.2	-	-
26	10.0	S	12.7	17.7	13.2	20.5	22.3	16.2	3.3	3.2	3.8	2.3	3.8	3.5	3.4	2.9	2.7	2.4	4.2	3.4	3.1	4.7	6.1	4.8	7.4	22.3
27	11.5	S	5.6	4.6	7.4	9.9	9.5	4.5	11.2	6.9	6.6	5.2	5.1	1.5	3.1	4.5	4.0	2.1	6.6	4.7	3.7	5.3	7.2	1.5	5.8	11.5
28	1.3	S	1.2	2.8	7.1	4.3	3.5	7.6	11.1	0.7	1.9	3.4	3.8	5.2	1.2	3.3	2.3	2.1	10.8	9.9	1.4	10.0	9.4	4.1	4.7	11.1
29	3.0	S	5.9	9.1	3.3	9.0	10.4	6.3	4.6	10.8	3.7	3.0	4.2	2.6	3.2	7.3	1.2	7.1	5.5	9.6	5.2	4.3	8.6	7.5	5.9	10.8
30	2.6	S	5.7	6.2	5.1	5.6	5.6	10.7	11.1	6.2	8.0	7.5	0.9	3.2	1.7	15.4	21.3	4.7	3.5	3.3	1.8	2.9	4.6	3.0	6.1	21.3
NO.	30	-	30	30	30	29	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	683	100%
MEAN	9.0	-	8.5	8.5	8.1	9.7	11.5	11.5	10.3	8.4	6.0	5.5	4.7	4.0	3.3	4.3	5.1	3.6	4.6	5.6	7.1	6.7	7.7	7.1		
MAX	33.8	-	23.7	24.0	22.3	24.2	23.0	25.2	23.8	23.9	20.9	11.9	17.1	12.7	12.7	15.4	21.3	14.0	22.8	17.3	21.7	16.6	18.5	18.0		



Number of 1HR Exceedences	0
Number of Non-Zero Readings	683
Maximum 1-HR Average	25.2 PPB
Maximum 24-HR Average	12.5 PPB
Monthly Calibration	6
Standard Deviation	5.1
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Average	7.0 PPB

Lagoon NOx (ppb) – April 2019

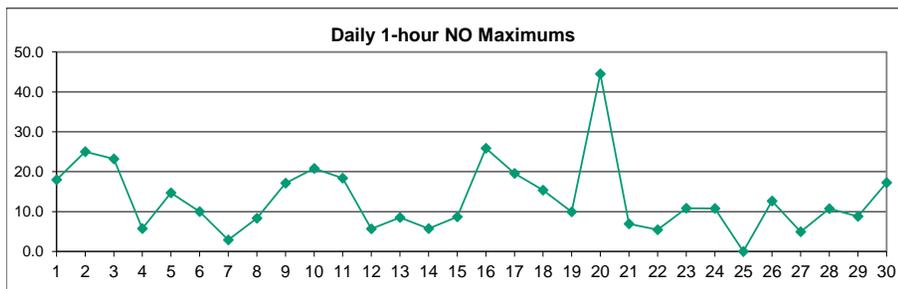
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	11.5	S	13.9	8.7	9.8	9.6	25.2	35.5	32.6	19.2	8.4	8.9	8.9	3.9	8.6	22.4	15.7	2.8	5.7	3.4	7.5	6.7	8.1	11.8	12.6	35.5
2	3.0	S	8.3	21.5	8.5	26.5	31.7	16.2	42.5	14.9	5.5	2.2	1.7	1.6	1.5	6.2	3.4	2.6	2.0	12.0	28.8	11.5	9.6	31.2	12.7	42.5
3	26.6	S	25.2	26.8	20.5	17.2	29.9	39.5	42.3	47.0	23.2	19.0	25.0	8.3	3.5	3.9	6.5	2.3	1.2	1.9	6.2	6.9	6.6	10.4	17.4	47.0
4	10.5	S	16.1	12.7	6.4	7.7	13.0	13.8	7.7	10.1	4.0	4.6	7.7	9.8	2.8	3.7	11.3	5.2	5.3	11.0	14.5	4.5	6.1	5.5	8.4	16.1
5	4.5	S	7.2	4.8	12.7	26.4	27.2	23.5	21.2	31.1	23.3	19.2	12.7	6.3	10.5	5.3	9.0	4.9	5.7	4.0	17.5	12.3	10.0	3.8	13.2	31.1
6	18.9	S	23.0	10.2	9.2	8.2	10.4	20.3	12.3	7.1	0.8	3.7	4.9	10.4	0.9	1.3	4.8	7.1	3.2	2.0	5.1	1.2	1.4	1.5	7.3	23.0
7	3.4	S	1.1	1.7	1.6	1.5	5.6	9.9	5.6	1.9	0.9	1.0	1.0	0.9	6.0	1.2	0.8	4.5	0.7	1.0	1.5	4.8	5.8	5.9	3.0	9.9
8	22.2	S	3.2	6.9	4.9	9.1	17.2	8.8	7.0	8.1	7.5	9.1	12.8	8.5	4.8	4.1	11.4	8.4	2.5	11.1	15.8	8.1	19.9	17.8	10.0	22.2
9	21.2	S	14.9	23.3	13.8	X	24.0	24.6	37.1	34.2	16.0	11.4	4.7	2.8	5.1	9.4	7.8	4.0	3.0	7.4	20.9	14.1	7.6	6.5	14.3	37.1
10	24.4	S	8.4	7.1	5.2	8.1	14.1	17.6	18.1	21.0	41.6	18.0	8.3	3.8	6.5	3.3	3.4	5.3	2.7	6.0	10.3	6.9	5.0	7.1	11.0	41.6
11	9.8	S	15.1	16.4	40.5	26.3	24.9	22.7	7.9	5.7	4.1	15.0	23.5	7.8	15.6	13.3	2.3	1.6	1.3	3.6	2.6	8.1	8.0	11.0	12.5	40.5
12	10.4	S	2.9	4.2	5.2	9.6	11.8	3.4	15.9	7.4	9.4	4.6	2.2	6.6	3.2	4.2	3.2	3.3	3.5	5.8	3.7	10.9	14.6	9.0	6.7	15.9
13	12.7	S	6.9	11.0	8.4	18.1	19.7	17.6	19.6	8.1	13.8	8.8	2.0	5.7	2.6	1.3	3.7	1.9	1.8	4.3	5.7	3.7	7.7	5.9	8.3	19.7
14	2.1	S	5.0	7.8	6.0	3.1	5.9	17.1	11.7	4.4	9.3	8.2	7.3	5.3	0.8	1.8	3.3	1.6	3.8	0.7	4.7	5.0	10.9	9.3	5.9	17.1
15	8.7	S	11.5	5.7	7.7	10.3	8.9	20.1	15.9	10.0	4.2	1.2	1.2	8.2	1.5	10.3	2.6	1.2	1.1	9.8	3.0	3.2	6.8	9.3	7.1	20.1
16	11.2	S	15.0	9.0	13.7	12.7	16.6	18.5	32.6	47.3	9.7	5.2	3.2	3.8	2.3	1.2	18.1	14.7	26.9	10.3	5.0	6.1	12.6	2.3	13.0	47.3
17	13.6	S	13.6	5.5	15.5	9.0	14.2	22.1	10.7	10.2	12.7	17.6	7.2	24.6	17.3	20.8	15.6	25.1	42.3	30.2	32.3	3.5	5.4	4.6	16.2	42.3
18	4.0	S	5.9	5.8	2.4	2.5	2.5	2.0	7.9	27.7	16.1	26.4	1.4	1.5	1.7	1.2	1.1	1.7	10.8	17.4	3.6	6.5	9.0	9.2	7.3	27.7
19	11.5	S	9.9	5.4	23.8	4.9	16.7	12.4	6.3	7.3	11.9	17.1	5.2	6.4	6.4	4.8	2.3	2.6	8.6	14.3	6.0	18.9	15.1	14.1	10.1	23.8
20	13.4	S	12.9	13.7	8.4	11.1	9.2	62.1	57.8	27.9	2.4	2.2	1.9	1.6	2.4	4.7	6.4	2.3	2.0	1.9	10.3	10.9	13.7	6.6	12.4	62.1
21	4.6	S	14.3	22.5	16.3	13.9	10.8	14.2	10.8	3.9	3.6	5.3	4.9	10.4	1.6	2.3	2.8	1.3	2.9	3.7	7.1	4.9	5.2	8.6	7.6	22.5
22	9.2	S	5.0	4.9	6.1	13.2	7.3	12.1	11.2	10.1	1.8	2.9	4.5	4.1	3.4	5.4	11.5	4.1	1.1	2.1	6.5	15.4	8.4	12.7	7.1	15.4
23	8.0	S	5.5	5.6	14.5	18.0	17.5	12.6	8.8	8.6	8.6	11.9	16.2	6.9	6.7	1.3	19.3	9.2	11.7	6.8	3.4	6.4	6.6	6.0	9.6	19.3
24	5.6	S	11.8	8.0	5.0	10.0	19.1	24.8	13.1	9.9	3.8	5.6	13.6	4.8	4.4	3.4	6.7	2.9	7.3	3.1	22.0	15.0	10.1	22.6	10.1	24.8
25	75.8	S	14.9	11.2	8.4	49.5	39.8	25.6	29.8	C	C	C	C	C	C	2.5	3.5	3.5	1.6	4.4	6.0	8.9	7.2	8.3	-	-
26	10.2	S	13.0	23.3	13.5	27.6	34.8	23.6	4.2	4.5	5.0	3.1	6.0	5.0	4.6	3.4	3.1	3.0	4.5	3.4	3.2	4.8	8.8	5.2	9.5	34.8
27	15.4	S	5.6	4.7	9.1	10.9	10.2	5.4	16.0	10.7	9.7	7.7	7.9	1.6	4.2	6.4	4.8	2.5	7.9	5.8	3.9	7.4	9.5	1.5	7.3	16.0
28	1.4	S	1.2	2.9	7.8	4.4	4.4	11.8	21.7	0.8	3.5	5.4	5.3	8.9	1.6	4.7	4.5	2.7	17.6	14.7	1.6	12.0	12.5	4.3	6.8	21.7
29	3.0	S	6.0	11.6	3.4	11.9	16.0	10.1	8.0	19.5	6.7	4.4	8.0	3.7	4.3	10.2	1.3	8.3	6.5	14.0	5.4	4.5	11.3	12.1	8.3	19.5
30	2.6	S	6.5	7.7	5.7	6.1	6.8	20.4	18.6	9.2	13.1	12.2	1.0	4.8	2.3	23.1	38.7	5.6	4.3	3.6	1.9	3.1	4.8	3.2	8.9	38.7
NO.	30	-	30	30	30	29	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	683	100%
MEAN	12.6	-	10.1	10.4	10.5	13.4	16.5	18.9	18.5	14.7	9.7	9.0	7.3	6.1	4.7	6.2	7.6	4.9	6.7	7.3	8.9	7.9	8.9	8.9		
MAX	75.8	-	25.2	26.8	40.5	49.5	39.8	62.1	57.8	47.3	41.6	26.4	25.0	24.6	17.3	23.1	38.7	25.1	42.3	30.2	32.3	18.9	19.9	31.2		



Number of Non-Zero Readings	683
Maximum 1-HR Average	62.1 PPB
Maximum 24-HR Average	17.4 PPB
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Calibration	6
Standard Deviation	9.015
Monthly Average	10.0 PPB

Lagoon NO (ppb) – April 2019

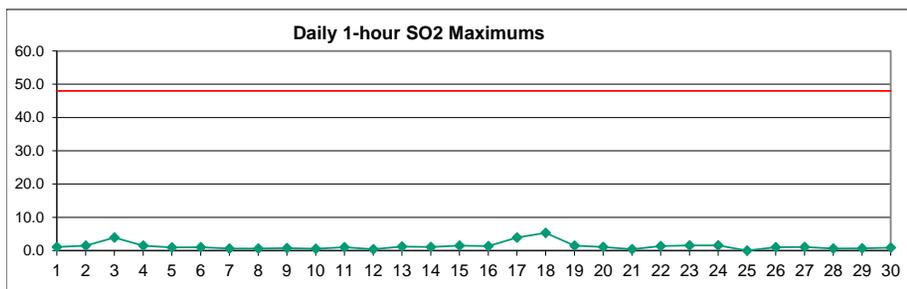
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	2.0	S	3.6	0.8	1.7	1.6	10.5	18.0	16.8	8.6	3.3	3.7	4.3	1.4	3.1	7.6	3.4	0.3	1.4	0.2	0.4	0.6	0.8	2.0	4.2	18.0
2	0.4	S	1.8	2.2	0.5	7.7	10.9	5.7	25.0	6.4	1.8	0.6	0.4	0.5	0.5	1.5	0.9	0.7	0.4	1.9	7.3	0.5	0.5	13.5	4.0	25.0
3	7.3	S	1.7	3.0	3.0	1.3	7.1	14.6	18.7	23.2	7.8	7.3	8.1	2.3	1.1	1.0	1.7	0.6	0.3	0.7	1.2	1.5	0.9	3.1	5.1	23.2
4	1.6	S	5.7	2.6	2.2	1.8	2.8	4.5	2.8	4.1	1.1	1.4	2.8	4.5	1.0	1.0	3.6	1.4	0.5	2.2	2.3	0.4	0.8	0.5	2.2	5.7
5	0.3	S	1.2	0.4	2.3	6.5	8.0	7.4	6.5	14.7	10.9	7.9	3.6	1.3	2.6	0.9	2.0	0.8	0.6	0.7	4.3	3.1	2.3	0.4	3.8	14.7
6	9.5	S	8.8	3.8	3.3	2.4	3.1	10.0	4.6	3.0	0.2	1.2	1.8	4.6	0.3	0.4	1.4	2.2	0.5	0.3	0.9	0.1	0.3	0.1	2.7	10.0
7	0.6	S	0.2	0.4	0.3	0.3	1.1	2.9	1.3	0.5	0.3	0.2	0.4	0.2	2.7	0.2	0.2	1.5	0.1	0.2	0.2	0.6	1.3	1.6	0.8	2.9
8	8.3	S	0.3	2.6	0.6	2.4	7.0	1.6	2.1	3.2	3.6	3.5	4.8	3.1	1.6	1.4	4.0	3.2	0.7	1.4	1.1	0.4	1.8	0.6	2.6	8.3
9	1.9	S	0.6	5.4	2.3	X	5.2	7.3	17.1	16.0	5.7	3.0	0.9	0.8	2.6	3.6	1.4	0.6	0.5	0.9	5.6	4.2	1.1	0.8	4.0	17.1
10	13.1	S	3.1	1.2	0.5	1.3	1.7	2.7	3.6	7.0	20.8	7.5	2.5	1.0	2.3	0.9	0.9	1.4	0.5	0.7	1.8	1.0	0.4	0.3	3.3	20.8
11	1.4	S	1.4	3.7	18.4	10.8	7.5	7.6	2.1	1.9	1.1	6.0	9.8	1.5	3.1	4.5	0.4	0.4	0.3	0.3	0.3	1.0	0.6	3.0	3.8	18.4
12	1.3	S	0.4	0.4	0.4	1.5	4.6	0.7	5.7	2.6	3.0	1.5	0.6	2.1	0.8	1.2	1.2	0.9	0.6	0.7	0.4	1.3	0.6	0.4	1.4	5.7
13	3.7	S	1.2	4.6	1.5	6.4	6.8	6.4	8.5	3.5	5.4	4.2	0.6	2.5	1.3	0.5	1.3	0.5	0.5	0.7	1.5	1.0	2.8	1.2	2.9	8.5
14	0.5	S	1.5	2.6	1.5	0.5	1.0	5.8	3.7	1.2	4.1	3.7	2.9	2.1	0.3	0.7	1.3	0.5	1.4	0.3	2.4	1.1	4.1	3.3	2.0	5.8
15	1.8	S	3.3	0.7	1.8	3.0	1.4	8.7	6.9	4.2	1.6	0.5	0.6	3.2	0.5	3.9	0.9	0.4	0.4	2.5	0.3	0.3	0.5	1.9	2.1	8.7
16	2.6	S	7.5	2.3	4.7	4.6	6.1	8.2	18.0	25.9	3.8	1.9	1.2	1.7	1.0	0.5	9.1	6.0	12.3	3.0	0.7	1.1	4.1	0.3	5.5	25.9
17	4.0	S	2.0	0.6	6.3	1.8	3.6	8.9	4.4	3.9	4.7	8.5	3.1	12.0	7.6	9.0	5.9	11.3	19.6	13.2	12.8	0.5	0.8	0.8	6.3	19.6
18	0.5	S	0.6	1.7	0.3	0.4	0.5	0.3	2.9	13.6	7.8	15.4	0.7	0.8	0.8	0.6	0.6	0.8	7.5	8.9	1.0	2.2	3.2	4.3	3.3	15.4
19	4.5	S	3.1	2.0	9.9	2.1	8.3	3.4	1.2	2.9	4.6	6.7	1.3	1.5	1.9	1.8	0.6	0.7	2.0	4.7	1.2	2.6	0.6	0.5	3.0	9.9
20	0.6	S	1.0	0.9	0.4	2.2	2.4	44.5	40.6	15.1	0.8	0.7	0.7	0.6	0.9	1.7	2.1	0.7	0.5	0.5	2.1	2.0	2.0	0.7	5.4	44.5
21	0.7	S	0.7	5.5	3.7	3.5	2.9	6.9	4.6	1.3	1.3	1.9	1.9	3.8	0.6	0.8	0.9	0.6	0.7	0.8	1.4	0.9	1.2	2.2	2.1	6.9
22	2.1	S	0.5	1.0	1.7	4.8	1.6	4.5	3.6	3.2	0.8	1.2	1.8	1.6	1.4	2.5	4.9	1.7	0.6	0.9	1.5	5.4	2.3	4.7	2.4	5.4
23	1.9	S	1.5	1.5	6.1	7.0	6.9	3.6	2.5	3.1	3.3	4.6	7.7	2.8	2.7	0.6	10.9	3.2	3.3	2.2	1.2	1.4	1.4	1.4	3.5	10.9
24	0.8	S	3.8	1.5	0.5	2.3	5.6	10.8	5.4	3.3	1.6	2.2	5.5	2.0	1.7	1.1	2.0	0.7	2.0	0.5	6.5	2.9	0.9	7.2	3.1	10.8
25	42.2	S	0.6	0.6	0.5	25.4	18.8	9.4	15.4	C	C	C	C	C	C	0.8	1.2	0.8	0.3	0.4	0.5	1.9	0.3	0.4	-	-
26	0.5	S	0.6	5.8	0.6	7.3	12.6	7.7	1.1	1.4	1.4	1.0	2.4	1.7	1.6	0.8	0.7	0.9	0.6	0.4	0.4	0.4	2.9	0.6	2.3	12.6
27	4.1	S	0.2	0.3	1.9	1.2	0.9	1.1	4.9	4.0	3.2	2.7	3.0	0.4	1.3	2.1	1.0	0.6	1.4	1.2	0.4	2.3	2.4	0.1	1.8	4.9
28	0.2	S	0.2	0.3	0.8	0.3	0.9	4.3	10.7	0.2	1.7	2.0	1.6	3.8	0.6	1.6	2.3	0.8	6.9	5.0	0.3	2.2	3.3	0.3	2.2	10.7
29	0.1	S	0.3	2.8	0.3	3.1	5.8	4.0	3.5	8.8	3.1	1.5	3.9	1.2	1.2	3.0	0.3	1.4	1.1	4.5	0.4	0.3	2.9	4.8	2.5	8.8
30	0.2	S	1.0	1.8	0.8	0.7	1.3	9.8	7.7	3.3	5.2	4.8	0.3	1.6	0.6	7.6	17.3	1.0	1.0	0.4	0.2	0.4	0.3	0.3	2.9	17.3
NO.	30	-	30	30	30	29	30	30	30	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	683	100%
MEAN	4.0	-	1.9	2.1	2.6	3.9	5.2	7.7	8.4	6.6	3.9	3.7	2.7	2.3	1.6	2.1	2.8	1.6	2.3	2.0	2.0	1.4	1.6	2.1		
MAX	42.2	-	8.8	5.8	18.4	25.4	18.8	44.5	40.6	25.9	20.8	15.4	9.8	12.0	7.6	9.0	17.3	11.3	19.6	13.2	12.8	5.4	4.1	13.5		



Number of Non-Zero Readings	683
Maximum 1-HR Average	44.5 PPB
Maximum 24-HR Average	6.3 PPB
Monthly Calibration	6
Standard Deviation	4.625
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Average	3.2 PPB

