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AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
RENO STATION

JOB #: 196-2018-06-93-C

June 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: July 16, 2018

Prepared by:

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Reviewed by:

On behalf of:

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SUMMARY

In June 2018, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Reno Station, near Peace River Oil Sands Area 1, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for non-compliance parameters, as requested by the PRAMP Committee.

All data collected this month was compliant with the requirements outlined in the Air Monitoring Directive (Alberta Environment and Parks, 2016).

The operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

Power Failure: A power failure occurred from hour 18:00 on June 22 to hour 00:00 on June 23, incurring seven hours of downtime on all parameters.

THC/CH₄/NMHC:

- Due to low fuel (H₂) gas pressure and the corrective actions performed to address it, twenty-two hours of downtime were recorded between June 8 and June 9.
- The analyzer flamed out due to a leak in the tubing connected to the fuel gas regulator. Nineteen hours of downtime were recorded between June 12 and June 13 as a result.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3661 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Reno Station						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO ₂ (ppb)	172	48	0	0	0	1	3	23	10.5	ESE	0	1	99.0
TRS (ppb)	-	-	-	-	0.43	2.10	23	3	1.5	WNW	0.66	21	99.0
THC (ppm)	-	-	-	-	1.98	3.51	18	23	2.4	SSW	2.26	18	93.3
CH ₄ (ppm)	-	-	-	-	1.98	3.51	18	23	2.4	SSW	2.26	18	93.3
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	5.6	SE	0.00	1	93.3
RELATIVE HUMIDITY (%)	-	-	-	-	61	94	2	3	0.6	N	87	12	99.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	934	944	16	5	5.3	WSW	943	16	99.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	14.9	31.6	20	16	1.8	N	24.8	20	99.0
STATION TEMPERATURE (°C)	-	-	-	-	21.8	25.0	20	18	2.1	SSE	23.3	20	99.0
VECTOR WS (kph)	-	-	-	-	3.0	19.4	25	13	-	SW	10.9	11	99.0
VECTOR WD (sec)	-	-	-	-	251 (WSW)	-	-	-	-	-	-	-	99.0

**SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY**

Reno Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2018	June

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES	NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION	
SO ₂	99.0	0.001 ppm	0	0.000 ppm	0	
TRS	99.0	0.002 ppm	-	0.001 ppm	-	
THC	93.3	3.51 ppm	-	2.26 ppm	-	
CH ₄	93.3	3.51 ppm	-	2.26 ppm	-	
NMHC	93.3	0.00 ppm	-	0.00 ppm	-	
RH	99.0	94 %	-	87 %	-	
BP	99.0	944 mb	-	943 mb	-	
Ambient TPX	99.0	31.6 °C	-	24.8 °C	-	
Station TPX	99.0	25.0 °C	-	23.3 °C	-	
Wind Speed	99.0	19.4 kph	-	10.9 kph	-	
Wind Direction	99.0	-	-	-	-	

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

Measured concentrations of sulphur dioxide were below the 1-hour AAAQO of 172 ppb.

SO₂ 24-Hour Exceedances

Measured concentrations of sulphur dioxide were below the 24-hour AAAQO of 48.0 ppb.

In accordance with EPEA and the Substance Release Regulation.

In accordance with A Guide to Release Reporting and the Alberta Ambient Air Quality Objectives and Guidelines Summary.

TABLE OF CONTENTS

<u>Title</u>	<u>Page</u>
SUMMARY	2
MONTHLY CONTINUOUS DATA SUMMARY REPORT	3
SOUR GAS SUMMARY REPORT	4
EXCEEDANCE SUMMARY REPORT	5
TABLE OF CONTENTS	6
<hr/>	
1.0 Discussion	8
<hr/>	
2.0 Project Personnel	11
<hr/>	
3.0 Plant Monthly Required AMD Summary	11
<hr/>	
4.0 Calculations and Results	11
<hr/>	
5.0 Methods and Procedures	12
<hr/>	
Appendix I	Continuous Monitoring Data Results
<hr/>	
	Sulphur Dioxide
	16
	Total Reduced Sulphur
	22
	Total Hydrocarbon
	28
	Methane
	34
	Non-Methane Hydrocarbon
	40
	Wind Speed
	46
	Wind Direction
	51
	Relative Humidity
	54
	Barometric Pressure
	57
	Ambient Temperature
	60
	Station Temperature
	63
Appendix II	Equipment Calibration Results
<hr/>	
	Sulphur Dioxide
	67
	Total Reduced Sulphur
	70
	Total Hydrocarbon
	73
	Wind System
	77
	Calibrators
	79

	Calibration Gases	82
Appendix III	Maximum Instantaneous Data	86
Appendix IV	Report Certification Form	99
Appendix V	Data Validation Certification Form	101

1.0 Discussion

This monthly report consists of continuous monitoring results for the following parameters: Sulphur Dioxide (SO₂), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH₄), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

The sample inlet filter for all continuous air analyzers are replaced before the calibration begins. The sample manifold is cleaned during the site visit each month.