Lagoon SO₂ (ppb) – April 2019

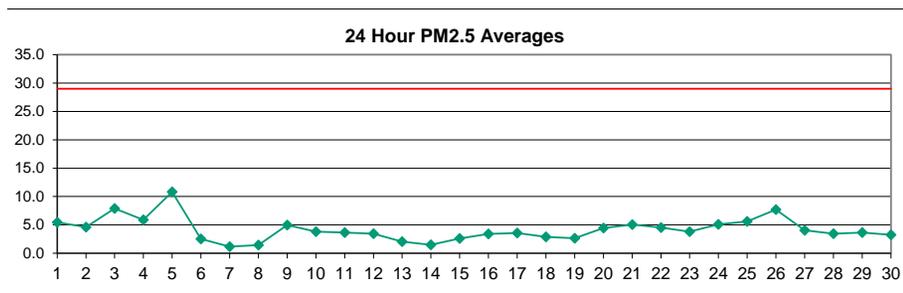
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	0.0	S	0.1	0.1	0.2	0.2	0.1	0.2	0.5	0.0	0.3	0.0	0.0	0.0	0.0	1.1	0.7	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.2	1.1
2	0.2	S	0.0	0.0	0.0	0.1	0.6	0.1	1.5	0.8	0.5	0.3	0.0	0.4	0.1	0.8	0.6	0.6	0.1	0.0	0.0	0.2	0.2	0.6	0.3	1.5
3	0.3	S	0.2	0.1	0.5	0.7	1.6	2.5	3.9	2.9	1.2	0.9	1.4	0.7	0.6	0.3	0.5	0.4	0.3	0.4	0.5	0.5	0.9	0.6	0.9	3.9
4	0.3	S	0.7	0.7	0.5	0.4	0.6	0.7	0.7	0.1	0.4	0.0	0.6	1.5	0.4	0.3	1.3	0.9	0.3	0.4	0.2	0.6	0.9	0.7	0.6	1.5
5	0.9	S	0.2	0.4	0.7	0.5	0.6	0.5	0.7	0.7	0.5	0.7	0.6	0.6	0.7	0.6	0.8	0.5	0.7	0.3	0.6	0.5	0.4	0.3	0.6	0.9
6	0.8	S	1.0	0.8	0.7	1.0	0.5	0.5	0.4	0.5	0.1	0.7	0.5	0.5	0.3	0.5	0.7	0.5	0.4	0.4	0.4	0.4	0.6	0.5	0.6	1.0
7	0.2	S	0.4	0.2	0.2	0.2	0.6	0.4	0.3	0.3	0.5	0.2	0.4	0.4	0.5	0.6	0.5	0.1	0.1	0.0	0.0	0.1	0.0	0.4	0.3	0.6
8	0.5	S	0.1	0.1	0.0	0.0	0.0	0.4	0.1	0.0	0.5	0.5	0.3	0.0	0.4	0.0	0.6	0.0	0.1	0.4	0.2	0.2	0.2	0.1	0.2	0.6
9	0.0	S	0.1	0.1	0.2	X	0.1	0.0	0.1	0.4	0.0	0.1	0.4	0.7	0.4	0.3	0.0	0.0	0.0	0.2	0.0	0.3	0.2	0.1	0.2	0.7
10	0.4	S	0.2	0.2	0.2	0.0	0.1	0.5	0.3	0.4	0.3	0.3	0.2	0.4	0.1	0.1	0.3	0.3	0.0	0.0	0.2	0.0	0.0	0.1	0.2	0.5
11	0.2	S	0.3	1.1	0.5	0.4	0.7	0.6	0.5	0.0	0.0	0.6	0.5	0.1	0.2	0.5	0.8	0.4	0.5	0.3	0.3	0.3	0.5	0.2	0.4	1.1
12	0.1	S	0.2	0.0	0.4	0.2	0.2	0.0	0.4	0.1	0.2	0.3	0.2	0.2	0.3	0.4	0.2	0.0	0.1	0.3	0.2	0.3	0.0	0.4	0.2	0.4
13	0.5	S	0.7	0.1	0.3	0.9	1.2	0.5	0.7	0.2	0.1	1.0	0.6	0.2	0.6	0.0	0.5	0.5	0.5	0.2	0.5	0.8	0.9	0.4	0.5	1.2
14	0.2	S	0.4	0.5	0.8	0.7	0.5	0.8	0.3	0.8	0.8	0.6	1.1	0.6	0.2	0.7	0.6	0.4	0.4	0.2	0.6	0.1	0.8	0.3	0.5	1.1
15	0.2	S	0.5	0.6	0.6	0.7	0.2	0.4	0.7	1.5	0.4	0.0	0.2	0.3	0.2	0.6	0.6	0.0	0.0	0.0	0.2	0.0	0.4	0.2	0.4	1.5
16	0.0	S	0.4	0.6	0.1	0.4	0.2	0.4	1.1	1.4	0.4	0.1	0.6	0.5	0.6	0.1	0.2	0.9	1.2	0.2	0.3	0.0	0.4	0.2	0.4	1.4
17	0.2	S	0.3	0.3	0.2	0.3	0.3	0.6	1.0	2.6	1.0	1.1	0.8	3.2	3.0	2.7	2.0	2.4	2.1	3.9	3.0	0.5	0.0	0.1	1.4	3.9
18	0.1	S	0.2	0.1	0.0	0.4	0.3	0.2	1.2	5.3	3.1	2.5	0.4	0.2	0.3	0.4	0.5	0.4	0.6	1.0	0.4	0.2	0.3	0.2	0.8	5.3
19	0.8	S	0.6	0.5	1.5	0.3	0.5	0.3	0.6	0.5	0.5	0.6	0.2	0.2	0.5	0.5	0.6	0.6	0.9	0.5	0.4	0.8	0.5	0.0	0.5	1.5
20	0.4	S	0.2	0.2	0.1	0.2	0.6	1.1	1.1	0.6	0.0	0.0	0.5	0.4	0.2	0.0	0.9	0.4	0.4	0.4	0.3	0.5	0.0	0.1	0.4	1.1
21	0.0	S	0.0	0.4	0.2	0.2	0.1	0.0	0.3	0.4	0.3	0.4	0.0	0.1	0.0	0.4	0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.2	0.4
22	0.0	S	0.5	0.3	0.5	1.4	1.1	0.6	0.0	0.2	0.3	0.4	0.4	0.2	0.0	0.5	0.6	0.7	0.6	0.6	0.1	0.3	0.0	0.5	0.4	1.4
23	0.2	S	0.5	0.2	0.4	0.5	0.7	1.2	0.7	0.7	1.0	1.4	1.4	0.2	1.5	0.4	0.3	0.6	0.0	0.4	0.3	0.2	0.4	0.5	0.6	1.5
24	0.1	S	0.7	0.1	0.3	0.1	0.2	0.3	0.5	0.0	0.0	0.3	1.6	0.6	0.1	0.0	0.2	0.1	0.0	0.2	0.5	0.6	0.4	0.1	0.3	1.6
25	0.4	S	0.3	0.3	0.1	0.2	0.3	0.7	0.8	C	C	C	C	C	C	0.0	0.3	0.3	0.3	0.2	0.3	0.6	0.5	0.4	-	-
26	0.4	S	0.0	0.4	0.5	0.5	0.8	0.5	0.8	1.0	0.5	0.6	0.5	0.8	0.5	0.7	0.7	0.5	0.1	0.4	0.5	0.4	0.5	0.7	0.5	1.0
27	0.8	S	0.5	0.7	1.0	0.7	0.6	0.6	0.7	0.5	0.5	0.5	1.1	0.3	0.8	0.8	0.5	0.3	0.5	0.6	0.4	0.5	0.4	0.2	0.6	1.1
28	0.5	S	0.4	0.6	0.5	0.3	0.1	0.2	0.4	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.6	0.4	0.0	0.0	0.2	0.6
29	0.1	S	0.1	0.3	0.1	0.1	0.4	0.3	0.0	0.3	0.2	0.0	0.2	0.7	0.2	0.3	0.4	0.1	0.0	0.4	0.2	0.4	0.0	0.4	0.2	0.7
30	0.2	S	0.2	0.1	0.9	0.0	0.0	0.6	0.6	0.0	0.4	0.2	0.1	0.3	0.4	0.4	0.6	0.0	0.0	0.1	0.2	0.4	0.5	0.5	0.3	0.9
NO.	30	-	30	30	30	29	30	30	30	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	683	100%
MEAN	0.3	-	0.3	0.3	0.4	0.4	0.5	0.5	0.7	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3		
MAX	0.9	-	1.0	1.1	1.5	1.4	1.6	2.5	3.9	5.3	3.1	2.5	1.6	3.2	3.0	2.7	2.0	2.4	2.1	3.9	3.0	0.8	0.9	0.7		



Number of 1HR Exceedences	0
Number of Non-Zero Readings	611
Maximum 1-HR Average	5.3 PPB
Maximum 24-HR Average	1.4 PPB
Monthly Calibration	6
Standard Deviation	0.507
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Average	0.4 PPB

Lagoon PM_{2.5} (µg/m³) – April 2019

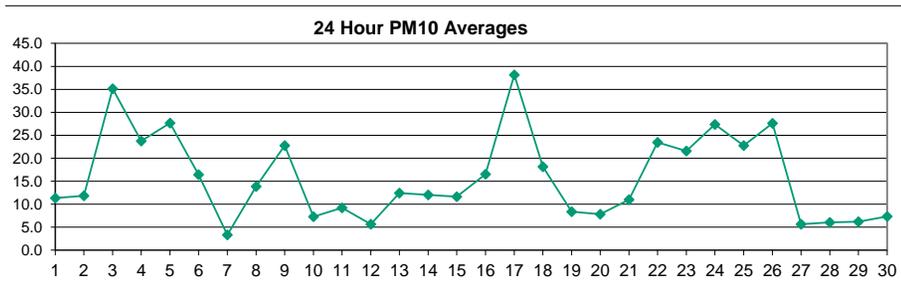
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	6.2	5.3	3.7	7.3	5.8	5.8	9.1	10.1	10.5	9.1	6.6	4.7	5.5	3.7	1.5	4.7	5.1	6.9	4.8	1.5	0.8	3.3	4.0	4.8	5.4	10.5
2	3.7	5.1	4.4	4.4	5.2	6.2	5.8	6.2	5.8	4.4	5.5	3.3	1.5	3.0	3.3	2.6	1.2	0.4	0.0	1.5	5.1	15.5	10.2	6.2	4.6	15.5
3	6.9	8.0	9.1	5.8	8.7	7.3	5.5	9.8	10.5	13.7	10.9	13.4	8.4	10.8	6.6	5.5	7.6	10.1	6.6	5.8	5.1	4.0	4.8	4.4	7.9	13.7
4	11.2	9.1	7.0	5.5	3.7	5.1	2.6	3.0	5.1	4.0	2.6	1.2	2.6	3.7	2.2	1.5	2.6	3.3	2.2	16.9	16.3	10.2	8.0	11.6	5.9	16.9
5	16.9	21.2	13.8	19.8	17.7	16.6	16.3	16.6	11.2	14.4	12.3	16.2	13.0	10.2	8.0	9.1	5.8	5.1	4.0	2.0	0.8	1.4	4.4	2.3	10.8	21.2
6	2.1	8.0	6.6	2.6	2.1	2.2	3.0	3.0	3.3	2.6	0.0	0.0	1.9	4.0	3.3	1.9	1.2	0.7	0.1	1.2	3.7	3.7	1.2	2.2	2.5	8.0
7	2.6	0.5	0.0	0.4	0.4	0.0	2.2	1.2	0.0	0.8	0.1	0.0	0.0	0.0	0.8	1.9	2.6	1.9	0.8	1.5	2.8	2.8	2.6	2.2	1.2	2.8
8	0.8	0.1	2.2	5.1	3.0	0.8	1.2	1.5	1.5	1.9	1.2	0.8	2.2	1.9	0.0	0.0	0.0	0.1	0.1	1.2	1.9	3.3	2.6	1.5	1.4	5.1
9	4.7	5.8	5.3	4.0	3.0	X	6.9	6.3	6.5	9.8	7.6	3.7	1.5	5.1	4.1	3.7	3.7	1.9	1.5	4.4	4.4	8.3	6.6	5.8	5.0	9.8
10	4.8	5.5	4.1	2.6	3.3	3.3	3.0	3.0	5.8	5.1	7.3	5.8	5.8	5.5	2.8	1.9	2.9	2.3	1.4	2.6	3.0	3.3	4.0	2.6	3.8	7.3
11	2.8	4.0	4.4	5.5	4.8	4.4	1.2	4.4	5.5	4.0	3.0	3.0	1.9	3.3	4.0	3.0	4.7	3.9	3.0	4.0	3.3	1.5	4.0	4.4	3.7	5.5
12	2.6	2.6	3.7	3.4	3.7	4.4	3.0	3.3	3.0	1.9	3.7	3.7	2.1	0.0	1.1	3.4	4.7	3.9	2.3	2.2	3.4	4.0	9.7	6.7	3.4	9.7
13	3.0	2.2	1.5	2.2	3.0	1.5	2.2	2.6	3.0	5.8	4.8	5.1	3.0	0.0	0.0	1.8	1.9	0.0	0.0	0.4	1.5	0.8	1.2	1.2	2.0	5.8
14	0.0	2.6	1.9	1.5	2.2	1.2	0.0	0.0	1.5	0.1	0.0	2.2	2.1	2.2	2.8	0.8	0.0	0.8	1.2	4.4	3.3	0.8	1.9	1.9	1.5	4.4
15	2.2	1.5	0.0	1.1	1.2	0.6	1.3	1.5	4.0	4.4	4.4	1.9	0.0	0.0	0.8	1.5	1.5	4.7	4.8	3.3	7.9	6.2	3.7	3.9	2.6	7.9
16	6.2	6.1	3.7	0.5	1.2	1.9	1.5	4.0	5.8	9.0	5.9	3.3	2.8	1.9	1.2	2.6	2.6	1.5	3.3	4.7	3.7	2.3	2.6	3.4	3.4	9.0
17	3.3	0.8	0.0	0.8	3.6	4.0	3.0	1.9	3.3	2.8	2.6	3.3	2.6	4.4	4.0	4.0	5.1	5.5	4.4	4.4	6.2	8.3	4.8	2.2	3.6	8.3
18	4.4	3.3	3.0	1.5	1.5	4.0	3.7	1.5	0.8	1.5	0.8	5.1	7.6	4.8	4.7	6.9	2.9	0.1	2.2	0.7	1.5	2.7	1.9	1.9	2.9	7.6
19	0.5	0.0	2.2	1.9	0.0	5.4	5.1	2.3	4.4	3.3	3.0	5.4	4.8	4.8	5.2	2.7	2.2	3.0	0.8	0.1	2.0	1.2	1.2	2.6	2.7	5.4
20	2.6	3.0	6.5	6.3	5.8	4.1	2.6	2.2	6.5	9.4	6.2	3.3	1.5	2.6	3.3	3.0	3.7	2.6	5.1	7.2	5.5	4.5	5.1	4.4	4.5	9.4
21	4.8	5.2	4.8	6.9	9.7	7.3	7.3	6.2	6.9	4.4	2.6	1.9	3.7	2.2	0.5	4.0	4.0	3.0	3.7	3.0	5.4	8.0	8.0	8.0	5.1	9.7
22	6.2	6.9	5.8	4.1	2.3	4.7	5.8	5.8	4.4	4.0	6.9	10.7	7.3	3.0	3.7	2.2	0.0	1.5	1.9	2.2	1.4	2.6	9.0	6.6	4.5	10.7
23	4.1	3.3	3.0	5.8	3.7	2.6	6.9	5.1	5.8	4.8	3.0	4.0	5.4	8.3	4.8	1.2	0.4	2.9	4.0	3.0	1.9	1.5	2.6	3.0	3.8	8.3
24	5.1	5.1	5.5	4.4	4.4	4.0	2.6	3.0	5.8	4.8	2.6	2.6	2.6	8.6	5.9	4.1	6.5	9.4	6.2	4.4	3.7	4.4	10.1	6.6	5.1	10.1
25	3.7	10.8	7.0	1.6	1.9	3.3	6.9	6.2	7.2	8.3	5.5	C	C	C	C	7.3	5.8	4.4	4.0	1.9	3.7	6.2	8.0	8.7	5.6	10.8
26	6.2	7.3	7.3	8.3	6.1	6.1	12.3	10.1	8.7	6.2	4.4	5.5	6.5	5.8	5.8	5.5	5.8	12.3	8.0	10.5	11.2	9.8	7.6	7.6	7.7	12.3
27	5.8	2.6	2.6	5.1	6.2	5.2	5.8	7.6	5.1	2.3	1.9	4.7	4.4	4.0	2.6	0.5	1.2	1.9	2.6	4.0	4.6	4.4	4.4	7.3	4.0	7.6
28	5.1	3.3	3.3	3.4	4.4	3.0	2.6	4.0	3.7	2.2	1.9	2.0	2.2	3.0	6.2	3.3	1.5	2.2	1.5	3.7	4.4	5.5	6.5	4.0	3.5	6.5
29	2.6	6.2	5.1	2.6	5.1	4.4	2.6	1.9	2.2	0.1	2.0	4.0	4.0	4.4	3.3	3.3	8.9	6.2	3.0	4.0	5.1	3.7	1.5	1.2	3.6	8.9
30	3.0	3.3	4.4	4.4	5.8	4.8	3.0	2.2	3.0	3.0	2.6	1.5	3.0	3.7	3.7	3.0	3.0	3.0	3.0	3.8	4.7	4.0	2.0	0.5	3.3	5.8
NO.	30	30	30	30	30	29	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	715	100%
MEAN	4.5	5.0	4.4	4.3	4.3	4.3	4.5	4.6	5.0	4.9	4.1	4.2	3.8	4.0	3.3	3.2	3.3	3.5	2.9	3.7	4.3	4.6	4.8	4.3		
MAX	16.9	21.2	13.8	19.8	17.7	16.6	16.3	16.6	11.2	14.4	12.3	16.2	13.0	10.8	8.0	9.1	8.9	12.3	8.0	16.9	16.3	15.5	10.2	11.6		



Number of 24HR Exceedences	0
Number of Non-Zero Readings	686
Maximum 1-HR Average	21.2 UG/M3
Maximum 24-HR Average	10.8 UG/M3
Monthly Calibration	4
Standard Deviation	3.081
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Average	4.2 UG/M3

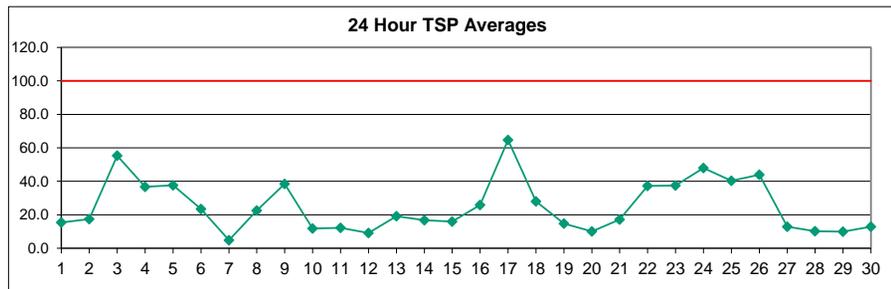
Lagoon PM₁₀ (µg/m³) – April 2019

Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	5.3	4.7	4.0	6.7	10.7	7.4	6.0	7.4	9.4	53.2	33.9	17.6	8.1	7.4	7.4	9.4	26.2	12.2	6.1	0.0	0.0	6.0	8.0	15.4	11.4	53.2	
2	9.4	8.7	8.0	4.7	0.6	1.3	7.3	14.8	12.8	30.4	34.4	16.3	14.2	14.1	10.8	16.8	17.5	4.7	4.6	0.0	0.0	25.5	14.3	12.8	11.8	34.4	
3	16.1	10.1	21.5	18.2	14.2	17.1	17.5	39.0	75.5	173.9	77.2	62.4	44.8	76.9	31.4	29.7	41.8	31.8	14.3	10.1	7.4	4.7	2.2	5.3	35.1	173.9	
4	46.3	57.4	16.5	18.2	11.7	27.6	8.9	32.9	37.1	33.9	16.3	4.1	20.9	30.5	40.7	17.7	16.8	36.3	11.0	40.3	20.4	8.1	8.0	8.8	23.8	57.4	
5	23.5	21.6	33.0	33.8	32.4	29.5	33.8	38.5	37.2	38.5	49.3	37.9	40.5	26.5	23.0	27.0	12.2	23.5	25.6	10.9	6.0	17.0	31.6	11.6	27.7	49.3	
6	19.9	46.4	5.0	8.0	24.8	28.2	5.5	36.9	31.8	11.6	11.4	24.9	29.7	52.5	34.6	0.0	0.0	3.3	4.7	5.3	3.3	3.3	3.3	0.0	16.4	52.5	
7	0.6	1.3	0.0	1.9	2.1	0.6	0.0	0.0	3.9	8.0	7.4	6.7	2.7	1.9	4.0	1.3	3.9	6.0	10.2	7.4	0.0	5.3	5.3	0.0	3.4	10.2	
8	7.3	7.4	4.7	10.0	8.7	5.4	6.0	19.4	24.3	30.3	17.6	5.9	8.7	12.1	28.0	47.8	21.2	20.9	16.2	0.0	0.0	1.2	9.3	20.1	13.9	47.8	
9	14.9	16.2	8.9	3.4	4.6	X	11.4	33.6	106.2	80.8	83.3	31.0	24.3	13.6	10.1	7.4	8.7	15.4	8.8	7.4	6.0	8.7	9.4	9.4	22.8	106.2	
10	8.7	7.4	7.4	6.7	6.7	6.0	1.3	2.6	11.3	12.1	14.8	17.5	16.2	14.8	6.1	4.0	0.0	0.0	2.6	4.6	6.7	9.4	5.8	2.7	7.3	17.5	
11	3.3	14.7	15.5	6.8	8.7	8.7	3.4	6.6	44.9	17.8	12.8	5.4	0.0	3.9	6.0	7.3	15.4	8.8	6.0	4.0	5.3	4.7	5.3	5.8	9.2	44.9	
12	1.3	1.9	4.6	4.0	4.6	3.3	4.0	4.6	4.0	4.6	20.7	7.5	10.7	12.1	10.8	11.4	6.7	4.7	4.7	0.0	0.0	0.0	2.5	7.3	5.7	20.7	
13	11.4	3.4	0.0	5.7	9.4	4.0	0.0	6.6	45.5	40.0	33.2	49.8	24.6	7.6	21.4	7.6	8.0	6.0	4.0	0.0	0.0	0.0	1.9	8.0	12.4	49.8	
14	4.7	6.7	7.4	2.0	3.9	4.6	5.3	7.3	66.9	9.5	8.7	24.8	24.3	46.4	15.2	8.1	10.0	12.1	6.1	0.7	0.0	0.0	7.9	6.1	12.0	66.9	
15	3.3	3.3	3.3	3.3	6.0	6.0	4.7	23.4	68.4	26.9	22.5	12.2	7.4	3.4	25.4	1.6	20.7	7.5	4.0	0.6	2.6	6.6	8.0	8.7	11.7	68.4	
16	10.1	8.7	7.4	6.7	6.7	6.0	4.7	7.3	21.4	67.7	61.7	27.5	15.7	13.5	10.8	7.4	6.0	17.4	28.2	55.1	0.0	0.0	3.2	3.3	16.5	67.7	
17	2.6	5.3	7.4	6.0	22.0	13.6	12.1	38.1	43.2	41.9	54.6	38.1	38.5	48.5	49.4	114.9	95.1	58.0	48.8	55.4	64.2	47.6	3.3	7.3	38.2	114.9	
18	7.4	3.4	5.3	10.0	8.7	3.4	5.3	8.7	10.7	28.8	42.8	51.3	75.4	33.4	21.1	23.5	18.9	26.9	31.0	0.0	0.0	0.0	7.2	13.4	18.2	75.4	
19	12.1	26.1	15.0	10.1	6.1	46.1	6.4	14.7	10.8	10.8	10.8	10.1	5.4	0.7	0.0	1.2	2.6	0.0	0.8	2.6	0.0	0.0	4.5	4.0	8.4	46.1	
20	6.0	10.7	8.1	6.0	8.0	8.7	7.4	8.7	18.7	12.8	10.1	6.7	5.3	6.0	4.0	19.2	19.5	6.2	1.3	0.0	0.0	0.8	7.3	6.7	7.9	19.5	
21	4.0	2.0	5.3	12.7	12.7	10.8	11.4	8.8	7.4	8.0	24.7	7.0	7.4	8.0	18.7	3.5	4.6	16.6	8.2	8.0	0.0	15.0	32.8	25.8	11.0	32.8	
22	34.3	10.5	6.1	0.7	2.6	4.7	5.3	8.7	27.8	31.7	39.7	38.5	29.8	47.0	48.6	35.3	27.1	39.6	29.2	6.4	6.0	22.7	14.3	46.8	23.5	48.6	
23	26.7	11.0	11.4	14.8	16.1	13.5	14.8	30.8	57.7	18.9	27.5	55.6	63.4	66.9	11.7	34.7	11.8	27.8	0.0	0.0	1.2	0.0	0.6	0.6	21.6	66.9	
24	0.0	1.9	3.3	2.6	3.3	2.6	2.6	24.6	49.6	47.4	22.7	15.6	38.1	125.7	33.4	33.1	83.7	85.9	32.7	4.5	7.3	11.3	12.8	12.8	27.4	125.7	
25	23.4	37.6	13.9	15.5	15.6	12.2	56.0	51.5	54.1	44.3	28.7	C	C	C	C	16.9	28.3	19.6	4.0	0.0	0.0	4.6	14.8	14.1	22.8	56.0	
26	12.1	18.9	22.9	19.6	26.3	21.6	47.3	52.7	64.2	48.1	25.7	43.2	39.2	40.6	23.7	18.9	24.9	20.9	15.5	23.6	18.9	15.5	10.1	8.7	27.6	64.2	
27	4.0	4.6	10.0	10.1	5.3	3.3	7.3	10.7	2.7	0.0	5.3	8.6	7.4	2.1	0.0	1.3	4.0	4.6	5.3	6.7	8.0	4.0	5.3	15.5	5.7	15.5	
28	10.1	7.4	4.7	4.0	2.6	4.6	4.7	2.0	16.8	12.1	8.1	5.8	10.1	10.7	7.4	7.4	7.4	2.0	0.0	0.0	2.6	0.0	4.6	10.7	6.1	16.8	
29	8.7	8.0	8.0	7.4	4.0	2.0	0.6	4.6	18.8	14.8	13.5	12.1	6.7	4.0	6.0	8.0	6.7	0.6	1.9	1.3	0.0	0.6	3.3	7.3	6.2	18.8	
30	8.7	4.7	4.7	5.3	4.0	4.0	2.0	6.7	11.6	26.2	21.6	10.1	30.3	2.2	4.6	7.3	6.7	9.4	4.7	0.0	0.0	0.0	0.6	0.6	7.3	30.3	
NO.	30	30	30	30	30	29	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	715	100%
MEAN	11.5	12.4	9.1	8.8	9.8	10.6	10.1	18.4	33.2	32.8	28.0	22.6	22.4	25.3	17.7	17.7	18.6	17.6	11.4	8.5	5.5	7.4	8.3	10.0			
MAX	46.3	57.4	33.0	33.8	32.4	46.1	56.0	52.7	106.2	173.9	83.3	62.4	75.4	125.7	49.4	114.9	95.1	85.9	48.8	55.4	64.2	47.6	32.8	46.8			



Lagoon TSP ($\mu\text{g}/\text{m}^3$) – April 2019

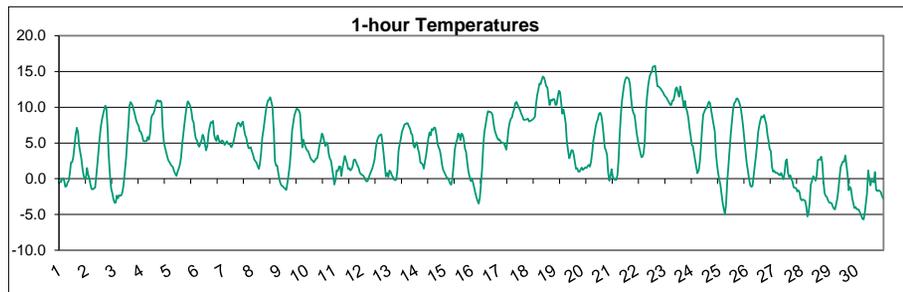
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	11.3	18.2	3.0	7.1	9.9	5.8	4.4	3.0	15.4	69.1	30.2	14.1	14.0	8.5	7.1	19.5	31.8	38.9	5.4	9.9	3.2	5.7	7.1	26.4	15.4	69.1
2	16.1	16.8	8.5	3.0	3.0	1.6	22.8	15.4	18.2	35.6	32.0	18.2	10.5	7.1	7.1	14.0	12.6	7.1	9.9	20.9	30.6	60.9	25.2	22.3	17.5	60.9
3	16.8	29.2	33.4	16.9	25.1	27.8	23.7	61.3	123.0	251.3	112.7	99.7	61.2	153.3	43.5	47.2	52.7	69.3	26.6	12.7	9.9	11.3	7.1	11.3	55.3	251.3
4	66.3	112.0	26.9	16.8	14.0	40.2	11.4	53.9	48.6	50.0	25.2	14.1	29.2	49.9	56.8	11.5	18.1	78.7	23.2	52.6	30.3	18.4	14.0	19.5	36.7	112.0
5	30.6	29.2	27.9	36.1	36.2	43.0	48.2	54.1	45.9	56.8	63.7	47.3	50.0	36.2	30.6	21.0	8.6	44.3	56.8	21.2	3.1	37.4	58.2	17.0	37.6	63.7
6	25.0	49.9	17.0	18.2	34.7	40.3	8.7	48.4	39.0	14.2	4.4	5.7	31.9	80.2	61.8	11.6	12.6	14.0	10.6	7.1	4.4	16.7	0.3	5.7	23.4	80.2
7	7.1	4.4	5.8	3.0	0.2	4.3	3.0	1.6	7.1	8.0	3.0	1.1	1.6	0.2	2.9	7.1	5.7	3.0	19.5	1.2	4.3	16.7	0.0	4.3	4.8	19.5
8	18.1	13.1	11.3	9.9	7.1	1.6	5.7	22.2	25.1	27.8	18.2	8.6	23.6	15.5	41.5	51.3	22.5	40.2	44.4	23.8	22.8	30.6	25.1	32.1	22.6	51.3
9	18.5	36.1	16.9	9.9	8.0	X	12.7	52.5	176.4	114.0	117.7	51.7	27.7	30.1	16.9	7.2	22.2	34.7	32.0	10.0	18.1	29.2	22.4	19.6	38.4	176.4
10	5.8	20.9	3.1	7.1	8.5	7.1	8.5	12.9	26.4	16.0	22.3	22.8	19.6	15.4	8.6	22.2	8.6	7.8	4.4	3.0	16.7	4.4	5.7	5.8	11.8	26.4
11	12.6	25.1	18.2	1.7	7.1	4.4	4.4	15.3	66.2	15.7	18.2	15.4	8.0	8.5	8.5	8.5	15.4	7.2	3.0	12.6	5.8	4.4	3.2	3.1	12.2	66.2
12	9.8	15.4	4.4	3.0	7.1	4.4	3.0	5.7	4.4	3.0	16.7	12.7	7.1	9.8	15.4	16.8	13.0	9.9	4.4	3.1	5.7	9.9	14.0	19.5	9.1	19.5
13	10.6	7.1	3.0	0.2	4.3	4.4	7.1	10.5	61.2	67.9	55.6	72.0	37.8	10.1	30.5	18.3	11.3	8.5	4.4	3.0	5.7	5.7	9.9	12.6	19.2	72.0
14	5.8	16.1	0.3	3.0	5.7	5.7	15.3	1.7	111.4	1.0	7.1	31.8	25.1	74.5	18.9	5.8	16.7	9.9	9.9	5.4	1.6	3.0	12.6	12.6	16.7	111.4
15	9.9	5.8	3.0	1.6	7.1	7.1	3.1	27.3	97.8	30.7	25.3	11.4	7.1	4.4	38.6	3.4	22.2	16.8	3.1	7.1	11.2	9.9	20.9	8.6	16.0	97.8
16	7.1	14.0	1.7	2.9	4.3	8.5	8.5	20.8	30.5	93.7	94.2	32.5	27.9	4.5	12.6	7.2	12.6	41.5	66.3	96.8	7.8	5.3	11.2	7.2	25.8	96.8
17	12.6	12.6	7.2	7.1	41.4	21.1	10.0	70.2	68.0	65.2	70.6	59.7	63.8	73.4	95.4	175.0	171.6	79.8	102.3	124.4	121.9	87.6	2.3	9.8	64.7	175.0
18	8.5	5.8	8.5	23.6	8.6	5.8	8.5	18.3	18.2	25.2	73.4	83.0	105.0	23.0	26.4	30.6	36.1	37.5	48.7	11.2	18.1	8.6	25.1	15.5	28.0	105.0
19	27.8	33.3	19.7	3.1	4.3	71.5	17.3	23.6	25.1	12.8	14.0	22.3	10.0	9.8	4.4	1.6	4.3	7.1	7.1	5.7	5.7	5.3	8.5	11.2	14.8	71.5
20	9.9	23.6	7.3	8.5	10.5	8.5	15.4	7.9	19.5	12.7	11.3	5.3	3.0	1.6	0.2	2.9	30.4	10.1	12.6	10.7	4.4	5.7	3.0	16.7	10.1	30.4
21	4.5	5.8	14.0	8.6	14.0	9.9	11.3	7.2	7.1	4.4	24.9	3.2	7.1	8.5	18.1	7.2	7.1	18.1	12.7	15.4	25.0	56.5	80.1	42.0	17.2	80.1
22	65.0	20.0	5.4	9.8	16.7	5.8	5.7	15.9	38.7	43.0	55.4	54.1	28.1	52.5	48.6	33.5	34.7	64.9	30.9	15.5	15.4	59.2	78.8	95.4	37.2	95.4
23	51.8	15.8	27.7	12.8	22.2	15.5	25.0	47.0	91.0	40.8	43.0	85.5	85.9	102.2	14.9	67.4	10.5	66.0	11.8	34.5	8.3	4.4	1.6	13.9	37.5	102.2
24	8.6	14.0	0.3	5.7	8.5	14.0	0.3	24.8	73.0	72.1	48.5	22.6	56.5	212.8	43.4	49.9	160.8	152.3	48.3	36.3	18.4	30.5	25.1	22.9	47.9	212.8
25	40.1	70.4	20.1	31.9	16.1	29.1	96.3	66.9	108.8	84.8	25.8	C	C	C	C	23.9	26.4	22.3	16.8	15.4	27.6	25.1	19.6	38.9	40.3	108.8
26	27.9	43.0	23.9	30.6	41.6	22.4	88.5	76.5	90.0	63.9	28.0	59.5	85.8	63.9	47.2	29.3	45.8	45.8	36.2	49.9	21.0	15.4	8.5	11.3	44.0	90.0
27	7.1	18.1	12.7	14.0	8.5	5.8	12.6	7.1	3.0	5.7	3.0	1.6	9.8	11.3	5.2	7.8	5.7	22.3	5.8	35.2	22.4	14.1	33.3	36.1	12.8	36.1
28	9.9	16.8	0.0	1.6	4.3	8.5	7.1	7.1	4.4	12.6	8.5	3.0	26.4	18.3	0.0	0.0	15.4	9.9	5.8	23.6	21.0	8.5	22.3	9.9	10.2	26.4
29	14.0	20.4	3.1	4.3	3.0	5.2	7.1	5.7	9.9	14.0	9.9	12.9	9.9	12.6	7.1	11.3	29.2	9.9	7.1	7.1	9.9	5.1	7.1	14.0	10.0	29.2
30	12.7	12.6	9.9	4.4	0.0	5.7	14.0	5.8	27.8	44.4	16.9	18.1	55.3	7.3	9.9	9.9	9.9	11.3	12.6	7.1	3.1	0.8	3.0	5.7	12.8	55.3
NO.	30	30	30	30	30	29	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	715	100%
MEAN	19.1	24.2	11.5	10.2	12.7	15.0	17.0	26.4	49.4	45.2	36.0	30.7	32.0	38.1	24.9	24.1	29.1	33.0	22.8	22.8	16.8	19.9	18.5	19.0		
MAX	66.3	112.0	33.4	36.1	41.6	71.5	96.3	76.5	176.4	251.3	117.7	99.7	105.0	212.8	95.4	175.0	171.6	152.3	102.3	124.4	121.9	87.6	80.1	95.4		



Number of 24HR Exceedences	0
Number of Non-Zero Readings	710
Maximum 1-HR Average	251.3 UG/M3
Maximum 24-HR Average	64.7 UG/M3
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Calibration	4
Standard Deviation	29.3
Monthly Average	24.9 UG/M3

Lagoon Temperature (°C) – April 2019

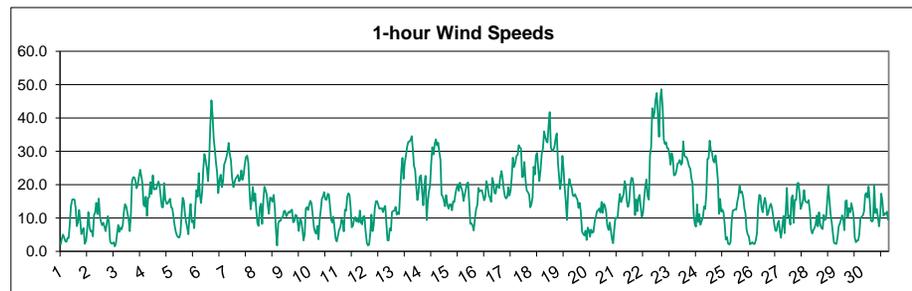
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-0.3	-0.5	0.0	0.1	-0.3	-1.1	-1.0	-0.5	-0.3	0.7	2.3	2.3	3.0	4.4	6.0	7.1	6.5	4.7	3.7	2.8	1.5	0.4	-0.1	0.0	1.7	7.1	
2	1.5	0.6	0.1	-0.8	-1.5	-1.5	-1.4	-1.2	0.4	2.1	3.9	5.7	7.2	8.3	9.0	9.6	10.2	9.8	7.1	3.2	0.4	-1.4	-2.0	-2.9	2.8	10.2	
3	-3.3	-3.3	-2.4	-2.7	-2.3	-2.4	-2.3	-1.8	-0.8	0.9	2.9	5.3	7.4	10.2	10.7	10.4	10.1	9.4	8.8	8.1	7.7	7.4	6.7	6.6	3.8	10.7	
4	6.0	5.3	5.2	5.3	5.3	5.8	5.4	6.3	8.5	8.9	9.1	9.6	10.3	10.9	11.0	10.7	10.9	10.6	7.2	5.2	4.4	3.8	3.1	2.6	7.1	11.0	
5	2.3	2.0	1.8	1.7	1.1	0.7	0.4	1.0	1.4	2.0	2.9	4.7	6.2	7.6	8.9	10.1	10.8	10.6	10.3	9.5	8.2	7.9	6.5	5.6	5.2	10.8	
6	5.4	4.7	4.5	4.9	5.4	6.2	5.8	4.8	4.0	4.7	6.4	7.2	7.9	7.8	8.1	6.1	5.6	5.3	6.1	5.5	5.0	5.2	5.4	5.2	5.7	8.1	
7	4.7	5.0	5.2	4.9	4.9	4.7	4.4	4.8	5.2	6.0	6.9	7.5	7.8	7.7	7.3	7.7	8.0	7.0	6.1	5.7	4.9	4.3	4.3	4.4	5.8	8.0	
8	3.8	3.4	2.7	2.5	2.2	1.7	1.4	2.2	3.8	5.8	6.8	8.1	9.3	10.3	10.9	11.1	11.4	10.8	10.1	6.6	2.5	1.8	1.8	0.8	5.5	11.4	
9	-0.1	-0.7	-1.0	-1.1	-1.2	X	-1.6	-0.6	0.5	2.0	4.1	6.7	7.8	8.9	9.4	9.8	9.7	9.5	9.1	6.5	4.4	5.5	4.8	4.3	4.2	9.8	
10	4.0	3.9	3.4	2.9	2.7	2.5	2.3	2.5	2.8	2.9	3.6	4.7	5.3	6.3	6.0	5.2	4.6	5.0	4.9	3.5	2.8	2.5	1.5	0.4	3.6	6.3	
11	-0.8	-0.2	1.1	1.1	1.7	1.7	0.4	1.5	2.3	3.2	2.7	2.1	1.4	1.5	1.2	1.3	1.7	2.6	2.7	2.3	1.9	1.6	0.9	0.7	1.5	3.2	
12	0.5	0.5	0.2	-0.2	-0.4	-0.3	0.1	0.6	1.1	1.4	2.0	2.7	4.2	5.2	5.7	6.0	6.1	6.2	5.0	3.5	1.9	0.3	0.8	0.3	2.2	6.2	
13	1.1	1.0	0.5	0.2	-0.1	-0.2	-0.1	1.2	3.8	4.9	5.6	6.6	7.0	7.6	7.6	7.8	7.7	7.3	7.0	6.3	6.2	4.7	4.3	4.9	4.3	7.8	
14	5.1	4.2	3.6	2.2	2.2	2.0	1.4	2.4	3.3	4.5	5.6	6.5	6.1	6.9	6.7	7.1	7.2	6.1	4.9	4.4	4.0	3.1	1.9	1.2	4.3	7.2	
15	0.9	0.5	0.2	0.1	-0.2	-0.7	-0.8	-0.2	2.0	4.1	5.0	5.4	6.3	6.2	5.4	6.3	6.1	5.5	4.2	3.8	2.4	1.1	0.2	-0.3	2.6	6.3	
16	0.0	-0.5	-1.3	-2.0	-2.6	-3.1	-3.5	-2.6	-0.7	1.4	4.5	6.5	7.6	8.7	9.5	9.4	9.3	9.2	8.9	7.7	6.7	6.3	5.8	5.4	3.8	9.5	
17	5.5	5.2	5.1	5.0	4.9	4.5	4.1	5.4	7.0	7.9	8.4	8.6	9.3	9.7	10.6	10.8	10.4	9.9	9.6	9.1	8.8	8.3	8.2	8.3	7.7	10.8	
18	8.3	8.4	8.0	8.1	8.1	8.3	8.4	8.7	10.5	11.7	12.4	13.3	13.2	13.8	14.3	14.1	13.6	12.9	12.8	11.4	10.3	11.0	10.9	11.2	11.0	14.3	
19	11.1	10.3	10.4	11.5	12.3	12.1	10.7	9.1	9.7	8.9	7.7	5.3	3.8	2.9	3.4	4.0	4.0	3.3	2.3	1.4	1.5	1.0	1.0	1.3	6.2	12.3	
20	1.6	1.3	1.4	1.6	1.5	1.8	1.9	1.7	2.3	3.6	5.3	6.1	7.1	7.9	8.3	9.0	9.2	8.8	7.7	6.1	4.3	4.0	3.3	0.9	4.4	9.2	
21	-0.3	0.4	1.3	0.4	0.0	-0.1	0.1	0.5	2.6	6.0	8.8	10.9	12.1	13.2	13.9	14.2	14.1	14.0	13.3	11.5	9.9	9.2	8.9	7.6	7.2	14.2	
22	6.2	5.3	4.5	3.8	3.0	3.1	3.6	5.2	9.4	11.4	13.0	14.2	14.7	14.9	15.6	15.7	15.8	14.3	12.9	12.9	12.7	12.6	12.3	12.1	10.4	15.8	
23	11.7	11.5	11.3	11.0	10.7	10.4	10.3	10.9	11.0	11.6	12.6	12.8	12.0	11.5	12.9	12.0	11.1	10.1	10.9	9.8	9.4	8.5	7.1	6.0	10.7	12.9	
24	4.7	4.6	3.6	2.6	1.6	0.8	1.2	2.4	4.5	7.2	9.0	9.4	9.8	9.9	10.3	10.8	10.6	9.6	8.6	7.7	6.6	3.6	2.0	0.7	5.9	10.8	
25	-0.1	-0.9	-2.2	-3.4	-4.2	-5.0	-3.5	-0.4	1.6	3.8	6.4	8.0	9.7	10.6	10.8	11.2	11.2	10.8	10.4	9.7	8.5	7.1	5.5	3.8	4.6	11.2	
26	2.3	1.0	-0.1	-0.9	-1.1	-1.0	0.4	1.8	3.1	4.7	6.5	7.4	8.2	8.7	8.6	8.9	8.3	7.6	6.2	5.3	4.2	3.9	1.7	1.0	4.0	8.9	
27	1.1	0.9	0.8	0.8	0.6	0.5	0.8	0.4	-0.1	0.8	2.5	2.7	0.8	0.2	0.5	0.0	-0.4	-1.2	-1.3	-1.3	-1.8	-1.6	-1.9	-2.8	0.0	2.7	
28	-3.0	-2.9	-3.0	-3.1	-3.8	-5.3	-4.8	-3.4	-0.8	0.3	0.1	-0.3	0.5	2.6	2.7	3.1	2.2	-0.3	-2.0	-2.4	-2.5	-3.0	-3.0	-3.0	-1.1	3.1	
29	-3.3	-3.4	-3.4	-3.8	-4.2	-4.3	-3.6	-2.8	-1.6	0.1	1.6	2.0	2.4	2.4	3.2	1.9	0.5	-1.6	-1.1	-1.4	-2.7	-3.4	-4.1	-3.9	-1.4	3.2	
30	-4.3	-4.3	-4.3	-4.8	-5.1	-5.6	-5.7	-4.8	-3.4	-2.0	1.2	0.1	-0.9	-0.2	-0.3	-0.5	0.9	-1.5	-1.7	-1.6	-1.7	-1.9	-2.4	-2.7	-2.4	1.2	
NO.	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719	100%
MEAN	2.4	2.1	1.9	1.6	1.4	1.2	1.2	1.8	3.1	4.4	5.7	6.4	6.9	7.5	7.9	8.0	7.9	7.3	6.6	5.5	4.4	3.8	3.2	2.6			
MAX	11.7	11.5	11.3	11.5	12.3	12.1	10.7	10.9	11.0	11.7	13.0	14.2	14.7	14.9	15.6	15.7	15.8	14.3	13.3	12.9	12.7	12.6	12.3	12.1			



Number of Non-Zero Readings	719	Operational Time	719 HRS
Maximum 1-HR Average	15.8 C	Operational Uptime	100.0 %
Maximum 24-HR Average	11.0 C	Monthly Average	4.4 C
Monthly Calibration	0		
Standard Deviation	4.587		