Control checks, consisting of a zero and span, are conducted daily on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinders) is used for zero checks, and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibrations are done a minimum of once a month for each continuous air monitor. An additional calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

Time during the first multi-point calibration is not considered downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the additional calibration is considered as downtime (Data is flagged as C1).

Only one zero/span check is run per day. Time during the zero/span check is not considered as downtime (Data is flagged as S). If an extra zero/span check is performed, the time during the additional check is considered as downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time, at a minimum, for each monthly monitoring period.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Data contained in this monthly report has undergone the verification and validation based on the requirements of the AMD Chapter 6: Ambient Data Quality (December, 2016). The descriptions of the data verification and validation process can be found in Section 5 of this report. Instantaneous data, where applicable, is provided for reference purposes and has not undergone zero correction. The minimum and maximum statistics are highlighted in the data table and are for reference only. The highlighted cells are based on the software's interpretation of the exact position of the minimum or maximum value. The visual presentation of these statistics may not be the obvious choice in a data range due to rounding, truncating or analyzer specifications.

Hourly/minute data have been reviewed based on daily zero/span results and multi-point calibration results. Data may be considered invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor occurs (greater than 10%).

SULPHUR DIOXIDE (SO₂)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.
- The routine monthly calibration was performed on June 13.

TOTAL REDUCED SULPHUR (TRS)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.
- The routine monthly calibration was performed on June 13.
- The zero-span system oven temperature was adjusted on June 14, causing the analyzer to span outside the lower acceptance limit on June 15. The expected span value was updated later on June 15 after the oven temperature had stabilized. This event did not impact data quality.

TOTAL HYDROCARBONS (THC), METHANE (CH₄) and NON-METHANE HYDROCARBONS (NMHC)

- Operational time for the monitoring period was 93.3%, equivalent to forty-eight hours of downtime.
- The fuel gas (H₂) pressure ran low on June 8, prompting a site visit on June 9 where the gas cylinder was replaced by a Reno site operator. An additional zero-span response check was completed afterwards as a quality check. Twenty-two hours of downtime were recorded due to this event.
- The analyzer started recording unusually low concentrations on June 12, prompting a site visit on June 13. Upon arrival, the analyzer was found to have flamed out due to a leak in the tubing connected to the fuel gas regulator. The leak was repaired, the fuel gas cylinder was replaced and the analyzer was relit. A successful routine monthly calibration was subsequently completed. Nineteen hours of downtime were recorded due to this event.
- A power failure occurred from hour 18:00 on June 22 to hour 00:00 on June 23, incurring seven hours of downtime.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month. A trigger test was performed during the routine monthly calibration on June 13 to assess the effectiveness of the canister system.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.
- Wind data is reported as vector wind speed and vector wind direction. Wind direction is defined as the direction from which the wind is blowing from and is measured in degrees from true north.

RELATIVE HUMIDITY (RH)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.

STATION TEMPERATURE (StnTPX)

- Operational time for the monitoring period was 99.0%, equivalent to seven hours of downtime. These were incurred due to a power failure that occurred from hour 18:00 on June 22 to hour 00:00 on June 23.
- The thermostat was adjusted during the site visits on June 9 and June 13 to address temperature fluctuations caused by weather conditions.

2.0 Project Personnel

Karla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technician was Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

All data collected this month was compliant with the requirements outlined in the Air Monitoring Directive (Alberta Environment and Parks, 2016).

The operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the methods described in the AMD, 2016.

5.0 Methods and Procedures

The following methods and procedures were used to complete the monitoring program:

Maxxam AIR SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring

Maxxam AIR SOP-00013: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A UV Fluorescent Analyzer

Total Reduced Sulphur - Thermo 43i - TLE UV Fluorescent Analyzer

Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer

Wind System - RM Young Unit

Relative Humidity - RM Young Unit

Barometric Pressure - Met One Unit

Ambient Temperature - RM Young Unit

Datalogger - ESC 8832

The following steps were used to complete the data verification and validation process:

Level 0 Preliminary Verification

Level 0 data are raw data obtained directly from the data acquisition system (DAS). Under the step of Level 0, these data undergo a certain amount of manual or automated screening and flagging. It included a) identification of periods of missing data; b) verification of time stamps against reference time; c) verification that instrument diagnostics/datalogger flags indicate normal operation; d) comparison of data to upper and lower limits; e) rate of change flagging indicating that data changed too rapidly or not at all; and f) verification that zero, span and multipoint performance checks are within specifications. This level of verification is performed on a daily basis.