Lagoon Wind Speed (km/hr) – April 2019

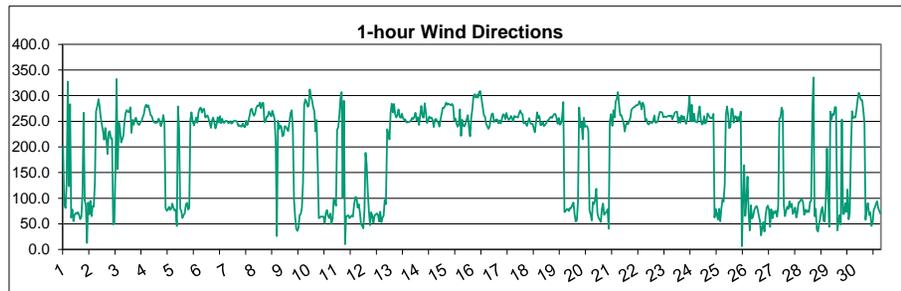
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	2.1	3.9	5.1	4.1	3.1	2.8	4.0	4.0	8.3	13.6	15.6	15.6	15.5	12.9	7.6	8.6	12.4	9.3	5.2	6.3	7.0	2.3	3.2	6.7	7.5	15.6
2	11.8	7.3	6.0	6.2	4.5	10.9	11.7	14.5	11.2	15.9	10.8	8.8	7.9	8.6	7.5	6.1	8.2	10.6	8.7	3.1	2.4	2.3	2.7	1.5	7.9	15.9
3	2.5	5.3	7.9	5.9	7.1	6.6	7.8	11.8	14.1	13.3	11.4	9.7	6.0	11.2	21.0	22.2	22.2	21.2	19.0	19.9	22.5	24.5	22.6	20.4	14.0	24.5
4	14.1	13.5	16.4	10.6	15.9	16.4	20.7	17.2	22.8	18.6	18.8	18.7	20.0	20.9	19.6	16.3	13.3	13.2	20.5	15.6	14.2	14.4	15.1	15.8	16.8	22.8
5	13.2	12.9	10.5	7.9	6.0	4.9	4.3	4.2	5.4	11.2	16.1	15.2	11.2	8.8	7.1	5.1	10.7	14.3	8.8	9.3	7.0	13.9	18.4	16.4	10.1	18.4
6	23.5	16.9	14.5	18.0	24.8	29.2	27.5	24.9	21.1	27.6	38.0	45.3	40.7	33.8	30.5	26.6	23.6	17.5	21.7	23.0	19.2	20.9	26.0	26.9	25.9	45.3
7	28.3	29.8	32.6	29.1	27.4	22.2	19.2	20.7	21.9	22.3	22.9	21.1	21.6	24.3	21.4	22.8	25.9	28.2	28.7	26.5	18.6	12.6	15.5	19.3	23.4	32.6
8	15.0	17.4	12.5	8.4	7.6	13.3	14.3	8.3	15.0	19.4	18.5	17.2	13.9	11.3	16.2	16.0	14.9	16.9	13.2	6.4	1.8	8.4	9.2	9.1	12.7	19.4
9	10.1	10.3	12.1	12.2	10.5	X	11.9	11.6	12.3	12.5	8.7	9.0	11.0	10.8	8.7	6.2	10.0	9.0	6.5	3.3	5.1	12.8	13.3	12.4	10.0	13.3
10	14.0	15.1	14.5	11.3	7.2	5.8	5.3	7.6	3.6	9.3	12.3	15.8	16.5	17.7	15.7	15.4	17.3	17.1	13.5	9.5	8.6	10.4	6.9	3.7	11.4	17.7
11	3.0	4.7	6.4	7.3	9.6	9.1	6.0	12.5	12.2	16.3	17.4	17.0	13.2	7.3	7.6	9.8	10.3	9.0	9.9	8.7	12.3	8.6	8.1	10.5	9.9	17.4
12	10.6	6.2	2.5	1.8	2.1	5.5	11.0	6.1	7.8	13.0	15.0	15.0	13.9	12.8	12.9	12.9	11.8	13.1	13.6	8.5	3.4	3.3	6.9	6.2	9.0	15.0
13	11.9	12.1	12.2	13.3	11.0	11.7	11.2	17.9	24.2	28.1	21.7	26.5	28.5	31.5	32.9	32.9	33.4	34.6	30.6	25.6	24.5	19.5	15.4	17.6	22.0	34.6
14	22.2	22.8	17.9	13.8	19.6	22.6	9.4	14.7	18.0	19.6	26.4	31.3	29.1	32.4	33.6	31.8	32.6	29.8	27.5	17.0	16.6	15.2	13.5	16.9	22.3	33.6
15	13.9	12.8	14.1	14.1	12.3	15.0	14.8	17.1	18.9	20.0	18.2	20.6	19.2	18.0	15.1	16.9	18.5	20.3	20.7	14.8	8.2	8.5	7.7	6.2	15.3	20.7
16	10.3	12.8	13.9	19.0	18.0	18.2	18.4	17.0	15.3	16.3	21.1	19.3	16.8	16.0	14.8	22.1	20.7	17.5	17.3	20.0	19.8	19.0	22.2	24.1	17.9	24.1
17	27.0	18.5	16.4	15.9	16.3	19.3	16.8	18.2	22.2	28.1	25.3	26.5	28.7	28.9	31.9	31.2	30.9	22.2	22.4	26.8	21.5	18.3	17.7	17.0	22.6	31.9
18	13.2	14.2	16.2	25.4	23.1	28.7	29.5	25.0	21.1	24.2	29.5	30.9	36.0	34.4	33.2	32.6	37.9	41.8	31.2	30.2	30.2	31.4	33.9	35.4	28.7	41.8
19	27.0	22.4	18.7	21.7	28.6	24.7	19.1	14.9	9.5	19.1	21.7	19.8	19.2	16.7	16.5	17.1	16.2	15.6	13.1	14.6	12.1	5.9	5.2	4.8	16.8	28.6
20	6.2	3.4	7.2	6.4	4.4	6.6	5.6	5.8	9.2	10.5	12.2	12.3	12.9	11.7	14.8	11.6	14.3	13.7	11.9	7.8	6.4	8.7	6.4	3.7	8.9	14.8
21	2.5	6.5	10.1	9.9	10.3	14.4	17.2	14.8	16.1	17.1	21.1	19.7	14.9	13.3	14.9	19.7	22.1	21.9	19.4	10.9	15.6	12.1	16.0	17.0	14.9	22.1
22	13.3	10.4	11.4	15.7	19.4	21.6	16.7	15.5	28.9	31.3	42.9	40.0	41.8	45.6	47.5	40.9	34.3	45.3	48.6	43.2	33.5	32.2	32.7	31.0	31.0	48.6
23	30.8	29.0	26.0	29.4	28.0	22.8	23.0	24.2	26.3	26.6	27.4	26.0	26.5	33.0	28.7	28.3	28.2	27.1	25.5	24.8	21.9	20.4	11.3	8.3	25.1	33.0
24	7.5	14.1	8.8	11.2	8.0	9.1	10.2	13.5	12.7	17.2	27.7	27.9	33.2	30.4	29.6	27.3	26.7	28.8	25.5	21.4	11.3	15.7	11.9	12.5	18.4	33.2
25	11.7	8.2	3.5	4.3	2.4	2.0	2.8	9.0	12.3	12.4	12.6	12.6	15.0	16.5	19.6	17.6	18.0	16.2	12.9	11.3	6.5	5.1	4.4	2.1	10.0	19.6
26	2.3	2.8	2.3	2.2	3.4	5.7	13.6	17.0	16.7	13.1	11.7	14.4	16.1	14.2	10.8	11.6	13.5	14.3	13.1	10.9	8.3	6.2	6.1	8.2	9.9	17.0
27	9.2	6.0	4.1	7.7	10.6	5.5	12.1	19.1	10.4	10.7	8.0	15.9	16.8	8.5	15.4	15.4	20.3	20.6	17.3	12.7	13.8	15.2	18.3	15.1	12.9	20.6
28	14.8	14.5	15.4	11.8	6.5	5.4	6.4	7.0	8.1	10.8	7.5	11.7	8.1	7.1	6.7	10.9	9.4	9.9	14.9	19.6	15.5	11.2	8.8	5.6	10.3	19.6
29	2.6	2.3	2.3	4.4	7.5	8.4	9.4	10.8	9.6	6.3	15.0	15.3	10.2	13.0	11.7	14.4	12.8	10.3	4.1	2.7	3.3	3.3	5.1	10.1	8.1	15.3
30	10.3	10.9	12.1	17.0	17.5	16.1	19.5	15.3	9.3	8.9	9.4	20.0	11.5	12.7	10.5	7.5	10.3	17.4	15.1	10.7	11.4	11.1	11.9	9.5	12.7	20.0
NO.	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719	100%
MEAN	12.6	12.2	11.8	12.2	12.4	13.3	13.3	14.0	14.8	17.1	18.8	20.0	19.2	18.8	18.8	18.6	19.4	19.6	18.0	15.5	13.4	13.1	13.2	13.1		
MAX	30.8	29.8	32.6	29.4	28.6	29.2	29.5	25.0	28.9	31.3	42.9	45.3	41.8	45.6	47.5	40.9	37.9	45.3	48.6	43.2	33.5	32.2	33.9	35.4		



Number of Non-Zero Readings	719
Maximum 1-HR Average	48.6 KM/HR
Maximum 24-HR Average	31.0 KM/HR
Operational Time	719 HRS
Operational Uptime	99.9 %
Monthly Calibration	0
Standard Deviation	8.672
Monthly Average	15.6 KM/HR

Lagoon Wind Direction (°) – April 2019

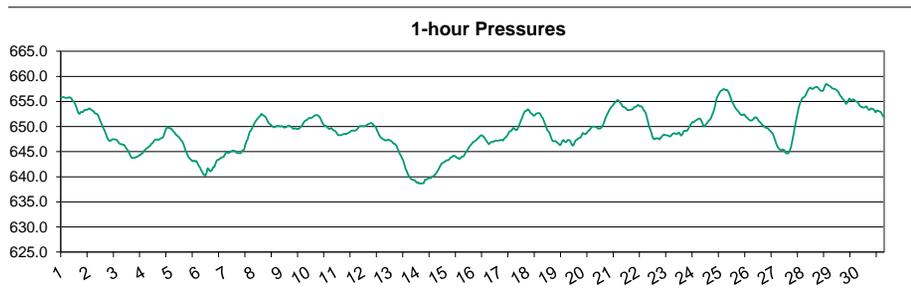
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	200.8	89.0	81.0	131.3	327.0	123.2	283.3	62.2	77.7	55.1	67.2	71.6	69.6	72.8	67.3	59.2	63.8	107.5	266.6	95.9	85.8	13.0	91.6	68.7	72.5	327.0	
2	95.2	65.2	84.7	83.5	130.3	269.0	280.2	293.3	278.5	257.5	243.5	230.3	214.1	237.0	215.4	186.6	228.1	230.5	216.4	216.7	48.7	50.3	157.4	332.4	239.0	332.4	
3	156.6	248.6	236.7	208.9	214.1	222.3	248.9	266.0	271.9	268.3	267.9	277.1	227.3	252.5	243.2	253.6	256.9	248.6	243.8	243.2	249.2	249.8	258.3	264.0	251.3	277.1	
4	277.2	282.6	277.3	281.4	272.1	261.7	260.0	252.3	248.1	247.0	247.1	247.8	255.0	250.6	240.8	247.6	262.3	248.5	81.3	75.6	77.3	82.9	77.5	79.5	256.3	282.6	
5	89.8	80.9	75.9	77.8	46.0	278.9	234.8	80.0	74.9	61.3	67.2	70.2	87.4	91.2	77.8	80.8	252.9	267.6	250.0	241.9	249.2	257.5	247.4	267.6	77.0	278.9	
6	274.5	277.0	267.0	273.3	273.9	257.3	260.0	261.1	254.2	246.4	236.9	252.2	257.6	248.2	236.1	243.7	257.7	247.6	260.0	246.3	254.8	247.0	247.4	250.6	254.1	277.0	
7	251.0	246.8	246.8	250.3	245.6	247.3	250.6	250.9	250.9	248.4	241.3	242.3	240.3	239.7	245.9	240.0	238.5	251.3	243.0	250.4	260.7	272.9	274.6	265.4	248.6	274.6	
8	260.7	265.6	276.6	280.7	280.0	286.4	275.5	285.3	285.9	248.4	249.4	259.0	259.7	268.8	263.9	259.5	270.6	263.1	254.2	210.8	26.3	251.1	235.4	242.0	263.3	286.4	
9	239.3	220.6	223.4	240.4	239.4	X	231.0	245.4	266.3	271.6	234.1	98.3	63.4	40.4	36.3	42.6	67.3	69.6	81.0	131.6	281.6	292.5	288.3	278.5	262.6	292.5	
10	279.8	312.1	297.8	290.9	277.4	269.8	230.6	252.6	164.0	61.1	62.4	64.4	64.3	64.3	50.8	70.7	77.1	65.4	61.6	70.2	49.6	60.1	97.7	93.1	46.9	312.1	
11	85.2	233.7	238.2	262.0	294.9	306.7	101.7	290.0	10.5	64.9	65.6	67.0	61.1	64.0	66.3	64.0	86.5	102.4	101.0	82.0	88.3	71.9	49.1	46.5	59.8	306.7	
12	41.2	75.0	188.4	165.6	111.2	73.7	47.3	72.6	65.4	51.9	66.7	68.1	70.3	68.0	54.2	73.9	53.1	61.8	65.9	96.7	88.2	234.5	224.6	214.6	68.1	234.5	
13	266.7	284.1	267.1	283.7	263.8	257.3	262.1	273.2	258.9	256.9	264.8	256.2	253.0	253.9	247.8	248.1	249.1	249.0	251.7	256.4	254.4	259.3	266.8	252.3	257.1	284.1	
14	257.7	242.7	262.5	279.7	259.5	256.8	285.4	268.1	246.9	250.7	259.0	255.8	257.3	252.5	238.8	253.1	254.7	250.4	247.8	239.9	253.5	264.5	276.5	275.8	255.5	285.4	
15	280.2	286.4	282.2	284.5	283.2	281.3	283.9	279.8	251.2	255.8	245.7	239.1	243.2	273.5	221.7	253.0	241.1	240.2	245.6	254.3	261.8	238.3	220.6	255.4	257.9	286.4	
16	273.9	298.6	302.8	296.1	301.5	296.4	307.3	308.9	296.0	280.7	262.4	259.3	245.1	240.8	235.4	239.1	253.3	263.8	265.3	248.6	251.6	254.0	252.9	246.1	268.0	308.9	
17	251.6	246.0	255.3	263.6	262.7	254.1	266.3	257.2	253.1	254.8	260.6	256.2	249.5	260.3	258.7	258.2	257.6	264.8	271.2	265.6	263.4	246.1	249.0	245.2	257.3	271.2	
18	240.9	249.1	255.9	247.4	244.8	245.0	236.4	228.8	247.9	267.4	256.1	260.3	242.3	243.4	248.8	240.7	242.8	245.9	251.0	252.9	256.4	258.8	256.3	260.9	249.2	267.4	
19	264.2	263.8	256.5	244.9	256.6	243.1	245.8	260.0	287.3	72.9	74.9	78.6	79.2	75.3	81.2	81.1	87.7	91.4	68.7	54.4	57.5	94.0	276.8	238.3	81.1	287.3	
20	248.2	214.9	257.1	239.3	240.6	240.4	231.6	76.2	68.5	56.8	92.3	88.3	98.1	118.3	71.1	61.9	58.2	53.7	79.6	89.9	67.5	71.2	73.4	78.5	81.0	257.1	
21	40.8	249.9	264.0	241.1	271.6	257.2	288.2	294.2	307.0	281.9	261.7	262.3	254.7	247.6	230.0	242.4	247.7	244.3	250.7	256.8	272.7	275.0	277.8	278.3	263.4	307.0	
22	281.4	281.6	282.0	289.2	284.8	273.0	286.6	279.4	252.0	254.5	245.7	243.7	247.0	249.5	246.3	250.2	261.5	247.3	247.6	249.3	260.2	268.5	268.1	267.2	257.4	289.2	
23	258.0	259.7	258.6	258.5	260.0	261.0	259.4	261.2	253.9	260.1	266.4	268.2	268.7	246.9	257.7	247.3	261.6	253.2	259.5	250.4	245.2	256.1	271.2	298.5	258.5	298.5	
24	249.8	282.1	249.9	265.0	249.5	249.1	247.8	267.1	279.0	252.4	243.6	245.6	260.2	245.7	249.1	265.5	261.1	257.0	255.9	256.1	264.5	62.4	79.2	69.1	256.8	282.1	
25	58.5	79.4	54.8	78.9	97.4	93.0	127.3	261.6	279.2	263.3	236.8	238.9	274.7	273.5	247.3	259.9	259.2	252.3	258.5	249.3	269.0	6.4	89.2	164.5	259.9	279.2	
26	65.3	97.3	142.2	70.6	37.4	86.1	60.6	64.7	77.1	82.2	84.9	78.7	65.7	56.0	27.7	42.0	52.9	35.2	65.5	81.4	85.7	77.7	44.4	78.7	65.6	142.2	
27	61.2	74.3	70.7	75.1	64.0	85.0	255.7	256.7	276.8	269.9	86.3	65.2	75.3	83.5	79.2	94.2	82.8	89.5	69.6	74.4	81.6	62.4	71.9	91.7	75.9	276.8	
28	92.2	97.3	97.5	92.2	67.8	77.7	72.5	76.5	73.0	92.7	94.9	268.4	335.4	65.0	79.8	39.1	35.0	49.6	61.0	77.5	82.7	56.3	54.4	98.8	72.4	335.4	
29	196.8	106.5	44.3	268.9	253.5	264.3	262.4	277.8	277.1	37.3	54.5	67.1	48.6	253.6	69.3	70.0	90.3	73.6	116.9	58.8	71.8	192.3	269.5	257.1	36.2	277.8	
30	257.4	258.0	273.6	292.6	305.4	297.2	291.4	291.1	270.5	247.1	57.8	78.8	90.8	67.4	72.7	46.1	51.3	77.1	82.1	89.0	94.1	80.7	75.0	69.7	24.6	305.4	
NO.	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719	100%
MEAN	196.5	209.0	212.4	220.6	223.9	228.1	232.5	229.8	216.8	194.0	179.9	182.0	182.0	180.1	165.3	167.1	178.8	180.1	182.4	175.5	171.8	170.3	187.4	197.6			
MAX	281.4	312.1	302.8	296.1	327.0	306.7	307.3	308.9	307.0	281.9	267.9	277.1	335.4	273.5	263.9	265.5	270.6	267.6	271.2	265.6	281.6	292.5	288.3	332.4			



Number of Non-Zero Readings	719
Maximum 1-HR Average	335 degrees
Maximum 24-HR Average	268 degrees
Operational Time	719 HRS
Monthly Calibration	0
Operational Uptime	99.9 %
Standard Deviation	89.72
Monthly Average	194.3 degrees

Lagoon Pressure (mmHg) – April 2019

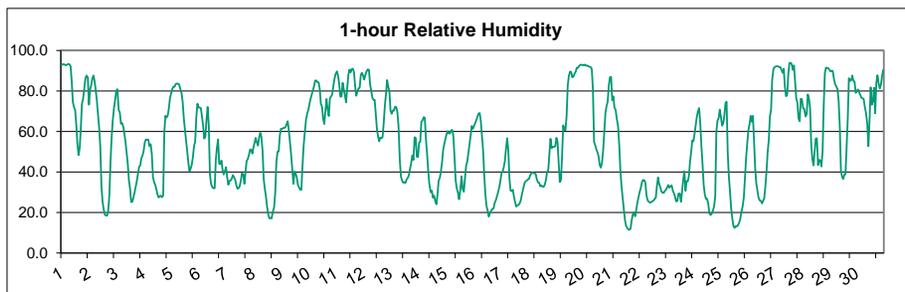
Day	HOUR																								MEAN	MAX	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	655.8	655.8	655.8	655.8	655.7	655.7	655.8	655.8	655.8	655.5	655.1	655.0	654.6	654.0	653.3	652.7	652.5	652.9	652.9	652.9	653.2	653.3	653.3	653.4	654.4	655.8	
2	653.6	653.6	653.4	653.2	653.2	652.8	652.6	652.5	652.3	651.7	651.2	650.6	650.0	649.6	649.1	648.5	647.9	647.4	647.2	647.1	647.4	647.5	647.5	647.4	647.4	653.6	
3	647.4	647.2	646.9	646.6	646.5	646.5	646.4	646.4	646.0	645.6	645.3	644.9	644.4	643.9	643.7	643.8	643.8	643.8	644.0	644.1	644.3	644.3	644.5	644.6	647.4	653.6	
4	645.0	645.4	645.5	645.7	645.9	646.1	646.2	646.6	646.7	647.1	647.4	647.4	647.4	647.3	647.5	647.7	647.7	647.9	648.5	649.2	649.7	649.9	649.7	649.7	649.7	649.9	653.6
5	649.6	649.3	649.1	648.8	648.5	648.3	648.0	647.9	647.5	647.2	647.0	646.5	645.8	645.2	644.6	644.0	643.7	643.5	643.3	643.1	643.2	643.1	643.1	642.7	649.9	653.6	
6	642.2	641.9	641.5	641.0	640.6	640.3	640.1	640.7	641.7	641.5	641.1	641.1	641.5	641.9	642.0	642.7	643.2	643.4	643.4	643.7	643.8	643.9	644.0	644.4	649.9	653.6	
7	644.8	644.9	644.8	644.8	645.1	645.1	645.2	645.1	645.1	644.8	644.7	644.7	644.7	644.7	645.1	645.3	645.5	646.4	647.1	647.5	648.3	649.0	649.3	649.8	649.8	649.8	653.6
8	650.3	650.7	651.1	651.4	651.7	652.0	652.1	652.6	652.3	652.2	652.0	651.8	651.3	650.8	650.6	650.4	650.2	650.0	649.8	649.9	650.1	650.1	650.1	650.0	651.0	652.6	
9	650.1	650.1	650.0	649.8	649.9	X	650.1	650.2	650.1	650.0	649.7	649.6	649.7	649.6	649.5	649.5	649.6	649.9	650.0	650.4	650.8	651.1	651.3	651.3	651.0	652.6	
10	651.6	651.7	651.7	651.8	651.9	652.1	652.3	652.3	652.3	652.1	651.8	651.4	650.9	650.5	650.2	650.1	650.1	649.7	649.6	649.6	649.7	649.5	649.2	649.2	649.2	652.6	
11	649.0	648.7	648.3	648.3	648.3	648.3	648.4	648.5	648.6	648.5	648.6	648.8	648.8	649.1	649.2	649.2	649.2	649.2	649.3	649.6	649.9	650.1	650.1	650.1	649.0	652.6	
12	650.1	650.1	650.1	650.3	650.5	650.5	650.7	650.7	650.6	650.3	650.2	649.9	649.2	648.8	648.3	647.9	647.7	647.5	647.4	647.2	647.3	647.3	647.4	647.3	649.0	652.6	
13	647.2	647.0	646.7	646.5	646.5	646.2	645.7	645.2	644.6	644.2	643.7	643.3	642.5	641.7	641.1	640.5	640.1	639.7	639.5	639.4	639.4	639.0	638.8	638.8	642.9	652.6	
14	638.9	638.6	638.7	638.7	638.7	638.8	639.4	639.4	639.5	639.8	639.7	639.7	640.0	640.1	640.1	640.5	640.8	641.2	641.6	642.1	642.5	642.7	642.8	642.9	640.3	652.6	
15	643.1	643.3	643.3	643.4	643.7	643.9	644.0	644.2	644.1	644.0	643.8	643.8	643.5	643.7	644.0	644.0	644.1	644.6	645.0	645.2	645.6	646.1	646.3	646.6	644.3	652.6	
16	646.9	647.1	647.2	647.4	647.6	647.8	648.1	648.3	648.2	648.0	647.7	647.4	647.0	646.8	646.4	646.7	646.9	647.0	647.0	647.2	647.2	647.2	647.2	647.2	647.3	652.6	
17	647.3	647.3	647.2	647.5	647.8	647.9	648.2	648.8	649.1	649.1	649.3	649.8	649.7	649.4	649.3	649.5	650.1	650.7	651.2	651.8	652.4	652.9	653.1	653.2	649.7	652.6	
18	653.4	653.3	652.8	652.6	652.4	652.1	652.3	652.5	652.6	652.7	652.7	652.4	651.9	651.7	651.1	650.5	649.9	649.2	649.1	648.7	648.0	647.4	647.1	647.1	651.0	652.6	
19	647.1	647.0	646.7	646.6	646.3	646.5	647.1	647.3	647.0	646.9	647.1	647.4	647.3	647.1	646.6	646.2	646.4	647.0	647.3	647.4	647.7	647.8	647.8	648.3	647.1	652.6	
20	648.7	648.6	648.5	648.6	648.9	649.2	649.3	649.7	649.9	650.0	650.0	649.9	649.8	649.6	649.6	649.6	649.8	650.1	650.6	651.2	651.8	652.3	652.8	653.2	650.1	652.6	
21	653.7	653.9	654.2	654.4	654.8	655.0	655.2	655.3	654.9	654.7	654.4	654.0	653.9	653.8	653.5	653.3	653.3	653.3	653.3	653.4	653.6	653.8	653.9	654.0	654.1	653.2	
22	654.3	654.2	654.0	654.0	653.9	653.3	653.1	652.7	651.9	651.0	649.9	649.5	648.7	647.9	647.5	647.5	647.7	647.7	647.7	647.7	647.4	647.8	648.0	648.3	648.4	653.2	
23	648.3	648.3	648.2	648.1	648.0	648.1	648.5	648.6	648.7	648.6	648.5	648.6	648.8	648.5	648.2	648.4	649.0	649.2	649.1	649.2	649.5	650.0	650.4	650.7	648.8	653.2	
24	651.0	650.9	651.1	651.3	651.4	651.5	651.6	651.4	651.0	650.4	650.0	650.2	650.5	650.8	651.1	651.4	651.7	652.3	652.8	653.5	654.5	655.6	656.1	656.5	652.0	653.2	
25	657.0	657.2	657.3	657.5	657.4	657.2	657.3	657.0	656.5	655.9	655.2	654.7	654.3	653.9	653.5	653.3	653.0	652.7	652.4	652.3	652.4	652.5	652.2	651.9	652.0	653.2	
26	651.7	651.4	651.3	651.2	651.3	651.5	651.8	651.8	651.8	651.4	651.0	650.9	650.6	650.3	650.2	649.9	649.7	649.7	649.6	649.3	649.1	648.8	648.7	648.0	650.5	653.2	
27	647.4	646.7	646.1	645.7	645.5	645.4	645.4	645.4	645.4	644.8	644.7	644.6	644.9	645.3	646.0	647.1	648.2	649.6	650.8	651.9	653.0	654.0	654.7	655.2	647.8	653.2	
28	655.7	655.8	656.0	656.3	656.9	657.3	657.6	657.7	657.6	657.5	657.7	657.8	657.9	657.9	657.6	657.3	657.2	657.1	657.1	657.7	658.3	658.5	658.3	658.2	658.2	653.2	
29	658.1	657.8	657.6	657.5	657.5	657.4	657.3	657.0	656.7	656.2	656.0	655.6	655.3	655.0	654.5	654.8	655.2	655.6	655.3	655.2	655.4	655.4	655.1	655.0	656.1	653.2	
30	654.9	654.6	654.2	654.0	653.9	653.8	653.8	653.8	654.0	653.7	653.3	653.4	653.6	653.5	653.5	653.2	652.8	653.2	653.1	653.1	653.0	652.7	652.3	651.9	653.5	653.2	
NO.	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719	100%	
MEAN	649.8	649.7	649.6	649.6	649.7	649.7	649.8	649.9	649.7	649.5	649.3	649.1	649.0	648.7	648.6	648.5	648.6	648.7	648.8	649.0	649.3	649.5	649.5	649.6			
MAX	658.1	657.8	657.6	657.5	657.5	657.4	657.6	657.7	657.6	657.5	657.7	657.8	657.9	657.9	657.6	657.3	657.2	657.1	657.1	657.7	658.3	658.5	658.3	658.2			



Number of Non-Zero Readings	719
Maximum 1-HR Average	659 MMHg
Maximum 24-HR Average	657 MMHg
Operational Time	719 HRS
Monthly Calibration	0
Operational Uptime	99.9 %
Standard Deviation	4.325
Monthly Average	649.3 MMHg

Lagoon Relative Humidity (%) – April 2019

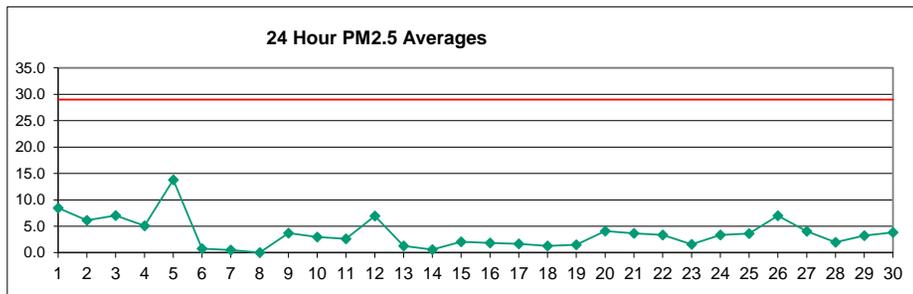
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	92.7	93.2	93.3	93.0	92.7	93.0	93.4	93.1	92.2	84.8	74.7	72.0	70.6	63.5	53.9	48.3	51.7	61.2	73.5	76.1	80.7	86.0	87.6	86.7	79.5	93.4
2	73.2	80.7	82.8	86.3	87.7	84.6	80.3	74.9	68.3	61.7	52.3	33.0	25.3	21.4	18.9	18.5	18.4	21.0	28.9	45.2	57.3	65.6	71.4	75.4	55.5	87.7
3	79.7	80.9	70.5	69.4	63.8	64.1	62.5	59.1	54.8	49.5	44.1	36.0	31.9	25.2	25.2	27.4	29.8	32.8	35.5	39.2	42.6	43.2	46.9	48.1	48.4	80.9
4	50.5	54.8	56.1	55.9	56.1	52.7	53.8	48.9	37.5	34.9	33.7	31.5	28.9	27.4	28.1	28.4	27.5	28.5	59.7	67.8	66.9	67.9	71.2	76.6	47.7	76.6
5	78.7	80.9	82.1	82.0	83.4	83.7	83.6	83.3	81.4	78.9	74.5	66.5	60.9	55.5	50.2	44.6	40.5	41.6	43.6	47.3	52.9	54.8	67.0	73.7	66.3	83.7
6	71.7	71.8	71.6	67.4	63.0	56.5	57.5	66.0	72.1	62.8	39.0	34.1	32.5	31.9	32.0	45.9	52.1	56.0	44.0	43.9	45.6	40.8	38.8	40.4	51.6	72.1
7	42.4	37.6	33.7	35.6	35.8	36.6	38.5	37.5	36.3	33.7	31.8	31.9	32.9	35.4	39.4	38.8	34.2	40.2	45.5	46.4	48.4	51.1	51.0	49.1	39.3	51.1
8	52.2	54.6	56.8	54.5	53.0	57.2	59.3	57.1	50.7	36.7	31.7	28.0	22.8	19.1	17.1	17.3	17.1	20.1	22.7	29.9	44.9	50.0	50.1	57.9	40.0	59.3
9	61.3	61.3	61.7	61.8	62.1	X	65.1	60.3	54.6	48.5	41.2	34.2	40.2	39.3	37.1	33.5	32.4	31.3	31.3	42.8	52.9	59.3	66.2	69.0	49.9	69.0
10	70.8	73.7	76.3	78.3	80.3	82.3	85.2	85.1	84.4	84.3	81.0	73.7	72.2	66.4	63.7	70.2	76.0	70.8	67.7	76.4	77.3	78.3	82.5	85.9	76.8	85.9
11	88.5	89.7	87.4	83.1	77.2	77.3	84.1	80.7	77.9	74.4	81.2	87.9	90.5	89.3	90.7	91.0	89.4	82.4	77.6	79.6	81.2	81.6	87.9	89.0	84.1	91.0
12	87.6	85.7	87.8	89.7	90.6	90.4	83.0	80.2	76.6	75.6	75.6	68.6	61.2	57.6	55.2	57.0	56.7	57.4	64.2	72.7	78.6	85.4	82.0	79.9	75.0	90.6
13	70.3	68.8	70.3	70.4	72.2	72.0	69.7	62.9	45.6	37.7	35.8	34.7	34.9	34.6	36.4	37.0	38.5	41.6	44.4	48.2	45.9	57.1	56.7	47.5	51.4	72.2
14	47.4	54.5	55.0	64.8	65.5	67.1	66.8	56.4	49.2	40.8	34.1	30.0	30.8	27.4	28.3	25.6	24.0	28.9	35.7	37.0	40.2	44.6	51.0	53.8	44.1	67.1
15	56.4	58.6	60.2	59.0	59.0	60.6	60.8	57.6	47.4	35.9	31.9	29.9	26.6	30.5	37.8	31.5	30.2	36.8	43.0	45.1	49.3	53.6	57.9	62.7	46.8	62.7
16	61.3	62.7	64.1	65.5	67.3	68.9	69.0	65.0	57.8	50.7	38.7	28.8	23.1	21.0	17.9	19.7	20.8	21.6	22.0	24.7	26.1	28.0	30.0	32.4	41.1	69.0
17	35.6	39.3	40.2	42.3	45.6	51.6	56.7	50.8	36.9	30.8	30.6	31.3	27.7	25.2	22.9	23.6	23.8	24.5	26.0	29.0	31.3	34.4	35.4	35.7	34.6	56.7
18	36.2	36.5	38.2	39.2	39.8	39.6	39.4	38.8	36.3	34.8	34.8	32.9	33.3	32.8	32.7	33.8	36.2	39.8	40.9	48.7	56.4	51.8	52.3	52.3	39.9	56.4
19	52.7	56.8	54.9	44.7	35.1	36.0	47.9	63.0	60.9	60.6	67.8	82.7	87.5	89.6	89.5	86.8	87.1	88.6	89.6	91.4	91.5	92.4	92.8	93.0	72.6	93.0
20	92.8	92.7	93.1	92.4	92.5	92.2	92.0	91.8	90.8	80.7	54.8	53.2	51.3	49.8	47.7	43.4	42.2	44.6	50.8	59.8	68.9	72.6	74.7	82.7	71.1	93.1
21	86.7	87.0	75.5	77.3	71.7	70.7	66.5	62.4	53.1	40.7	33.0	27.3	21.8	16.5	13.4	12.5	11.6	11.5	12.1	16.3	19.2	20.1	18.1	21.5	39.4	87.0
22	24.8	27.7	30.3	32.2	34.9	36.0	35.9	34.8	28.6	26.0	25.2	24.8	25.2	25.5	25.9	26.8	27.2	33.1	37.4	34.1	32.5	30.3	29.8	29.7	29.9	37.4
23	30.7	31.3	32.3	33.6	32.3	33.0	33.3	30.8	29.6	27.6	25.5	25.7	29.3	29.3	25.2	30.5	36.4	40.4	30.7	35.5	35.4	38.0	45.2	50.0	33.0	50.0
24	55.6	55.2	59.0	63.3	67.3	70.0	71.6	64.0	52.8	43.9	33.7	29.0	26.8	26.7	24.5	19.7	18.7	19.5	21.1	23.0	27.8	60.1	65.4	66.6	44.4	71.6
25	70.8	67.3	63.0	64.0	67.6	73.9	74.7	49.8	37.8	30.6	22.3	17.2	13.4	12.3	13.3	13.2	13.6	15.0	16.6	20.2	23.2	27.6	36.9	47.0	37.1	74.7
26	54.1	60.6	63.4	67.8	64.9	67.7	55.4	42.1	34.3	30.8	27.3	26.0	25.7	24.5	25.8	27.1	32.9	40.3	49.8	55.6	67.6	70.6	85.5	91.2	49.6	91.2
27	91.8	92.1	92.3	92.1	91.7	91.8	90.3	89.0	91.0	82.1	77.5	78.2	88.2	93.8	93.9	93.3	90.5	92.6	84.6	76.3	74.3	66.5	65.1	76.2	85.6	93.9
28	76.0	71.5	71.3	67.5	68.5	78.3	76.3	71.6	53.8	46.5	43.2	49.8	56.5	56.6	43.4	45.9	45.7	42.7	50.0	72.5	88.7	91.6	91.4	91.2	64.6	91.6
29	90.6	89.7	90.0	89.9	86.0	83.5	82.1	80.9	74.7	62.1	40.5	37.7	36.5	38.7	38.9	52.5	66.4	86.3	85.1	85.2	87.6	85.0	84.7	79.1	72.2	90.6
30	80.0	80.8	79.3	78.2	76.7	76.4	76.1	72.3	69.4	63.9	52.7	65.3	81.8	73.2	75.0	81.5	69.0	84.2	87.7	83.8	81.2	83.0	87.1	90.4	77.0	90.4
NO.	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	719	100%
MEAN	65.4	66.6	66.4	66.7	66.1	67.2	67.0	63.7	57.9	51.7	45.7	43.4	43.0	41.3	40.1	40.8	41.4	44.5	47.4	51.8	55.9	59.0	62.1	64.5		
MAX	92.8	93.2	93.3	93.0	92.7	93.0	93.4	93.1	92.2	84.8	81.2	87.9	90.5	93.8	93.9	93.3	90.5	92.6	89.6	91.4	91.5	92.4	92.8	93.0		



Number of Non-Zero Readings	719	Operational Time	719 HRS
Maximum 1-HR Average	93.9 %	Operational Uptime	99.9 %
Maximum 24-HR Average	85.6 %	Monthly Average	55.0 %
Monthly Calibration	0		
Standard Deviation	22.71		

West PM_{2.5} (µg/m³) – April 2019

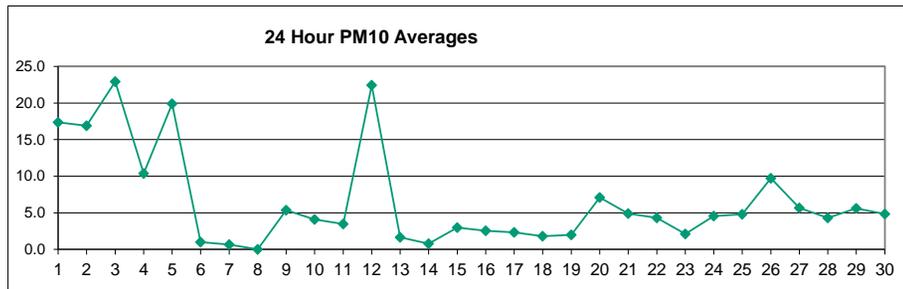
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	7.2	20.5	7.7	5.7	4.7	7.1	8.1	10.3	29.4	23.3	15.9	10.3	7.6	9.4	7.9	4.7	5.6	3.1	3.5	2.1	2.0	2.4	2.3	2.7	8.5	29.4
2	4.2	2.6	2.6	2.9	5.3	6.7	9.0	10.5	12.7	10.8	8.6	13.9	6.1	5.7	7.2	4.1	4.3	2.4	2.2	2.8	3.3	4.7	4.9	9.4	6.1	13.9
3	8.4	8.2	6.7	5.0	3.9	4.8	8.6	15.2	26.5	10.4	10.9	10.4	8.1	8.2	6.0	4.4	3.9	3.9	3.4	2.7	2.1	2.3	3.0	2.1	7.0	26.5
4	1.9	1.8	1.8	1.3	1.5	1.8	1.9	4.3	2.1	4.2	2.7	2.2	3.9	2.7	2.5	1.6	2.6	1.0	11.7	17.8	11.4	10.0	10.4	18.8	5.1	18.8
5	22.4	22.1	22.7	23.7	22.1	20.7	20.7	23.5	26.0	25.5	22.5	17.7	20.3	16.1	13.0	6.7	1.4	0.7	0.6	0.4	0.3	1.3	0.4	0.2	13.8	26.0
6	0.4	0.7	0.5	0.6	0.8	1.0	1.1	1.0	0.4	0.6	1.6	1.2	0.9	0.9	1.3	1.0	0.7	0.7	0.6	0.7	0.4	0.5	0.3	0.2	0.7	1.6
7	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.5	0.6	0.8	0.5	0.6	0.7	0.7	0.5	0.8	0.7	0.6	0.7	0.4	0.5	0.8	0.7	0.5	0.5	0.8
8	0.8	1.2	0.6	0.4	0.4	0.7	2.0	4.2	4.0	2.3	1.7	2.2	2.0	1.5	1.6	1.1	X	X	X	X	X	X	X	X	-	-
9	X	X	2.2	2.7	2.1	2.7	5.4	7.1	8.5	10.5	6.8	6.1	4.3	2.7	2.9	2.2	3.4	2.1	1.4	1.3	2.3	1.7	1.3	1.2	3.7	10.5
10	1.2	1.2	1.3	1.8	1.8	2.3	3.3	4.6	7.1	6.0	7.6	5.9	5.0	4.3	3.2	1.8	2.3	1.9	2.1	1.7	0.9	0.9	1.3	1.4	3.0	7.6
11	1.5	2.4	4.2	2.3	1.6	1.6	1.8	2.5	3.5	6.1	3.8	1.6	1.6	2.2	3.0	3.7	3.9	4.0	2.7	2.1	1.7	1.4	1.7	2.1	2.6	6.1
12	1.6	2.0	3.1	1.8	1.2	1.0	1.3	2.5	25.7	25.2	17.0	11.4	9.7	16.0	8.1	3.9	4.5	7.1	3.3	3.8	4.7	6.0	3.8	1.7	6.9	25.7
13	1.1	1.2	1.2	1.2	1.4	1.4	1.8	2.3	1.7	1.8	1.5	1.6	1.8	2.1	1.4	1.2	1.4	0.9	0.5	0.3	0.5	1.0	0.7	0.4	1.3	2.3
14	0.5	0.3	0.5	0.4	0.4	0.7	0.4	0.7	0.6	0.4	1.0	0.7	1.0	0.6	1.1	0.7	0.7	0.6	0.4	0.2	0.2	0.6	0.6	0.6	0.6	1.1
15	0.6	0.6	0.6	0.5	0.5	1.4	5.8	8.8	5.3	2.8	3.2	2.3	3.0	3.0	3.5	1.1	1.5	1.2	0.7	0.8	0.4	0.5	0.6	0.8	2.1	8.8
16	1.2	1.0	1.0	1.0	0.9	1.4	3.0	4.2	3.8	3.6	2.9	3.2	2.9	3.1	2.0	1.9	1.2	0.9	1.0	0.8	0.6	0.8	0.7	0.7	1.8	4.2
17	0.8	0.7	0.7	0.9	0.8	2.3	3.0	4.1	3.1	2.3	1.7	2.7	3.2	2.0	2.4	1.7	1.5	0.9	0.7	0.8	0.9	0.9	0.8	1.3	1.7	4.1
18	0.9	0.7	0.8	0.7	0.7	1.0	1.9	1.5	2.1	2.5	2.0	1.9	2.3	2.7	2.4	1.8	1.7	0.8	0.5	0.5	0.4	0.3	0.3	0.3	1.3	2.7
19	0.5	0.3	0.3	0.6	1.2	1.0	0.4	0.6	0.8	3.6	3.9	1.9	1.5	1.4	1.2	1.5	3.3	4.5	0.8	0.3	0.2	0.6	1.6	4.3	1.5	4.5
20	8.1	8.0	5.0	4.6	4.2	5.2	4.4	7.1	7.8	2.9	3.2	2.3	2.7	8.0	2.8	2.2	2.7	2.5	2.4	2.4	2.1	2.3	2.3	2.4	4.1	8.1
21	2.5	2.9	3.7	4.1	4.6	4.7	5.0	5.1	4.6	4.1	3.8	3.2	3.3	3.4	3.8	3.1	3.0	2.8	3.0	2.5	3.1	3.4	3.7	4.3	3.7	5.1
22	4.5	4.5	4.5	4.5	4.7	5.0	5.4	6.3	3.9	3.9	4.2	3.4	3.6	3.2	3.2	2.2	1.8	1.7	1.4	1.7	2.1	1.4	1.6	1.7	3.4	6.3
23	2.0	2.4	2.1	1.7	1.2	1.1	1.3	2.3	2.8	2.0	1.8	1.9	1.9	2.0	2.1	1.4	0.7	1.1	0.6	0.8	1.0	1.2	1.1	1.3	1.6	2.8
24	1.3	1.3	1.3	1.3	1.4	1.6	3.5	5.9	5.6	4.5	3.3	3.2	4.3	3.9	4.1	3.8	3.9	3.6	3.9	3.9	3.7	4.6	3.9	2.8	3.4	5.9
25	2.1	1.9	1.9	2.0	2.0	2.2	4.4	4.5	5.1	4.6	4.5	4.6	4.2	Y	4.3	3.7	3.7	4.4	3.5	3.2	3.3	3.8	4.1	5.2	3.6	5.2
26	6.4	5.4	4.6	4.4	4.7	5.0	6.6	7.4	8.1	9.3	8.6	8.1	7.8	7.8	5.9	6.6	7.0	6.5	6.6	7.1	7.5	7.8	8.8	9.3	7.0	9.3
27	10.3	5.3	7.4	9.3	8.8	7.6	6.7	1.9	1.6	1.6	2.5	3.5	2.2	1.6	2.0	1.9	1.5	1.3	2.3	3.3	3.2	6.6	2.3	2.7	4.1	10.3
28	2.9	2.1	2.5	2.3	1.8	1.3	1.4	2.2	2.9	1.9	2.0	2.2	3.0	2.7	2.3	1.4	1.5	1.4	1.2	1.7	2.6	1.6	1.2	1.2	2.0	3.0
29	2.1	2.5	2.4	2.0	2.0	2.3	4.7	4.8	6.1	4.9	3.6	3.7	3.4	3.6	3.7	3.5	3.7	3.0	2.5	2.4	2.4	1.9	2.9	3.0	3.2	6.1
30	2.9	3.2	3.6	3.2	3.4	3.7	4.5	4.5	5.1	4.4	4.3	3.7	4.9	4.1	4.1	3.2	2.6	3.4	3.4	3.2	4.0	4.7	4.0	4.1	3.8	5.1
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	29	30	30	29	29	29	29	29	29	29	29	709	98%
MEAN	3.5	3.7	3.3	3.1	3.0	3.3	4.3	5.3	7.2	6.2	5.2	4.6	4.2	4.3	3.7	2.6	2.6	2.4	2.3	2.5	2.3	2.6	2.5	3.0		
MAX	22.4	22.1	22.7	23.7	22.1	20.7	20.7	23.5	29.4	25.5	22.5	17.7	20.3	16.1	13.0	6.7	7.0	7.1	11.7	17.8	11.4	10.0	10.4	18.8		



Number of 24HR Exceedences	0	Proposed Guideline
Number of Non-Zero Readings	709	
Maximum 1-HR Average	29.4 UG/M3	
Maximum 24-HR Average	13.8 UG/M3	
IZS Calibration Time		Operational Time
Down Time	0	Operational Uptime
Standard Deviation	4.282	Monthly Average
		709 HRS
		98.5 %
		3.7 UG/M3