Level 1 Primary Validation

Validation actions under the step of Level 1 include a) review of all screening flags assigned during preliminary verification; b) review of all supporting site information and documentation; c) review of operational acceptance limits for each parameter/analyzer; d) review of daily zero/span and monthly calibration results for all gaseous parameters; and e) application of any necessary adjustments to data (e.g. baseline adjustments, below zero adjustments). This level of validation is performed on a monthly basis.

Level 2 Final Validation

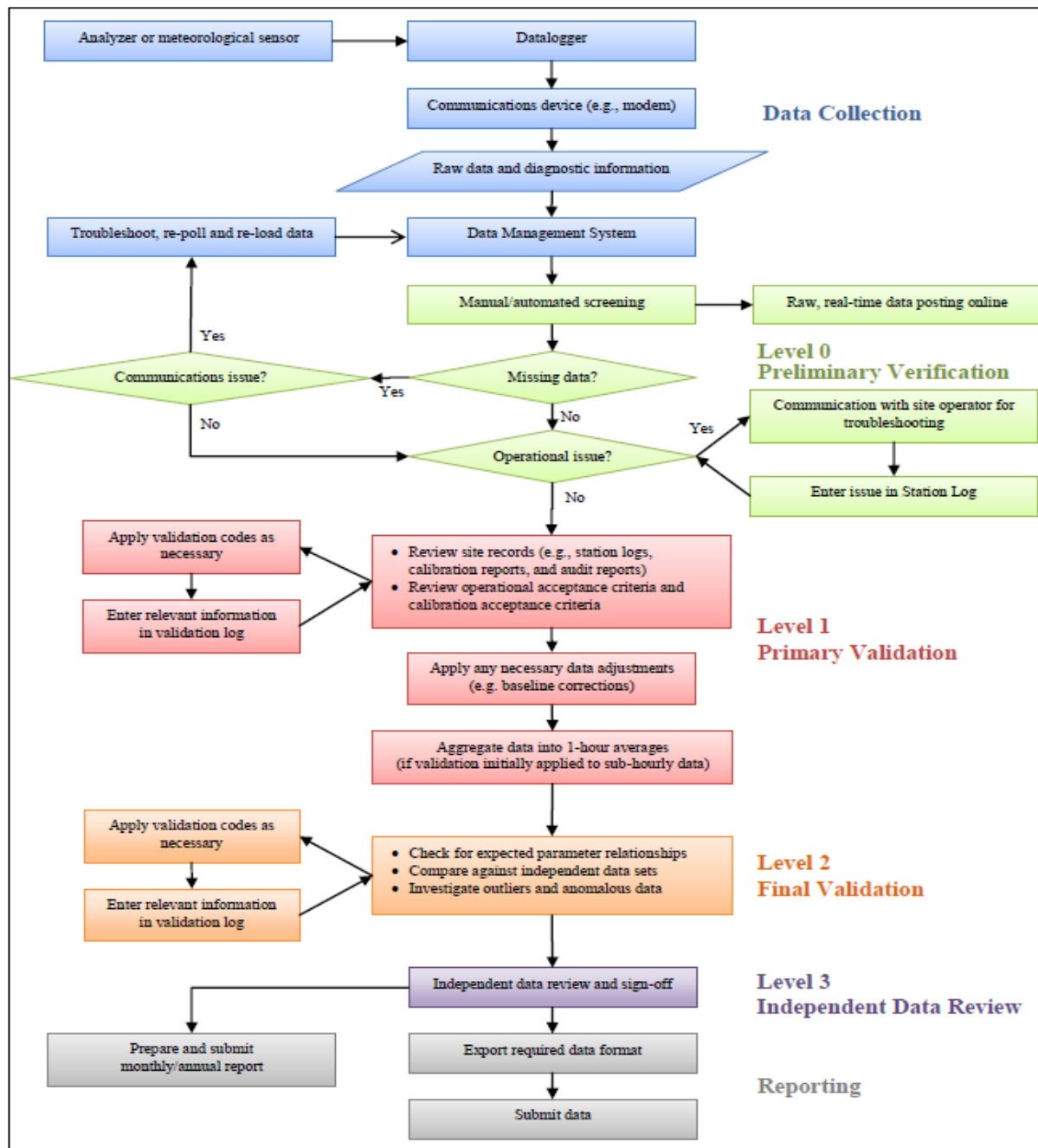
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

Level 3 validation is the last step of data review, and it is completed by an individual that is independent of both field operations and primary data validation. A final independent QA review and endorsement is performed during this step before data is submitted to Alberta Environment.