West PM₁₀ (µg/m³) – April 2019

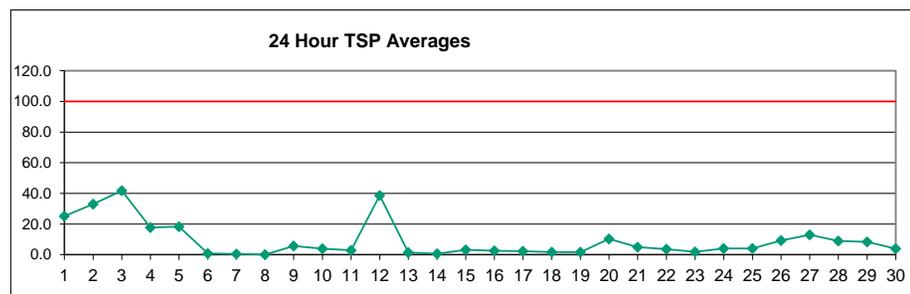
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	7.5	29.4	8.7	6.1	5.1	7.6	8.8	13.9	43.9	37.0	69.4	37.2	26.6	37.5	26.6	9.9	16.3	7.5	4.4	2.4	2.2	2.8	2.7	3.3	17.4	69.4
2	5.6	3.0	3.0	3.5	7.3	9.5	13.2	16.5	43.8	41.1	33.5	79.5	22.0	18.9	32.6	14.0	13.0	4.0	2.9	5.7	4.7	6.8	7.2	14.1	16.9	79.5
3	12.6	12.3	9.9	6.7	5.0	6.5	12.7	22.8	136.9	50.0	55.2	55.7	40.1	44.5	23.6	14.5	9.9	9.6	6.7	3.3	2.6	2.9	3.9	2.6	22.9	136.9
4	2.2	2.1	2.1	1.4	1.8	2.4	2.5	11.2	11.0	21.0	12.4	9.7	25.8	14.6	12.3	3.5	3.8	1.4	16.0	23.3	15.2	13.7	13.8	25.5	10.4	25.8
5	32.4	31.5	30.5	32.1	29.4	28.9	28.9	33.1	36.7	34.7	27.9	21.8	28.7	24.1	30.2	17.5	3.8	1.0	0.8	0.5	0.4	1.9	0.5	0.3	19.9	36.7
6	0.4	0.8	0.6	0.7	0.9	1.2	1.4	1.4	0.5	0.8	2.3	1.8	1.3	1.2	1.6	1.3	0.9	1.0	0.7	0.9	0.5	0.7	0.4	0.3	1.0	2.3
7	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.6	0.8	1.0	0.7	0.8	1.0	1.0	0.6	1.1	1.0	0.8	0.9	0.5	0.7	1.0	0.8	0.6	0.7	1.1
8	1.0	1.6	0.7	0.4	0.5	0.9	2.9	6.2	5.9	3.4	2.5	3.1	2.9	2.1	2.3	1.6	X	X	X	X	X	X	X	X	-	-
9	X	X	3.1	3.7	2.8	3.6	8.0	10.6	12.8	15.4	10.0	9.1	6.4	3.9	4.3	3.2	5.1	3.0	2.0	1.9	3.3	2.4	1.7	1.5	5.4	15.4
10	1.5	1.5	1.6	2.3	2.3	2.9	4.0	6.4	10.1	8.7	10.5	8.4	7.4	6.4	4.7	2.5	3.3	2.8	3.1	2.4	1.1	1.1	1.7	1.8	4.1	10.5
11	1.8	3.2	5.1	2.7	1.9	2.1	2.5	3.6	5.0	9.1	5.7	2.3	2.2	3.1	4.2	5.2	5.2	5.3	3.0	2.2	1.9	1.6	1.8	2.2	3.5	9.1
12	1.6	2.1	3.2	1.9	1.3	1.0	1.4	3.2	42.2	102.5	74.0	45.0	38.6	86.8	43.4	15.3	16.1	27.6	6.2	4.9	5.7	7.6	4.6	2.1	22.4	102.5
13	1.3	1.4	1.4	1.3	1.7	1.5	2.2	3.1	2.3	2.5	2.0	2.3	2.6	2.9	1.9	1.7	2.0	1.2	0.6	0.4	0.7	1.4	0.9	0.5	1.7	3.1
14	0.7	0.4	0.7	0.5	0.5	0.9	0.4	0.9	0.8	0.5	1.4	1.0	1.5	0.9	1.6	1.0	1.0	0.8	0.6	0.3	0.3	0.7	0.7	0.7	0.8	1.6
15	0.7	0.7	0.7	0.6	0.6	2.0	8.5	13.2	7.9	4.1	4.7	3.4	4.4	4.4	5.2	1.6	2.1	1.7	0.9	1.0	0.4	0.5	0.7	0.9	3.0	13.2
16	1.5	1.1	1.2	1.2	1.2	1.9	4.3	6.2	5.6	5.3	4.2	4.8	4.2	4.5	2.9	2.8	1.7	1.2	1.2	1.0	0.7	1.0	0.8	0.7	2.5	6.2
17	0.9	0.7	0.8	1.1	0.9	3.2	4.4	6.0	4.6	3.4	2.4	4.0	4.8	2.9	3.6	2.5	2.2	1.2	0.8	0.9	1.0	1.0	0.9	1.5	2.3	6.0
18	1.0	0.9	0.9	0.8	0.8	1.3	2.7	2.0	3.1	3.6	2.9	2.7	3.4	4.0	3.5	2.5	2.4	1.1	0.6	0.7	0.6	0.5	0.4	0.4	1.8	4.0
19	0.6	0.4	0.4	0.7	1.6	1.3	0.4	0.9	1.1	5.3	5.8	2.6	2.0	2.0	1.6	1.9	4.3	5.7	0.9	0.3	0.3	0.7	1.8	4.7	2.0	5.8
20	8.6	8.5	5.2	4.8	4.4	5.4	4.6	7.8	11.7	7.4	9.2	5.1	6.3	42.6	6.2	3.7	7.6	4.3	3.7	3.0	2.3	2.5	2.5	2.6	7.1	42.6
21	2.7	3.4	4.3	4.5	4.9	5.0	5.4	5.8	5.6	6.8	7.6	4.1	4.8	5.0	11.1	6.0	3.9	3.5	3.7	2.8	3.7	3.8	4.1	5.1	4.9	11.1
22	5.1	4.9	4.8	4.8	5.1	5.7	7.0	9.0	5.3	5.4	6.1	4.9	5.2	4.5	4.7	3.1	2.4	2.3	1.8	2.2	2.9	1.8	2.0	2.1	4.3	9.0
23	2.4	2.9	2.5	2.1	1.4	1.3	1.7	3.3	4.0	2.8	2.6	2.8	2.7	2.9	3.1	2.0	0.9	1.6	0.8	0.9	1.3	1.5	1.4	1.7	2.1	4.0
24	1.6	1.5	1.6	1.6	1.7	2.0	5.0	8.7	8.2	6.6	4.8	4.6	6.1	5.4	5.8	5.0	5.2	4.5	4.9	4.9	4.3	6.4	5.4	3.5	4.5	8.7
25	2.5	2.3	2.2	2.3	2.3	2.8	6.4	6.5	7.6	6.8	6.2	6.3	5.6	Y	5.8	4.7	4.8	5.8	4.3	3.7	3.9	4.9	5.4	7.5	4.8	7.6
26	9.6	7.5	5.8	5.5	6.2	6.6	9.3	10.2	11.6	13.7	12.8	12.1	11.6	11.6	8.7	9.8	10.4	9.7	9.5	9.8	10.1	10.2	10.6	10.6	9.7	13.7
27	11.5	5.7	8.3	9.6	9.5	11.4	7.2	2.2	1.7	1.9	4.8	8.8	4.2	2.0	2.7	2.6	2.0	1.7	3.1	4.7	4.4	9.6	6.8	9.5	5.7	11.5
28	6.2	2.8	3.2	2.8	2.0	1.5	1.6	5.6	12.2	5.2	5.3	5.8	9.9	8.5	9.4	2.7	3.6	3.1	1.7	2.1	3.6	1.8	1.3	1.2	4.3	12.2
29	2.7	3.3	3.0	2.3	2.2	2.7	6.6	6.7	8.7	17.4	12.8	13.4	7.5	7.4	6.5	4.9	5.1	3.9	2.9	2.7	2.6	2.2	3.5	3.5	5.6	17.4
30	3.3	3.5	3.9	3.5	3.7	4.4	6.0	6.2	7.2	6.1	6.2	5.1	6.8	5.6	5.5	4.2	3.2	4.4	4.1	3.7	4.5	5.5	4.3	4.7	4.8	7.2
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	29	30	30	29	29	29	29	29	29	29	29	709	98%
MEAN	4.5	4.8	4.0	3.7	3.6	4.3	5.7	7.8	15.3	14.3	13.5	12.3	9.9	12.5	9.2	5.1	4.9	4.2	3.2	3.2	3.0	3.4	3.2	4.0		
MAX	32.4	31.5	30.5	32.1	29.4	28.9	28.9	33.1	136.9	102.5	74.0	79.5	40.1	86.8	43.4	17.5	16.3	27.6	16.0	23.3	15.2	13.7	13.8	25.5		



Number of Non-Zero Readings	709		
Maximum 1-HR Average	136.9 UG/M3		
Maximum 24-HR Average	22.9 UG/M3		
IZS Calibration Time		OperatioEl Time	709 HRS
Down Time	0	OperatioEl Uptime	98.5 %
Standard Deviation	11.6	Monthly Average	6.7 UG/M3

West TSP ($\mu\text{g}/\text{m}^3$) – April 2019

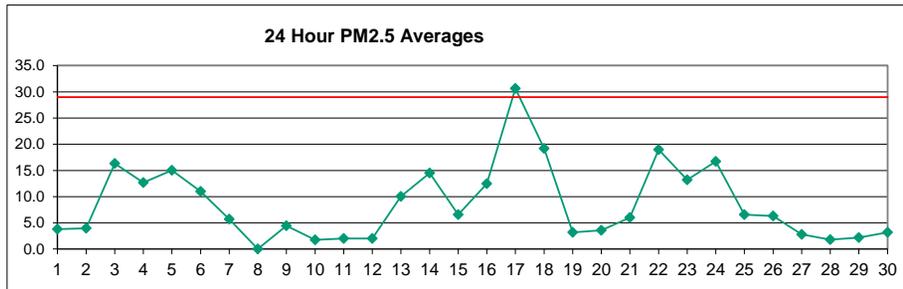
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	4.8	19.0	5.6	4.0	3.6	4.9	5.7	11.8	48.7	40.5	120.2	66.3	62.3	85.9	49.2	14.7	30.9	15.1	3.2	1.6	1.4	1.9	1.8	2.4	25.2	120.2
2	4.8	2.0	2.0	2.4	6.8	7.8	12.2	18.0	99.0	101.8	79.8	184.5	46.1	50.7	81.5	22.0	27.4	4.9	1.9	4.5	4.2	6.7	7.0	16.2	33.1	184.5
3	14.3	13.3	8.4	5.5	3.5	5.3	13.5	25.9	266.2	116.6	108.1	93.8	79.4	107.0	52.9	29.3	18.9	19.5	10.9	2.5	1.9	2.1	3.4	1.9	41.8	266.2
4	1.5	1.4	1.4	1.0	1.3	2.1	2.2	22.8	40.4	52.5	35.6	25.8	67.1	42.3	25.7	7.9	3.9	1.3	15.5	17.3	12.1	12.1	13.8	18.9	17.7	67.1
5	26.6	21.7	20.3	21.5	19.7	21.0	21.9	27.2	30.6	31.8	31.8	25.2	31.5	25.1	44.2	24.8	8.9	0.8	0.7	0.4	0.3	1.7	0.4	0.2	18.3	44.2
6	0.3	0.5	0.4	0.5	0.7	0.9	1.2	1.1	0.4	0.6	2.4	1.7	1.2	1.2	1.4	1.3	0.8	0.9	0.6	0.8	0.3	0.5	0.3	0.2	0.8	2.4
7	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.5	0.7	0.8	0.5	0.7	0.8	0.8	0.5	0.9	0.8	0.7	0.8	0.4	0.5	0.7	0.6	0.4	0.5	0.9
8	0.8	1.4	0.5	0.3	0.3	0.6	2.9	7.0	6.6	3.6	2.6	3.4	3.1	2.2	2.3	1.5	X	X	X	X	X	X	X	X	-	-
9	X	X	2.6	3.0	2.3	3.4	8.9	12.1	14.8	17.9	11.3	10.4	7.2	4.1	4.6	3.4	5.7	3.2	1.8	1.8	3.4	2.1	1.3	1.1	5.8	17.9
10	1.1	1.0	1.1	1.8	1.8	2.2	2.8	6.0	10.1	8.7	10.1	8.1	8.0	6.9	5.0	2.3	3.5	2.8	3.3	2.6	0.9	0.7	1.2	1.4	3.9	10.1
11	1.3	2.5	3.5	1.8	1.4	1.7	2.2	3.3	4.9	10.3	6.4	2.2	1.8	2.6	3.6	4.7	3.9	3.8	2.1	1.4	1.3	1.0	1.2	1.5	2.9	10.3
12	1.1	1.3	2.1	1.2	0.8	0.6	0.9	2.8	46.7	106.6	142.9	84.5	95.3	186.9	105.9	42.2	33.8	48.4	8.1	3.7	3.9	5.4	3.1	1.5	38.7	186.9
13	0.9	1.0	0.9	0.8	1.3	1.0	1.6	2.8	2.1	2.4	1.7	2.1	2.4	2.9	1.9	1.6	1.8	1.0	0.5	0.3	0.5	1.2	0.7	0.4	1.4	2.9
14	0.6	0.3	0.6	0.3	0.4	0.7	0.3	0.7	0.6	0.4	1.3	1.0	1.5	0.8	1.6	1.0	0.9	0.7	0.5	0.2	0.2	0.6	0.5	0.5	0.7	1.6
15	0.5	0.5	0.4	0.4	0.4	1.9	9.6	15.2	8.9	4.4	5.1	3.5	4.7	4.9	5.7	1.5	2.0	1.6	0.7	0.9	0.3	0.4	0.5	0.7	3.1	15.2
16	1.1	0.8	0.8	0.8	0.8	1.6	4.4	6.6	6.1	5.8	4.5	5.1	4.5	4.8	3.0	2.9	1.7	1.0	1.0	0.8	0.5	0.7	0.6	0.5	2.5	6.6
17	0.7	0.5	0.5	0.8	0.7	3.2	4.7	6.4	5.0	3.6	2.5	4.2	5.3	3.0	3.9	2.6	2.2	1.0	0.7	0.7	0.8	0.7	0.6	1.3	2.3	6.4
18	0.8	0.6	0.7	0.6	0.6	1.1	2.7	2.0	3.2	3.8	3.0	2.8	3.6	4.4	3.7	2.6	2.4	0.9	0.5	0.6	0.5	0.4	0.3	0.3	1.8	4.4
19	0.4	0.3	0.2	0.5	1.4	1.0	0.3	0.8	1.0	5.8	6.5	2.3	1.5	1.6	1.3	1.5	3.2	3.9	0.6	0.2	0.2	0.5	1.2	3.1	1.6	6.5
20	5.6	5.5	3.4	3.1	2.8	3.6	3.0	5.1	9.7	9.3	14.0	12.4	14.6	96.0	12.2	9.0	14.6	5.6	7.5	2.3	1.5	1.6	1.7	1.7	10.2	96.0
21	1.8	2.3	2.8	2.9	3.2	3.3	3.5	3.8	4.0	8.6	13.0	6.1	7.1	5.5	16.9	12.1	3.1	2.6	3.0	1.9	2.6	2.6	2.7	3.5	5.0	16.9
22	3.4	3.2	3.2	3.2	3.4	3.9	5.4	8.7	4.9	5.1	6.2	5.0	5.3	4.3	4.7	2.7	1.9	2.0	1.5	1.8	2.7	1.3	1.4	1.5	3.6	8.7
23	1.6	1.9	1.7	1.5	1.0	0.9	1.4	3.2	4.1	2.7	2.4	2.7	2.7	2.9	3.2	2.1	0.8	1.5	0.5	0.7	1.0	1.1	1.0	1.2	1.8	4.1
24	1.1	1.1	1.1	1.1	1.1	1.4	4.9	9.6	9.1	7.1	4.8	4.4	6.1	5.0	5.2	4.0	4.2	3.3	3.6	3.5	2.9	5.7	4.4	2.5	4.0	9.6
25	1.7	1.6	1.5	1.6	1.6	2.1	6.2	6.5	8.0	7.0	5.4	5.4	4.5	Y	5.0	3.5	3.5	4.8	3.0	2.6	2.7	3.5	3.9	6.7	4.0	8.0
26	9.1	6.2	4.0	3.7	4.4	4.8	9.5	11.3	13.3	15.7	14.6	13.7	13.1	13.1	8.7	10.6	11.0	9.2	8.2	8.3	7.6	7.0	7.1	6.9	9.2	15.7
27	7.4	3.7	5.4	6.2	6.2	7.5	4.7	1.4	1.1	1.2	6.2	15.8	22.9	1.5	2.2	2.1	1.6	1.2	2.6	4.5	4.1	10.1	83.4	110.1	13.1	110.1
28	39.3	2.6	2.5	2.0	1.3	1.0	1.1	17.0	29.2	8.5	14.5	9.6	22.4	14.9	19.7	4.4	12.0	5.0	1.9	1.6	3.3	1.2	0.8	0.8	9.0	39.3
29	2.1	2.6	2.2	1.6	1.5	1.8	6.1	5.9	8.4	33.8	29.5	39.4	14.5	13.1	13.4	4.7	4.9	3.0	1.9	1.8	1.7	1.5	2.4	2.3	8.3	39.4
30	2.2	2.3	2.6	2.3	2.5	3.2	4.8	5.6	6.9	5.8	6.2	4.9	7.0	5.1	5.1	3.5	2.7	3.6	2.9	2.5	3.1	3.8	2.8	3.1	3.9	7.0
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	29	30	30	29	29	29	29	29	29	29	29	709	98%
MEAN	4.7	3.5	2.8	2.6	2.6	3.2	5.0	8.4	23.1	20.8	23.1	21.6	18.3	24.1	16.5	7.6	7.3	5.3	3.1	2.5	2.3	2.7	5.2	6.6		
MAX	39.3	21.7	20.3	21.5	19.7	21.0	21.9	27.2	266.2	116.6	142.9	184.5	95.3	186.9	105.9	42.2	33.8	48.4	15.5	17.3	12.1	12.1	83.4	110.1		



Number of 24HR Exceedences	0	Proposed Guideline
Number of Non-Zero Readings	709	
Maximum 1-HR Average	266.2 UG/M3	
Maximum 24-HR Average	41.8 UG/M3	
IZS Calibration Time		Operational Time
Down Time	0	Operational Uptime
Standard Deviation	22.46	Monthly Average
		709 HRS
		98.5 %
		9.3 UG/M3

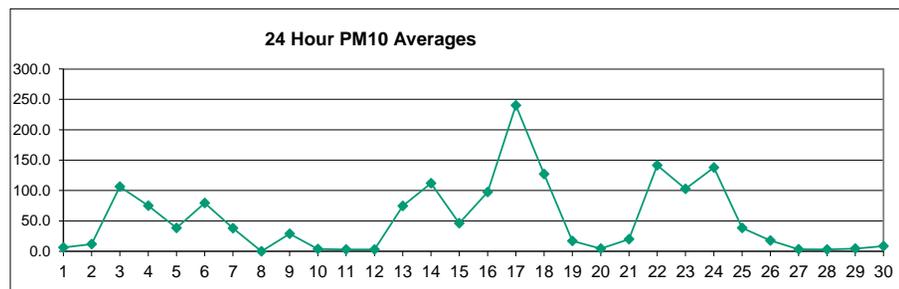
Berm PM_{2.5} (µg/m³) – April 2019

DAY	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	2.5	3.0	3.7	3.0	2.6	6.6	6.0	6.7	13.7	2.3	3.7	3.2	2.9	3.7	3.8	4.1	2.2	2.1	2.3	2.0	1.6	2.3	2.8	3.8	13.7	
2	2.4	2.2	2.1	2.0	2.7	5.3	4.4	4.4	6.1	7.0	5.3	3.7	4.8	5.8	5.8	4.2	6.4	5.5	2.3	2.0	2.0	2.1	2.7	4.2	4.0	7.0
3	10.2	13.1	6.4	4.5	3.7	3.4	7.4	8.7	25.5	11.8	7.2	5.5	13.6	22.4	33.3	25.5	37.0	18.2	18.0	22.0	26.0	23.8	15.8	29.4	16.3	37.0
4	11.2	3.6	1.6	1.3	1.0	1.5	9.0	10.8	9.7	7.5	13.1	12.5	32.7	24.9	13.8	18.9	32.8	14.1	16.9	15.8	9.0	9.7	12.5	20.4	12.7	32.8
5	20.6	21.6	22.7	22.1	20.7	19.4	23.3	23.9	22.7	19.9	18.1	18.1	15.9	10.9	8.7	5.8	15.6	15.9	14.9	1.9	2.2	9.1	6.2	1.0	15.0	23.9
6	0.9	1.1	1.4	1.4	3.1	3.0	4.1	6.2	3.0	4.7	35.6	42.6	58.5	30.1	19.6	7.5	3.7	4.7	3.5	9.5	3.3	4.3	6.6	4.8	11.0	58.5
7	11.4	9.8	4.5	2.6	3.7	2.6	1.4	3.3	3.1	11.2	13.8	8.1	7.8	11.8	5.6	7.3	8.3	11.4	3.5	1.8	0.9	0.8	0.6	1.4	5.7	13.8
8	0.6	0.9	0.4	0.3	0.5	0.7	1.5	1.6	5.2	11.5	18.6	20.6	8.6	16.8	53.7	22.3	X	X	X	X	X	X	X	X	-	-
9	X	X	1.1	1.5	1.0	2.6	8.3	13.8	12.8	12.8	12.1	8.0	2.7	1.8	1.0	2.3	2.1	1.6	3.2	1.6	1.5	2.7	2.3	1.2	4.5	13.8
10	1.6	1.0	1.0	1.0	1.0	1.4	1.5	3.1	3.3	4.4	4.1	3.7	2.9	2.6	2.0	1.0	1.7	0.8	0.6	0.9	1.1	0.6	0.6	0.6	1.8	4.4
11	0.7	1.8	3.2	1.5	1.0	0.7	1.3	5.2	3.0	2.8	1.7	1.1	1.0	1.4	1.5	7.1	2.1	1.5	1.9	2.3	1.8	1.1	1.4	1.8	2.0	7.1
12	2.1	1.4	2.0	1.0	1.0	1.0	1.0	1.3	3.3	0.8	1.3	2.0	3.8	1.6	1.8	2.1	1.9	2.2	2.4	3.8	2.8	3.7	2.9	1.4	2.0	3.8
13	1.1	1.0	0.8	0.8	0.8	0.9	1.5	14.9	33.9	23.6	24.7	21.8	17.3	35.0	18.0	14.7	10.7	7.6	4.3	3.0	1.7	1.3	0.5	1.0	10.0	35.0
14	1.6	4.9	0.4	0.3	0.9	1.3	2.0	14.3	26.7	36.7	50.1	39.8	22.9	21.2	19.5	26.1	24.2	25.3	15.0	8.3	3.0	1.9	0.9	1.0	14.5	50.1
15	0.7	0.6	0.5	0.4	0.3	0.5	3.8	12.5	19.1	18.2	9.8	9.4	9.8	14.0	3.3	8.6	13.7	5.3	14.7	10.4	0.5	0.4	0.4	0.5	6.6	19.1
16	0.7	0.7	0.7	0.6	0.8	0.8	3.7	3.6	9.8	8.4	11.6	9.9	9.4	8.6	10.1	24.2	17.1	24.0	32.9	25.0	40.6	19.5	18.3	18.4	12.5	40.6
17	14.8	9.0	6.9	6.8	1.5	2.7	5.1	25.9	29.3	45.3	30.4	25.9	47.1	54.6	87.6	86.7	80.5	29.8	31.3	49.4	24.1	20.5	10.3	9.9	30.6	87.6
18	7.0	6.3	6.7	13.6	3.8	10.4	18.0	20.9	35.9	26.5	59.3	26.4	29.3	19.6	22.9	22.5	36.3	29.8	11.3	16.0	8.7	14.3	10.6	4.4	19.2	59.3
19	1.6	0.6	0.6	4.2	16.8	7.7	8.9	3.8	3.0	5.1	4.1	1.5	1.8	0.8	0.8	1.1	2.6	3.5	0.9	0.2	0.2	0.9	2.8	3.5	3.2	16.8
20	11.0	9.5	7.2	3.9	2.4	6.4	6.3	4.8	3.2	1.8	1.4	1.3	1.5	1.6	1.7	1.7	1.8	1.9	2.0	4.9	2.6	2.5	2.3	1.9	3.6	11.0
21	1.8	3.7	3.3	4.0	5.0	5.1	3.8	3.9	3.7	4.3	9.7	6.3	6.3	5.0	5.7	10.7	9.2	11.4	8.9	4.1	6.1	6.7	8.2	7.0	6.0	11.4
22	4.6	4.3	4.3	4.2	4.3	4.5	6.5	10.8	17.6	34.3	54.8	23.9	41.5	40.0	35.2	39.7	28.6	29.6	11.9	7.3	15.0	12.4	11.5	8.9	19.0	54.8
23	6.7	8.8	5.1	7.1	4.7	2.4	17.8	36.9	26.2	13.3	26.5	28.6	23.4	7.1	20.1	13.2	25.3	7.2	11.9	10.0	8.5	4.3	1.3	1.1	13.2	36.9
24	1.1	1.3	1.6	1.1	1.1	1.4	6.5	9.5	7.0	8.7	18.0	29.9	46.9	28.8	45.9	49.6	79.4	30.0	9.3	6.4	5.2	5.4	2.7	4.3	16.7	79.4
25	2.7	2.3	2.7	2.5	1.8	1.9	2.3	7.7	13.5	7.0	7.3	7.9	12.2	18.0	19.0	9.9	7.4	7.9	5.1	4.1	3.4	3.8	4.0	3.3	6.6	19.0
26	3.4	3.9	3.8	3.6	4.1	7.6	7.9	13.3	7.9	6.8	6.0	5.4	5.6	5.7	5.5	6.0	6.7	6.5	6.6	8.2	6.9	7.0	6.5	6.3	6.3	13.3
27	4.7	4.9	4.0	5.3	5.2	5.3	5.8	3.1	1.8	1.8	2.2	1.9	2.3	1.0	2.4	1.7	2.6	1.0	1.2	1.3	1.3	1.8	2.0	2.2	2.8	5.8
28	2.1	2.0	2.0	2.2	1.8	2.0	1.7	2.0	1.8	1.3	1.3	1.9	2.4	1.4	2.2	1.2	1.0	0.9	1.0	2.3	3.9	1.9	1.2	1.4	1.8	3.9
29	2.8	1.3	1.6	1.5	1.3	1.1	2.7	3.2	2.5	2.3	1.7	1.9	2.2	3.4	3.5	2.7	4.4	3.1	2.1	1.9	1.9	1.2	1.2	1.3	2.2	4.4
30	1.3	1.7	2.3	2.0	2.0	1.9	2.3	3.5	5.3	6.1	3.7	6.1	3.6	3.5	3.0	2.9	2.5	4.1	2.6	2.4	2.9	3.0	4.2	4.1	3.2	6.1
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	710	99%
MEAN	4.6	4.4	3.5	3.5	3.4	3.7	5.9	9.4	12.0	11.6	15.2	12.6	14.7	13.4	15.2	14.4	16.2	10.6	8.3	7.9	6.5	5.8	4.9	5.1		
MAX	20.6	21.6	22.7	22.1	20.7	19.4	23.3	36.9	35.9	45.3	59.3	42.6	58.5	54.6	87.6	86.7	80.5	30.0	32.9	49.4	40.6	23.8	18.3	29.4		



Berm PM₁₀ (µg/m³) – April 2019

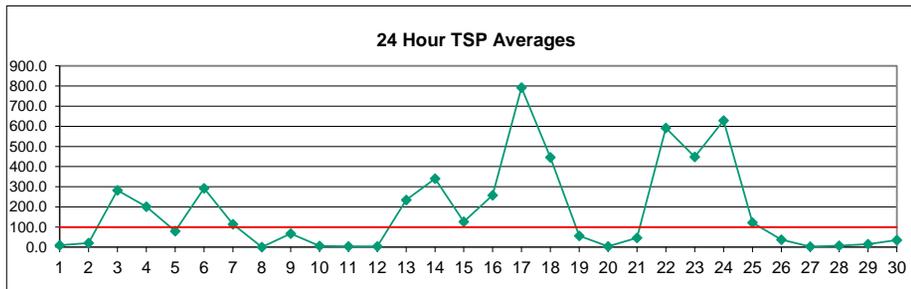
DAY	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	2.7	3.2	4.2	3.5	2.8	7.2	6.8	8.1	20.3	2.7	14.1	8.5	7.1	10.8	8.5	7.9	9.7	4.0	2.4	2.7	2.4	1.7	2.5	3.7	6.1	20.3
2	3.4	2.5	2.4	2.2	3.4	7.2	5.9	8.5	19.3	28.3	21.0	11.8	17.1	22.6	22.5	15.1	30.7	29.9	4.7	2.5	2.4	2.8	5.5	15.1	11.9	30.7
3	80.4	81.4	19.9	12.5	11.3	6.4	39.2	47.8	166.8	67.6	37.9	24.4	100.4	170.0	231.7	178.8	262.8	117.3	115.6	131.8	166.3	142.2	103.0	241.7	106.5	262.8
4	95.8	15.3	3.4	3.0	2.3	4.7	70.7	88.6	83.5	49.4	104.2	104.5	241.4	197.6	103.8	146.5	244.7	104.2	45.4	21.4	10.8	13.4	16.4	25.4	74.8	244.7
5	24.1	25.7	27.5	27.7	27.2	25.4	33.5	35.6	33.6	29.2	30.6	33.4	31.8	25.6	22.7	12.6	119.4	117.0	126.0	9.4	13.9	49.2	40.3	3.5	38.5	126.0
6	1.3	2.2	7.6	7.4	17.9	15.8	30.6	49.2	12.1	26.6	267.7	382.6	482.9	204.1	103.8	44.9	23.5	25.0	22.7	58.8	18.3	25.4	42.4	29.8	79.3	482.9
7	74.4	72.2	35.1	19.8	28.0	17.5	8.4	25.9	22.7	81.5	84.9	49.5	51.4	78.5	35.5	47.0	51.8	88.9	18.9	10.1	4.3	1.4	1.1	6.2	38.1	88.9
8	1.7	3.4	0.7	0.5	1.0	2.0	7.7	7.4	38.3	86.4	135.4	142.3	60.4	136.8	340.8	158.1	X	X	X	X	X	X	X	X	-	-
9	X	X	2.5	2.9	1.9	7.9	64.2	120.9	91.4	91.9	89.1	55.3	17.1	5.9	2.7	13.8	9.5	5.9	10.4	5.6	5.5	13.2	10.5	2.8	28.7	120.9
10	5.2	1.5	1.2	1.2	1.2	1.6	1.7	4.2	4.7	6.1	5.2	8.2	7.7	12.8	7.7	4.0	6.7	1.1	0.8	1.7	1.3	0.7	0.7	0.6	3.7	12.8
11	0.8	2.4	3.8	1.7	1.2	0.7	1.7	7.8	4.4	10.4	5.8	1.5	1.2	1.7	1.8	10.2	2.4	1.5	1.9	2.7	2.1	1.2	1.5	2.0	3.0	10.4
12	2.2	1.5	2.4	1.0	1.1	1.0	1.2	1.5	4.7	0.8	2.2	4.9	6.9	2.9	4.8	4.7	3.0	2.9	2.7	5.5	4.1	4.5	3.7	1.9	3.0	6.9
13	1.4	1.3	1.0	0.9	1.0	1.1	4.6	135.7	295.3	194.3	203.2	184.0	124.8	241.8	117.2	98.7	77.4	43.7	20.6	16.3	9.3	5.5	1.0	7.0	74.5	295.3
14	14.5	48.8	1.3	0.5	5.6	7.0	15.1	152.0	236.7	304.6	343.4	263.2	198.9	180.2	162.2	193.8	182.6	191.7	91.5	53.8	18.6	10.6	3.1	3.7	111.8	343.4
15	1.6	1.3	1.0	0.6	0.6	1.5	33.8	99.7	122.5	126.5	69.7	64.9	67.4	102.0	20.4	67.2	104.8	32.8	111.1	74.6	1.1	0.6	0.6	0.6	46.1	126.5
16	1.1	1.3	2.1	1.0	1.8	2.1	27.7	24.0	82.4	79.7	93.2	73.8	78.7	66.6	72.3	170.5	140.8	194.5	287.4	209.7	331.1	130.1	125.9	138.8	97.4	331.1
17	102.1	59.9	37.5	41.8	6.4	14.8	40.8	211.0	219.2	347.9	235.1	215.5	381.8	443.0	719.7	680.0	626.3	277.0	269.8	402.6	199.9	114.1	60.9	59.4	240.3	719.7
18	35.5	33.1	34.6	69.3	18.4	59.1	98.9	130.0	243.3	193.9	424.9	203.8	195.1	140.3	160.5	162.0	247.4	187.1	68.7	107.1	56.1	72.1	77.3	29.2	127.0	424.9
19	6.7	1.5	1.4	27.3	148.2	44.4	47.4	25.0	24.3	34.3	22.6	2.5	2.3	0.9	1.0	1.3	2.8	3.8	1.0	0.2	0.2	1.0	3.8	4.3	17.0	148.2
20	14.9	13.2	9.2	5.0	2.7	9.5	9.2	5.7	3.7	2.1	1.9	1.4	1.9	1.9	2.0	1.9	2.1	2.1	2.2	5.7	3.0	3.1	2.8	2.0	4.5	14.9
21	1.9	5.2	3.8	5.0	6.5	9.5	4.4	4.9	4.9	14.8	32.9	18.2	17.9	13.5	17.9	48.4	32.8	61.4	37.4	7.8	26.0	33.1	41.7	31.1	20.0	61.4
22	6.9	5.1	6.0	5.0	4.9	6.3	27.4	77.0	130.9	272.8	426.4	188.9	338.7	327.4	274.5	319.4	212.3	208.8	83.4	54.5	132.2	109.1	99.9	80.4	141.6	426.4
23	44.6	59.7	32.3	53.3	36.3	13.1	129.5	267.6	199.9	102.7	234.7	223.5	182.0	47.6	159.3	90.8	201.4	74.3	119.1	92.8	67.0	28.4	3.4	2.2	102.7	267.6
24	1.6	2.6	3.4	1.7	1.5	4.2	39.3	73.1	51.2	58.6	156.0	259.9	429.1	244.8	392.6	503.0	719.0	219.1	58.9	32.1	16.9	21.6	5.0	12.2	137.8	719.0
25	5.2	6.4	9.3	7.4	3.0	3.5	6.9	64.0	125.4	38.8	30.1	38.3	81.8	153.0	143.3	59.5	38.5	47.8	22.0	10.6	4.9	7.2	7.6	4.1	38.3	153.0
26	4.4	5.9	5.4	4.7	7.2	28.2	25.6	86.9	27.2	21.7	18.4	17.0	18.1	17.4	15.1	18.2	20.8	19.0	13.6	17.9	10.4	10.2	7.2	7.1	17.8	86.9
27	5.3	6.2	4.8	5.9	5.6	5.8	7.0	4.2	2.1	2.4	2.8	2.2	3.2	1.1	3.4	2.4	3.6	1.1	1.3	1.5	1.5	2.4	2.7	2.9	3.4	7.0
28	2.6	2.4	2.5	2.7	2.2	2.3	2.0	2.8	3.2	3.1	2.6	4.4	5.6	2.4	6.1	2.3	1.4	1.2	1.7	5.0	5.5	2.4	1.4	1.8	2.9	6.1
29	4.1	1.6	1.9	1.7	1.5	1.2	3.5	4.5	5.3	5.1	2.8	3.4	5.1	11.3	13.2	7.3	13.8	7.5	2.4	2.1	2.3	1.3	1.2	1.4	4.4	13.8
30	1.4	1.8	2.4	2.1	2.2	2.1	2.7	18.9	37.9	29.3	12.4	38.4	4.8	6.9	4.2	3.5	3.3	5.3	2.9	2.6	3.0	3.2	5.0	4.8	8.4	38.4
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	710	99%
MEAN	18.9	16.2	9.0	10.6	11.8	10.4	26.6	59.7	77.2	77.1	103.7	87.7	105.4	95.7	105.7	102.5	117.1	71.6	53.3	46.5	38.6	28.0	23.4	25.0		
MAX	102.1	81.4	37.5	69.3	148.2	59.1	129.5	267.6	295.3	347.9	426.4	382.6	482.9	443.0	719.7	680.0	719.0	277.0	287.4	402.6	331.1	142.2	125.9	241.7		



Number of Non-Zero Readings	710
Maximum 1-HR Average	719.7 UG/M3
Maximum 24-HR Average	240.3 UG/M3
Monthly Calibration	0
Standard Deviation	96.3
Operational Time	710 HRS
Operational Uptime	98.6 %
Monthly Average	55.2 UG/M3

Berm TSP ($\mu\text{g}/\text{m}^3$) – April 2019

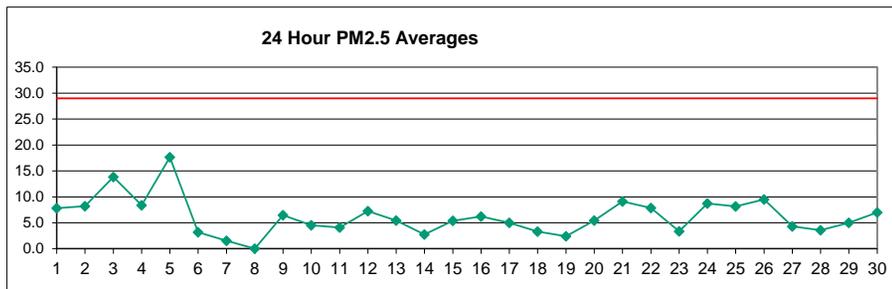
DAY	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	1.8	2.1	2.8	2.4	1.9	4.7	4.5	5.4	22.2	2.0	23.3	24.5	28.6	25.9	10.9	13.9	18.4	5.4	1.6	1.7	1.6	1.1	1.6	3.1	8.8	28.6
2	4.6	1.6	1.6	1.5	2.9	6.2	4.6	11.0	25.7	71.4	50.5	19.9	25.8	39.7	35.8	27.4	56.9	52.1	8.0	1.9	2.0	2.4	8.5	24.6	20.3	71.4
3	176.3	123.8	33.3	31.4	35.5	9.6	81.7	100.6	335.7	131.1	80.6	54.7	217.3	396.4	564.8	494.7	827.6	329.0	368.3	383.8	532.2	428.7	296.5	738.9	282.2	827.6
4	287.1	22.7	4.7	3.6	7.4	15.5	195.9	279.1	308.2	139.6	285.5	311.7	652.8	552.0	276.9	388.8	631.4	223.8	131.1	29.8	10.4	18.4	19.8	19.4	200.7	652.8
5	16.2	17.6	18.9	19.2	19.0	18.2	29.8	33.9	30.2	26.4	40.7	49.8	47.6	37.6	34.6	19.4	357.2	328.1	370.7	15.3	57.7	139.8	177.7	8.0	79.7	370.7
6	1.1	3.5	34.0	36.2	56.2	48.3	129.3	214.1	43.4	105.4	1039.5	1666.7	1923.4	676.6	244.4	123.2	68.7	54.9	60.1	164.0	38.8	75.4	133.4	85.1	292.7	1923.4
7	213.7	240.7	140.3	86.8	95.9	57.3	25.3	80.6	64.8	220.4	188.7	111.0	115.5	199.6	98.0	147.2	146.8	340.6	67.4	41.0	14.5	1.8	2.1	29.9	113.7	340.6
8	3.0	10.0	1.9	0.7	2.8	5.2	17.9	17.6	80.7	192.2	257.3	267.4	112.2	271.9	627.0	357.6	X	X	X	X	X	X	X	X	-	-
9	X	X	3.0	2.7	3.8	8.2	108.4	285.3	216.1	275.6	226.4	119.0	42.8	16.1	5.7	32.1	19.2	9.2	13.7	6.8	11.8	35.6	32.6	7.7	67.4	285.3
10	17.1	3.3	0.8	0.8	0.8	1.1	1.2	4.0	4.6	5.4	4.3	14.6	11.9	26.0	15.5	15.5	13.2	1.8	0.5	5.4	1.0	0.4	0.4	0.4	6.2	26.0
11	0.5	2.0	2.6	1.2	0.8	0.5	1.7	8.8	4.9	28.5	12.4	1.0	0.8	1.2	1.3	11.0	1.7	1.0	1.2	1.9	1.5	0.8	1.0	1.3	3.7	28.5
12	1.5	1.0	1.8	0.7	0.8	0.7	0.9	1.2	5.0	0.5	2.1	10.9	11.3	3.9	13.2	11.2	4.0	4.4	2.6	6.6	7.7	3.1	2.7	1.6	4.1	13.2
13	1.0	1.5	0.9	0.6	0.6	0.7	10.5	406.8	923.5	593.4	562.9	554.5	421.8	762.9	376.3	319.8	313.2	165.1	80.4	55.9	31.6	14.2	1.7	30.8	234.6	923.5
14	66.3	219.0	3.3	0.3	22.0	39.7	43.7	449.0	675.4	831.8	924.5	794.9	769.5	647.3	520.5	598.5	622.6	587.5	230.9	70.8	29.5	17.4	5.3	5.3	340.6	924.5
15	1.8	2.5	1.7	4.1	0.5	3.9	122.5	256.3	259.0	301.9	156.9	204.6	164.8	439.6	57.7	223.5	286.0	82.6	293.8	169.9	4.5	0.4	0.6	0.6	126.7	439.6
16	0.8	2.2	6.2	2.8	2.5	9.0	112.0	84.5	275.2	265.8	279.8	172.7	192.6	164.0	160.2	431.7	406.9	511.1	708.8	536.4	799.2	288.1	358.1	406.2	257.4	799.2
17	292.4	138.9	59.0	103.4	13.8	49.7	130.2	581.0	631.4	1121.2	805.0	780.2	1283.0	1503.1	2418.6	2352.5	2205.5	978.2	871.9	1462.6	723.0	215.6	143.2	161.8	792.7	2418.6
18	66.4	96.7	102.1	228.1	68.7	236.1	331.8	437.2	873.6	693.8	1489.7	738.4	658.6	489.4	524.3	528.7	882.8	721.5	242.8	399.8	215.7	218.6	312.8	138.1	445.7	1489.7
19	32.3	2.0	1.5	108.7	584.4	113.0	102.1	72.5	83.4	135.8	100.8	4.4	1.7	0.7	0.7	0.8	1.8	2.5	0.7	0.1	0.1	0.7	3.0	3.1	56.5	584.4
20	13.3	10.5	6.8	4.0	1.9	9.2	8.7	3.9	2.5	1.4	2.3	1.5	4.5	1.8	2.2	1.4	2.0	1.5	2.8	7.0	3.6	2.8	2.6	1.4	4.1	13.3
21	1.3	4.4	2.6	3.9	4.9	7.6	5.6	6.4	6.5	63.7	42.7	22.0	24.6	26.5	30.3	122.7	67.6	144.4	75.1	7.2	79.6	107.5	128.4	113.6	45.8	144.4
22	7.1	6.7	10.3	7.5	6.2	6.8	78.9	238.5	511.4	1104.2	1677.2	782.4	1406.7	1521.4	1182.0	1278.8	808.3	829.7	421.2	306.6	664.1	473.0	466.7	423.4	592.5	1677.2
23	188.1	257.9	135.2	237.6	175.2	52.3	435.0	912.4	792.5	383.9	1038.3	829.1	750.0	199.5	690.4	319.6	1137.0	461.6	664.7	567.0	334.0	180.9	11.0	3.2	448.2	1137.0
24	2.1	3.1	3.1	1.1	1.1	11.2	85.3	199.8	135.5	201.7	828.9	1141.1	2279.4	1081.0	1794.2	2537.8	2920.8	1070.9	375.8	218.4	59.6	107.9	9.2	26.1	629.0	2920.8
25	8.1	13.8	22.5	17.2	4.7	6.9	9.9	185.8	391.0	92.0	56.6	115.5	307.7	558.1	528.9	201.5	139.8	136.6	62.8	21.2	8.5	10.6	9.6	2.9	121.3	558.1
26	3.4	7.4	6.6	4.4	10.0	45.2	46.8	214.2	52.5	37.4	32.6	30.5	38.7	33.6	29.3	40.3	56.8	78.9	42.6	36.9	13.9	12.1	4.7	4.7	36.8	214.2
27	3.5	4.3	3.2	3.9	3.6	3.8	4.9	3.6	1.7	1.8	2.3	2.1	3.9	0.7	2.9	1.8	3.4	0.7	0.9	1.0	1.1	1.8	2.2	2.1	2.5	4.9
28	2.0	1.7	1.8	2.0	1.6	1.6	1.4	2.3	8.2	5.9	6.8	38.9	37.0	4.1	7.9	3.8	1.6	1.1	5.0	27.9	5.3	1.8	0.9	1.4	7.2	38.9
29	4.1	1.1	1.4	1.3	1.0	0.8	2.7	4.6	8.1	6.3	7.7	7.4	9.6	24.7	20.9	28.4	134.4	81.2	1.7	1.4	1.9	0.8	0.8	0.9	14.7	134.4
30	0.9	1.2	1.6	1.4	1.5	1.4	2.0	55.5	101.6	57.9	25.8	531.7	4.0	10.5	22.9	2.8	3.0	4.5	1.9	1.7	2.0	2.2	4.0	3.6	35.2	531.7
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	710	99%
MEAN	48.9	41.5	20.5	30.6	37.7	25.8	71.2	171.9	229.2	236.6	341.7	313.4	384.9	323.9	343.3	354.5	418.6	248.6	176.2	156.9	126.1	81.5	73.8	77.6		
MAX	292.4	257.9	140.3	237.6	584.4	236.1	435.0	912.4	923.5	1121.2	1677.2	1666.7	2279.4	1521.4	2418.6	2537.8	2920.8	1070.9	871.9	1462.6	799.2	473.0	466.7	738.9		



Number of 24HR Exceedences	14	Proposed Guideline
Number of Non-Zero Readings	710	
Maximum 1-HR Average	2920.8	UG/M3
Maximum 24-HR Average	792.7	UG/M3
IZS Calibration Time		Operational Time
Monthly Calibration	0	Operational Uptime
Standard Deviation	359.7	Monthly Average
		710 HRS
		98.6 %
		181.1 UG/M3