Post-Final Validation

The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: Air Monitoring Directive (December 2016), Chapter 6, Ambient Data Quality; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
3	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	24
4	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
5	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
6	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
20	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
21	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
22	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	P	P	P	P	P	0	0	0	18
23	P	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
24	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
25	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
26	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
27	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
28	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
29	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	24
HOURLY MAX	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
HOURLY AVG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

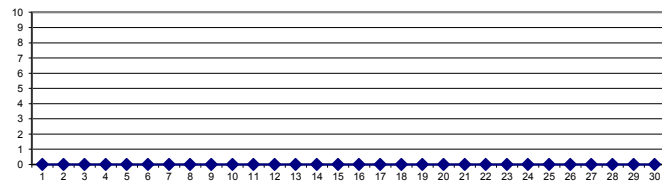
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	ppb	24-HR	48	ppb
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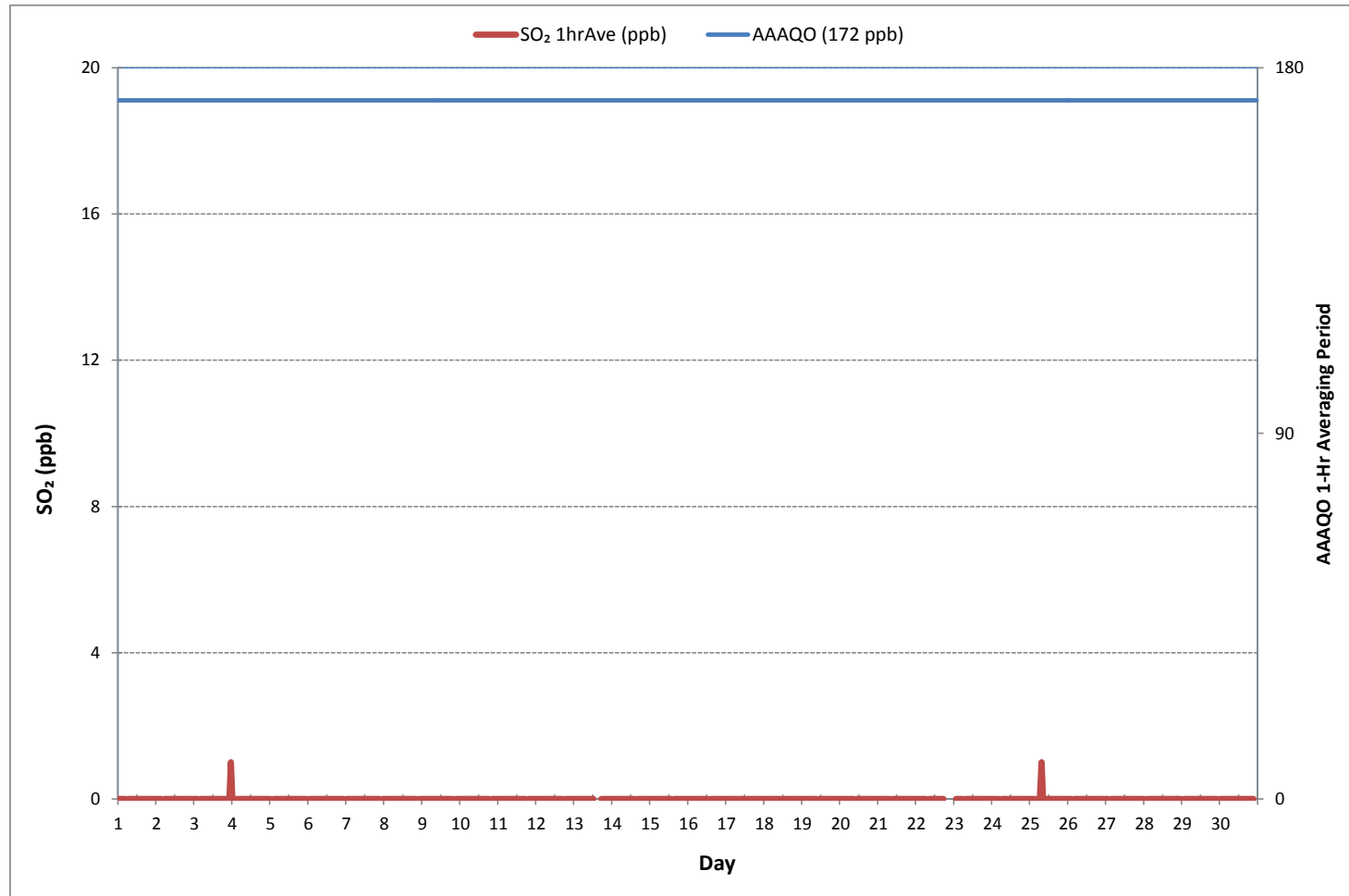
24 HR AVERAGES June 2018