Entrance PM_{2.5} (µg/m³) – April 2019

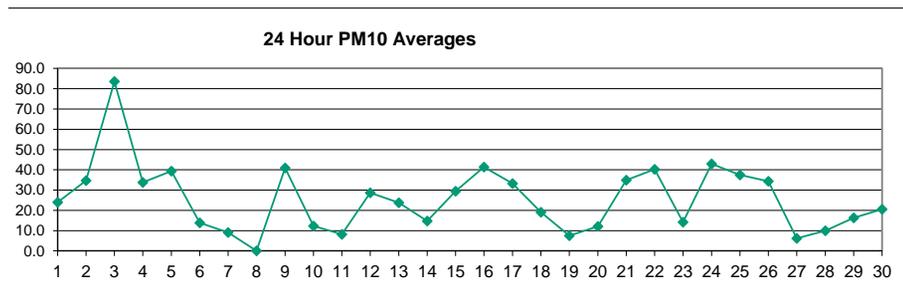
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	5.9	5.6	5.2	4.4	4.4	8.4	10.6	9.4	14.5	4.5	10.1	13.8	12.6	14.3	12.5	8.7	12.9	5.3	2.4	2.7	3.5	3.6	6.9	4.8	7.8	14.5
2	3.9	2.9	3.3	3.6	3.2	8.6	13.0	16.6	12.8	8.1	10.0	15.1	9.9	13.1	10.9	7.5	6.2	4.0	5.0	9.0	5.2	10.0	6.2	8.9	8.2	16.6
3	10.2	8.3	14.7	17.0	18.8	20.9	35.4	25.5	15.0	27.7	30.8	27.4	17.4	11.7	11.7	10.1	7.4	5.7	4.5	3.0	3.1	2.1	2.0	1.8	13.8	35.4
4	2.5	4.2	3.1	3.9	2.0	3.2	6.1	10.6	6.8	7.5	6.3	9.0	6.1	8.0	7.6	6.2	6.5	3.7	18.6	18.3	14.2	11.0	14.8	21.3	8.4	21.3
5	22.7	23.5	25.1	24.3	27.1	23.9	30.0	32.3	25.4	28.8	30.1	29.6	23.6	15.6	20.3	13.4	7.6	2.7	1.3	6.8	5.0	1.7	1.2	1.8	17.7	32.3
6	1.8	16.5	3.9	1.1	1.6	0.6	4.0	4.0	3.3	1.3	6.9	7.1	4.8	3.4	1.6	2.0	2.4	4.6	2.4	0.5	1.5	0.4	0.3	0.4	3.2	16.5
7	0.2	0.7	0.3	0.2	0.3	0.3	1.2	2.4	3.0	2.3	1.3	2.2	1.7	1.9	5.4	1.7	1.2	5.3	0.5	0.5	0.6	1.5	0.8	1.0	1.5	5.4
8	0.6	0.4	1.0	1.3	2.9	10.0	10.7	8.8	9.9	5.6	5.1	3.5	2.2	5.9	5.1	2.7	X	X	X	X	X	X	X	X	-	-
9	X	X	3.0	5.4	7.3	2.5	8.8	9.4	7.1	7.0	8.3	9.8	11.1	3.5	5.0	7.0	11.0	9.7	6.8	2.6	2.9	5.8	4.6	3.9	6.5	11.1
10	2.7	6.6	4.5	3.4	5.9	3.1	3.8	7.1	4.2	5.7	7.7	8.7	5.3	5.5	5.8	2.1	2.8	2.7	1.9	5.5	3.0	3.4	2.6	4.1	4.5	8.7
11	2.4	3.1	8.2	4.5	5.3	7.3	5.0	7.4	11.3	7.4	5.4	1.1	1.7	1.9	2.8	6.6	2.4	2.0	1.6	2.5	1.5	1.7	2.4	2.2	4.1	11.3
12	2.7	2.3	2.4	2.8	2.6	2.4	1.3	1.9	2.3	4.1	11.3	12.6	18.5	19.2	14.7	8.4	6.7	5.4	5.5	7.0	4.8	7.3	15.9	11.9	7.2	19.2
13	12.2	7.7	7.3	7.5	10.5	11.3	12.6	9.7	8.3	7.1	9.5	6.3	3.9	5.7	2.0	1.9	1.5	1.8	0.5	0.2	0.5	0.6	1.8	0.6	5.4	12.6
14	0.7	0.7	0.6	1.8	1.5	2.7	6.2	4.8	1.9	5.4	7.1	8.1	5.5	3.3	2.5	1.3	0.9	0.7	0.6	0.3	0.3	0.5	1.8	6.6	2.7	8.1
15	8.1	6.3	4.0	4.5	8.4	7.5	9.8	7.9	8.0	5.5	3.9	5.1	4.4	7.2	7.6	5.2	5.3	1.1	1.1	1.0	3.9	8.3	3.1	2.2	5.4	9.8
16	4.6	2.6	2.7	5.7	8.4	12.5	12.7	33.3	19.1	5.2	4.8	6.1	2.8	3.9	2.2	4.3	4.9	2.6	3.6	1.9	0.8	1.4	1.6	1.4	6.2	33.3
17	1.6	1.0	0.9	1.5	1.7	1.9	4.5	8.3	8.6	12.1	9.6	7.0	7.5	6.5	10.2	7.2	4.8	4.5	4.9	4.8	4.6	1.3	2.3	2.3	5.0	12.1
18	1.9	1.4	1.4	1.1	1.4	2.2	3.1	4.6	6.5	5.4	6.9	7.5	5.7	4.4	6.0	3.9	5.6	4.2	1.0	1.6	0.7	1.0	0.6	0.9	3.3	7.5
19	0.8	1.0	0.6	1.3	4.4	2.0	3.4	5.4	6.3	4.7	2.9	1.9	1.3	0.7	1.1	1.2	2.5	3.3	2.1	0.5	0.4	2.5	3.2	4.6	2.4	6.3
20	6.9	8.1	7.9	6.8	5.7	5.8	4.9	7.3	6.7	3.2	6.8	6.6	7.2	5.5	5.9	2.3	4.3	2.4	2.9	4.9	5.2	4.1	4.8	4.2	5.4	8.1
21	2.7	7.1	9.5	4.7	9.8	9.6	12.6	13.2	13.1	8.4	4.9	6.1	4.3	4.1	3.8	3.3	3.2	3.4	7.1	8.9	20.1	31.9	23.4	9.1	31.9	
22	12.2	11.4	8.5	8.3	9.0	10.4	11.1	14.3	8.5	11.7	12.8	6.1	8.4	7.9	6.1	8.1	7.5	4.1	2.3	2.0	3.0	5.3	5.1	4.0	7.8	14.3
23	2.5	3.2	3.0	2.5	2.0	1.7	4.4	4.8	4.7	5.0	6.8	8.6	5.9	5.2	3.1	1.7	2.7	1.2	2.3	1.0	1.4	1.0	2.2	3.6	3.4	8.6
24	2.6	6.5	6.0	8.5	7.7	11.3	4.1	10.0	13.0	10.2	6.2	9.4	15.7	9.0	10.0	9.9	12.1	9.6	8.0	9.0	10.0	8.1	4.8	7.6	8.7	15.7
25	6.6	6.3	5.7	5.6	8.9	17.3	15.8	7.7	11.4	6.6	8.3	7.6	11.7	11.1	6.6	6.8	6.8	5.9	7.4	9.4	5.3	5.6	7.4	4.0	8.2	17.3
26	4.1	6.1	4.9	10.1	9.5	18.9	16.3	9.8	9.7	8.9	8.5	8.8	8.4	6.8	10.3	12.7	10.7	9.7	10.6	9.0	8.2	9.1	9.3	7.3	9.5	18.9
27	7.2	7.0	5.5	6.3	6.1	8.0	10.1	3.0	4.5	6.2	4.0	4.5	3.2	1.0	1.3	1.8	5.8	2.1	2.4	2.6	2.6	2.5	2.8	2.6	4.3	10.1
28	3.5	2.4	3.2	2.5	4.1	5.7	6.3	3.2	2.4	1.9	3.0	4.5	4.2	1.7	2.1	3.0	6.6	5.0	2.7	3.5	5.5	3.5	2.7	2.8	3.6	6.6
29	2.3	2.3	2.2	2.8	4.6	5.1	8.2	4.7	4.5	6.6	6.9	5.1	6.9	6.2	9.9	7.2	9.2	7.7	2.6	2.6	3.3	1.9	2.4	4.6	5.0	9.9
30	6.4	10.0	6.1	6.5	9.1	7.3	7.4	12.4	10.1	7.9	10.4	17.3	3.9	4.1	6.6	4.1	3.0	10.2	2.7	3.1	3.5	4.3	5.7	6.5	7.0	17.3
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	710	99%
MEAN	4.9	5.7	5.2	5.3	6.5	7.8	9.4	10.0	8.7	7.7	8.6	8.9	7.5	6.6	6.7	5.4	5.7	4.5	3.8	4.2	3.9	4.5	5.2	5.2		
MAX	22.7	23.5	25.1	24.3	27.1	23.9	35.4	33.3	25.4	28.8	30.8	29.6	23.6	19.2	20.3	13.4	12.9	10.2	18.6	18.3	14.2	20.1	31.9	23.4		



Number of 24HR Exceedences	0	Proposed Guideline	
Number of Non-Zero Readings	710		
Maximum 1-HR Average	35.4 UG/M3		
Maximum 24-HR Average	17.7 UG/M3		
Monthly Calibration	0	Operational Time	710 HRS
Standard Deviation	5.485	Operational Uptime	98.6 %
		Monthly Average	6.4 UG/M3

Entrance PM₁₀ (µg/m³) – April 2019

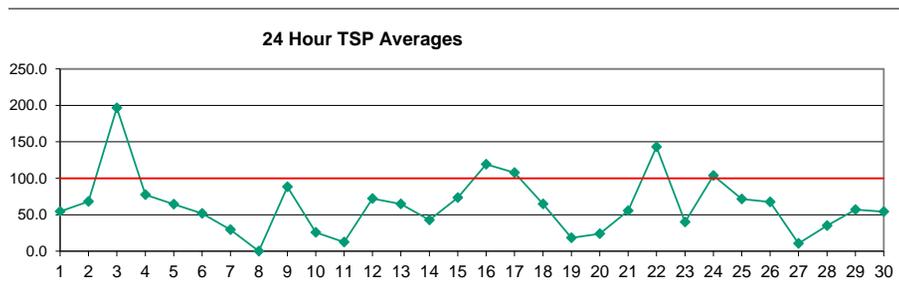
Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	6.7	6.0	6.1	4.9	4.8	9.2	12.9	11.9	21.1	5.5	36.1	67.3	64.5	80.6	64.2	41.0	81.5	20.8	2.9	3.1	4.2	3.9	9.1	6.7	24.0	81.5
2	6.6	3.3	3.8	4.4	3.7	12.6	19.3	68.5	61.8	29.9	50.3	78.9	46.1	75.7	56.1	39.0	28.4	14.8	24.9	58.2	21.6	58.9	21.4	44.8	34.7	78.9
3	16.4	13.6	68.7	95.5	112.6	136.5	275.4	189.8	89.3	195.5	226.3	194.3	107.4	73.0	63.9	48.4	30.7	20.6	17.0	9.7	10.5	4.6	3.7	3.5	83.6	275.4
4	7.8	18.9	11.2	17.8	6.0	18.0	30.0	61.7	43.5	47.1	50.8	61.2	36.3	62.7	46.3	41.0	39.1	21.3	64.8	32.6	33.9	14.5	20.2	25.2	33.8	64.8
5	26.2	27.8	31.2	31.2	38.6	35.3	44.6	48.4	37.9	43.4	83.1	79.7	64.7	48.4	73.7	60.6	38.5	15.9	6.6	48.2	36.5	7.4	11.7	4.4	39.3	83.1
6	2.8	31.3	10.2	3.5	8.3	2.0	18.7	17.3	10.1	3.7	53.9	49.4	32.8	19.2	7.9	9.5	9.6	25.2	11.1	1.4	3.1	0.8	0.5	0.9	13.9	53.9
7	0.4	3.8	0.7	0.5	0.8	0.4	3.4	13.4	17.7	17.4	6.9	16.1	10.7	7.6	38.1	11.2	5.4	48.0	1.2	1.1	1.2	6.7	2.3	3.7	9.1	48.0
8	0.7	0.4	3.6	6.0	16.5	61.8	74.3	72.9	77.7	44.4	37.8	27.9	15.8	48.4	37.5	19.0	X	X	X	X	X	X	X	X	-	-
9	X	X	10.3	27.1	50.2	12.3	56.5	75.5	40.4	37.8	51.2	65.7	77.1	18.1	32.1	43.1	78.3	67.8	45.9	9.4	17.0	38.7	24.2	21.2	40.9	78.3
10	10.7	29.9	6.7	5.0	8.8	4.3	5.3	9.8	6.0	8.2	11.7	37.1	19.6	30.0	38.8	7.0	7.2	13.1	7.1	11.0	4.1	4.7	3.5	5.8	12.3	38.8
11	3.3	4.3	12.2	6.7	7.8	10.9	7.5	11.0	39.8	32.3	23.0	1.3	2.2	2.4	3.7	9.5	2.7	2.1	1.7	2.7	1.6	1.9	2.8	2.5	8.2	39.8
12	3.0	2.4	2.7	3.1	2.8	2.6	1.3	2.3	2.8	5.6	55.4	73.5	108.8	128.5	104.6	38.7	35.3	21.1	22.7	13.4	6.2	9.8	23.7	17.8	28.7	128.5
13	56.9	38.0	34.5	19.9	15.7	20.0	65.5	67.4	42.4	34.3	37.6	40.7	18.1	38.3	10.6	7.0	7.4	5.7	1.0	0.3	1.2	1.2	5.5	1.3	23.8	67.4
14	2.8	2.6	1.2	6.5	6.8	13.0	39.3	18.2	7.3	21.0	30.8	45.1	63.0	20.4	14.7	6.2	5.1	2.8	2.9	0.6	0.8	1.3	9.0	31.3	14.7	63.0
15	41.8	29.1	16.4	21.3	52.9	45.6	62.4	40.7	42.0	23.7	20.9	31.3	24.9	43.2	46.6	27.3	26.2	4.1	3.6	2.7	23.0	49.1	18.2	11.0	29.5	62.4
16	22.0	12.2	12.7	30.1	48.4	69.6	74.6	279.7	168.7	33.4	23.5	35.0	14.8	20.1	12.2	31.1	37.8	14.6	22.8	9.1	1.8	5.8	6.3	5.4	41.3	279.7
17	5.4	2.0	2.3	5.0	6.8	8.1	25.0	56.5	66.9	90.0	67.6	51.3	47.3	48.9	80.8	57.3	29.5	31.4	34.2	31.8	30.0	4.0	8.3	8.4	33.3	90.0
18	7.7	2.7	3.9	2.9	4.6	9.5	14.8	23.2	37.0	32.1	43.2	41.7	44.3	28.5	43.9	28.7	38.3	28.6	3.4	7.8	2.0	3.5	2.2	3.8	19.1	44.3
19	2.2	2.7	1.8	6.4	31.7	10.8	15.1	19.2	27.6	21.1	11.2	2.4	1.5	0.8	1.4	1.3	2.6	3.5	2.3	0.5	0.5	3.0	4.1	5.4	7.5	31.7
20	7.4	8.3	8.5	7.3	6.4	6.0	5.1	9.1	8.3	4.1	26.9	29.7	30.7	23.7	43.3	3.9	19.7	3.4	6.0	9.8	7.2	5.1	6.0	5.0	12.1	43.3
21	3.0	10.3	14.1	5.2	15.9	27.1	46.6	55.2	52.4	30.3	9.9	13.0	7.8	7.5	8.8	7.8	5.7	8.5	7.7	33.0	41.7	114.3	201.2	111.9	34.9	201.2
22	55.6	52.7	33.3	35.7	33.6	40.7	56.3	92.4	41.0	69.9	93.3	32.7	49.4	43.4	35.6	41.4	35.6	24.9	11.2	5.6	13.4	25.2	25.8	18.2	40.3	93.3
23	5.3	7.1	5.9	6.3	4.5	4.0	18.6	20.3	20.6	26.0	31.5	39.2	30.2	29.4	17.4	8.7	19.5	6.1	9.1	2.8	3.8	1.8	8.2	15.5	14.2	39.2
24	9.8	31.6	31.2	47.6	36.7	62.4	13.6	43.6	96.3	52.4	39.4	65.0	99.3	47.1	48.5	48.1	52.0	38.2	26.7	30.1	33.9	31.7	13.4	32.0	42.9	99.3
25	18.6	23.0	26.5	23.2	49.3	91.8	109.8	43.0	55.8	31.1	41.9	33.4	66.5	63.0	26.1	24.2	25.0	21.1	23.9	33.3	17.5	18.0	27.9	6.1	37.5	109.8
26	7.4	18.3	9.8	42.5	40.5	101.0	71.4	36.7	35.5	31.5	36.9	38.0	37.9	27.3	48.1	66.6	42.9	32.4	34.1	20.6	12.3	14.5	11.1	7.8	34.4	101.0
27	8.8	9.1	6.2	7.0	6.7	9.5	14.1	3.9	6.5	8.9	6.3	8.1	4.5	1.2	1.7	2.4	8.6	2.8	3.2	3.6	3.5	7.9	9.9	4.0	6.2	14.1
28	4.7	2.9	4.5	4.1	20.4	11.1	9.1	8.8	5.5	5.1	11.1	13.3	15.4	3.3	5.8	12.6	37.6	22.1	13.1	8.7	7.8	4.8	3.5	3.3	9.9	37.6
29	2.9	2.7	2.6	3.9	6.7	7.5	12.1	9.1	14.3	38.1	41.0	21.3	34.9	28.9	54.8	39.7	37.9	10.8	3.1	3.0	3.7	2.1	3.2	6.5	16.3	54.8
30	9.3	15.0	9.0	9.4	13.4	10.8	10.9	68.6	70.3	38.1	65.3	89.2	5.1	8.8	17.0	5.2	4.8	14.4	2.9	3.3	3.7	4.9	6.8	8.0	20.6	89.2
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	710	99%
MEAN	12.3	14.2	13.0	16.3	22.1	28.5	40.5	49.3	41.5	35.4	44.2	46.1	39.4	35.9	36.1	26.2	27.3	18.8	14.4	13.7	12.0	15.5	17.0	14.5		
MAX	56.9	52.7	68.7	95.5	112.6	136.5	275.4	279.7	168.7	195.5	226.3	194.3	108.8	128.5	104.6	66.6	81.5	67.8	64.8	58.2	41.7	114.3	201.2	111.9		



Number of Non-Zero Readings	710	Operational Time	710 HRS
Maximum 1-HR Average	279.7 UG/M3	Operational Uptime	98.6 %
Maximum 24-HR Average	83.6 UG/M3	Monthly Average	26.6 UG/M3
Monthly Calibration	0		
Standard Deviation	31.61		

Entrance TSP ($\mu\text{g}/\text{m}^3$) – April 2019

Day	HOUR																								MEAN	MAX
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	4.4	3.9	4.0	3.2	3.2	6.0	8.6	8.1	23.4	4.2	103.3	181.4	185.2	225.5	156.0	92.4	209.0	65.2	2.0	2.2	2.9	2.5	7.7	5.5	54.6	225.5
2	28.9	2.2	2.5	3.1	2.5	12.7	20.9	165.2	128.2	55.8	115.8	186.7	115.9	164.3	122.1	69.5	56.7	27.0	55.1	82.2	27.2	84.4	22.5	83.8	68.1	186.7
3	15.1	19.2	152.9	224.0	307.1	308.4	548.8	468.6	261.7	473.8	614.6	385.4	191.0	175.3	178.4	112.7	68.0	50.0	44.0	36.7	54.1	9.0	5.6	7.6	196.3	614.6
4	13.5	49.1	24.9	34.8	9.0	51.3	73.9	145.7	111.5	109.9	132.6	145.0	77.4	171.6	106.5	75.6	65.8	38.9	262.3	52.0	51.8	14.8	25.8	17.4	77.6	262.3
5	17.6	19.0	21.5	21.6	31.8	30.2	44.5	52.1	35.5	45.4	189.4	164.1	118.8	88.2	155.9	119.4	69.0	34.3	12.3	81.5	82.7	28.5	74.7	8.9	64.4	189.4
6	3.0	44.9	20.0	13.6	36.1	4.8	44.7	60.9	19.6	13.9	291.3	284.7	135.3	71.7	21.7	62.0	21.5	60.1	16.2	5.1	4.3	2.8	0.6	2.1	51.7	291.3
7	1.8	26.7	3.8	2.1	5.0	0.8	4.2	34.1	57.1	55.2	24.1	54.0	31.1	21.0	92.9	46.3	19.0	195.9	3.0	4.1	1.6	13.4	4.9	8.8	29.6	195.9
8	0.5	0.3	4.9	8.3	30.1	126.9	175.8	158.7	173.6	107.0	96.9	58.5	31.9	90.9	84.3	42.4	X	X	X	X	X	X	X	X	-	-
9	X	X	18.8	61.4	100.8	19.1	82.0	178.4	105.4	71.9	91.0	155.2	224.5	57.8	66.1	95.1	136.8	119.0	66.9	15.0	33.2	124.0	63.1	56.9	88.3	224.5
10	28.0	63.3	7.2	5.2	9.5	4.2	4.7	8.8	5.4	8.0	13.3	112.6	54.7	77.4	99.9	24.8	16.0	34.4	12.8	14.7	3.8	4.8	3.2	5.8	25.9	112.6
11	3.2	3.7	12.2	6.9	8.5	12.2	8.2	11.8	62.8	92.3	51.4	1.0	1.5	1.8	2.8	9.5	1.8	1.3	1.1	1.8	1.1	1.3	1.8	1.7	12.6	92.3
12	2.0	1.6	1.8	2.2	1.8	1.7	0.8	1.9	2.2	7.0	221.3	232.5	261.3	327.3	298.1	117.9	75.7	42.4	50.8	20.6	4.8	8.7	26.1	20.3	72.1	327.3
13	152.5	89.9	72.4	27.7	17.9	23.6	131.0	230.5	132.0	98.8	77.3	149.0	54.4	149.7	49.7	25.2	36.7	16.0	2.4	0.4	3.3	3.0	6.8	3.4	64.7	230.5
14	11.4	8.7	1.3	10.2	18.0	49.7	83.2	34.9	12.5	37.9	72.9	131.9	288.0	82.2	58.6	24.0	19.5	8.2	10.2	1.1	1.3	1.8	13.2	49.5	42.9	288.0
15	62.3	52.2	24.7	43.5	101.7	117.5	161.1	109.8	102.0	54.0	43.1	98.5	56.9	266.8	114.8	84.4	54.0	16.1	12.2	2.7	46.8	90.5	31.1	17.4	73.5	266.8
16	39.5	40.4	40.6	77.0	152.6	194.0	230.9	797.5	556.8	109.7	60.3	90.8	41.2	44.8	24.7	85.5	115.2	30.7	67.3	16.7	4.7	15.0	14.9	10.1	119.2	797.5
17	11.3	3.0	2.0	9.1	15.5	25.1	61.4	147.5	186.6	306.2	211.6	159.9	166.0	169.9	321.2	232.8	121.3	92.8	102.1	102.0	106.0	7.9	12.3	9.2	107.6	321.2
18	16.7	2.3	5.3	8.2	13.6	36.9	57.8	52.9	96.7	98.7	137.5	123.5	165.4	98.3	167.1	103.0	153.7	135.9	8.1	26.9	9.0	12.6	10.2	16.0	64.8	167.1
19	6.1	3.1	2.8	26.2	139.7	27.9	27.2	27.8	42.8	65.6	54.4	1.8	1.0	0.5	1.2	0.9	1.7	2.2	1.5	0.3	0.3	2.0	3.3	3.7	18.5	139.7
20	5.0	5.3	5.6	4.7	4.3	3.9	3.3	6.0	5.9	2.9	54.1	86.6	82.1	68.3	92.1	12.8	63.9	6.9	12.9	19.0	8.0	6.6	8.7	3.8	23.9	92.1
21	2.0	10.1	14.5	3.4	16.6	57.2	93.8	147.1	123.0	89.8	17.9	15.7	11.1	13.5	19.7	20.1	12.7	22.9	14.1	47.7	69.2	128.6	227.3	154.6	55.5	227.3
22	111.1	96.3	104.2	120.0	108.3	99.9	171.2	263.6	115.9	264.9	469.3	152.4	207.5	182.1	159.2	166.6	103.2	137.7	60.3	23.0	50.7	102.9	90.8	71.9	143.0	469.3
23	15.1	13.5	7.2	16.6	8.2	8.4	46.4	65.8	54.3	68.1	96.7	92.3	88.7	105.9	56.4	32.7	91.7	17.6	19.4	8.6	6.7	2.0	12.8	22.8	39.9	105.9
24	21.4	44.8	28.5	50.5	47.7	69.0	28.5	67.9	222.8	137.7	127.5	211.1	386.7	161.6	160.6	134.2	132.2	96.8	62.1	51.8	43.7	102.5	34.9	67.1	103.8	386.7
25	36.5	43.6	33.5	42.5	92.2	177.1	150.9	91.6	94.7	62.5	99.1	67.6	151.6	147.9	66.9	51.9	61.6	37.1	28.6	43.4	40.2	29.8	51.9	17.5	71.7	177.1
26	11.0	30.3	10.2	53.2	60.4	184.6	155.6	74.8	75.5	53.7	83.9	91.1	79.9	54.9	103.0	149.2	109.3	90.5	75.9	33.7	12.8	17.9	7.5	5.1	67.7	184.6
27	6.0	6.9	4.0	4.5	4.5	6.8	11.1	2.8	6.2	8.2	6.3	14.7	3.9	0.8	1.4	1.8	8.6	2.3	2.5	3.1	3.1	61.0	73.5	10.9	10.6	73.5
28	4.3	2.2	11.1	8.6	65.8	17.4	9.7	21.1	18.3	11.8	30.0	61.5	231.1	6.3	14.7	37.5	126.5	60.6	56.5	25.8	8.0	4.5	2.9	2.3	34.9	231.1
29	2.3	2.1	1.8	3.6	6.9	7.7	11.9	13.2	24.8	80.5	109.8	55.4	95.4	62.0	125.5	199.1	537.4	10.4	2.1	2.1	2.5	1.4	2.8	6.3	57.0	537.4
30	8.8	16.2	8.8	9.3	14.5	11.4	11.7	178.6	178.6	73.3	152.7	460.7	4.6	41.8	84.3	4.1	4.7	14.9	1.9	2.2	2.4	3.4	5.5	6.7	54.2	460.7
NO.	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	710	99%
MEAN	22.1	24.3	21.8	30.2	47.8	56.5	82.1	120.9	101.2	89.0	128.3	134.2	118.1	104.3	100.2	74.5	86.0	50.6	36.8	25.0	23.7	30.6	29.2	24.0		
MAX	152.5	96.3	152.9	224.0	307.1	308.4	548.8	797.5	556.8	473.8	614.6	460.7	386.7	327.3	321.2	232.8	537.4	195.9	262.3	102.0	106.0	128.6	227.3	154.6		



Number of 24HR Exceedences	5	Proposed Guideline
Number of Non-Zero Readings	710	
Maximum 1-HR Average	797.5 UG/M3	
Maximum 24-HR Average	196.3 UG/M3	
Monthly Calibration	0	Operational Time
Standard Deviation	87.5	Operational Uptime
		Monthly Average
		710 HRS
		98.6 %
		65.5 UG/M3