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	2
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 23 ON DAY 3
MAXIMUM 24-HR AVERAGE:	0 ppb ON DAY 1
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	713 hrs
AMD OPERATION UPTIME:	99.0 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)



Wind: PRAMP_RENO
 Poll.: PRAMP_RENO-SO₂[ppb]
 Monthly: 18/06
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

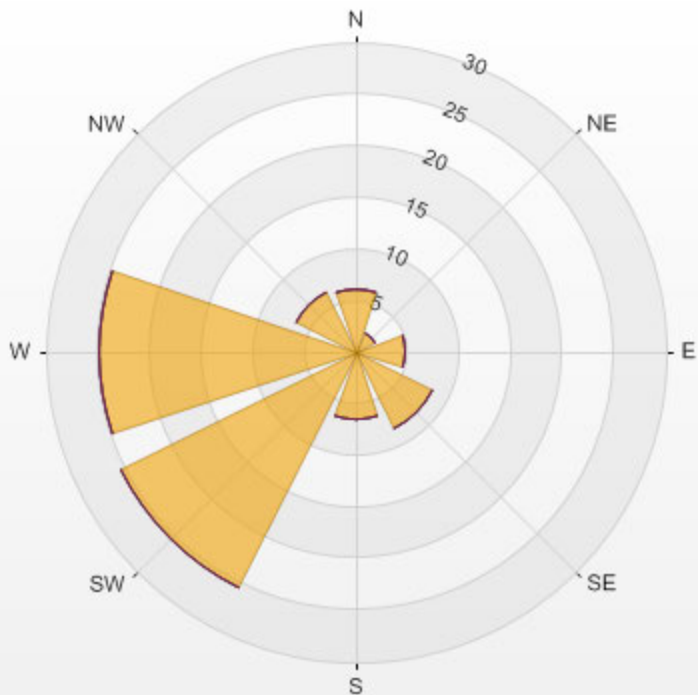
Calm: 15.19%

Calm Avg: 0.02 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	6.2	0.0	0.0	0.0	0.0	6.2
NE	2.1	0.0	0.0	0.0	0.0	2.1
E	4.9	0.0	0.0	0.0	0.0	4.9
SE	8.3	0.0	0.0	0.0	0.0	8.3
S	6.5	0.0	0.0	0.0	0.0	6.5
SW	25.5	0.0	0.0	0.0	0.0	25.5
W	24.9	0.0	0.0	0.0	0.0	24.9
NW	6.5	0.0	0.0	0.0	0.0	6.5
Summary	84.8	0.0	0.0	0.0	0.0	84.8

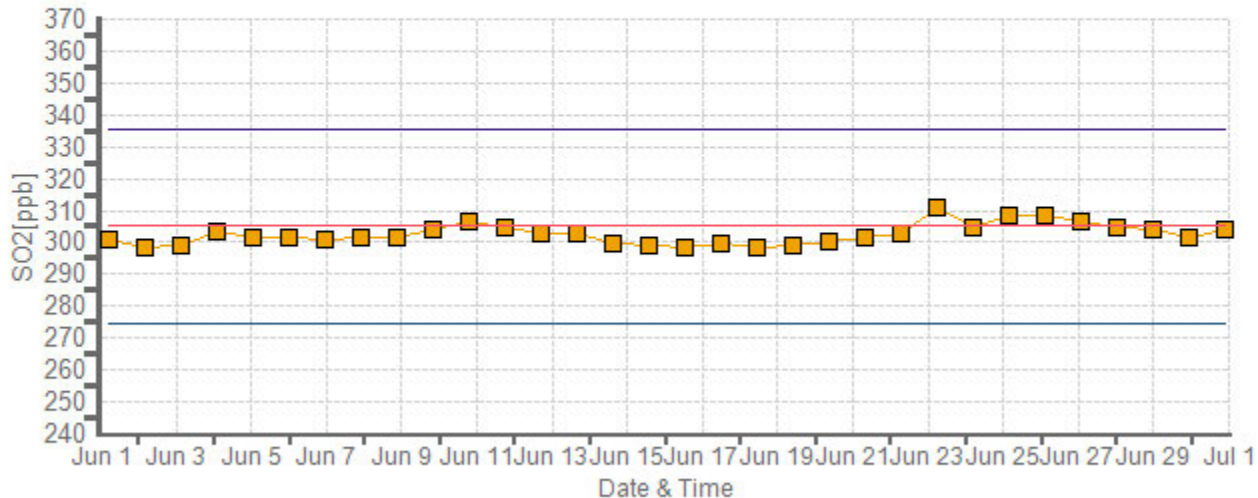
% Icon	Classes (ppb)	85	0-3	0	3-10	0	10-85	0	85-170	0	>170.0
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PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.19% Calm Poll Avg: 0.02[ppb]



SO₂[ppb] Calibration: PRAMP_RENO Monthly: 18/06 Type: Span

Span Meas Span Ref Span Low Span High



TOTAL REDUCED SULPHUR

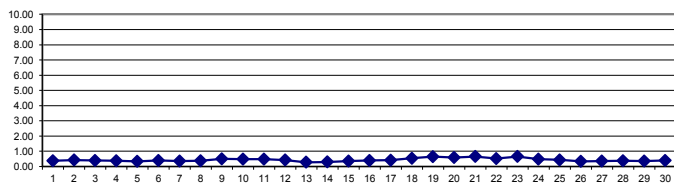
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY 1	0.35	0.38	0.39	0.37	0.38	S	0.39	0.36	0.37	0.37	0.38	0.37	0.36	0.36	0.37	0.35	0.34	0.34	0.38	0.37	0.39	0.44	0.43	0.47	0.34	0.47	0.38	24	
2	0.46	0.76	0.76	0.61	S	0.54	0.46	0.43	0.43	0.41	0.37	0.37	0.36	0.35	0.36	0.36	0.36	0.36	0.33	0.33	0.35	0.35	0.35	0.36	0.33	0.76	0.43	24	
3	0.41	0.50	0.48	S	0.51	0.61	0.49	0.44	0.40	0.38	0.36	0.35	0.36	0.35	0.35	0.33	0.34	0.35	0.34	0.33	0.35	0.35	0.34	0.38	0.33	0.61	0.40	24	
4	0.41	0.41	S	0.42	0.41	0.40	0.39	0.41	0.42	0.40	0.43	0.41	0.36	0.35	0.34	0.33	0.32	0.32	0.31	0.31	0.33	0.34	0.35	0.41	0.31	0.43	0.37	24	
5	0.36	S	0.44	0.39	0.39	0.38	0.39	0.34	0.34	0.33	0.32	0.31	0.33	0.32	0.31	0.33	0.32	0.33	0.32	0.34	0.33	0.34	0.33	0.34	0.35	0.31	0.44	0.35	24
6	S	0.36	0.41	0.35	0.52	0.54	0.39	0.50	0.42	0.36	0.36	0.34	0.37	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.33	0.35	0.42	0.51	S	0.33	0.54	0.39	24
7	0.47	0.41	0.38	0.35	0.36	0.36	0.35	0.34	0.33	0.36	0.34	0.35	0.35	0.34	0.34	0.32	0.32	0.32	0.33	0.41	0.43	0.39	S	0.42	0.32	0.47	0.36	24	
8	0.38	0.40	0.40	0.40	0.45	0.53	0.48	0.38	0.38	0.34	0.34	0.33	0.32	0.34	0.31	0.32	0.32	0.30	0.31	0.34	0.38	S	0.42	0.37	0.30	0.53	0.37	24	
9	0.38	0.38	0.42	0.46	0.46	0.73	0.70	0.55	0.63	0.59	0.56	0.54	0.50	0.48	0.44	0.45	0.44	0.43	0.41	0.42	S	0.47	0.45	0.49	0.38	0.73	0.49	24	
10	0.47	0.56	0.53	0.58	0.58	0.57	0.54	0.47	0.47	0.46	0.45	0.45	0.44	0.43	0.42	0.43	0.49	0.46	0.45	S	0.49	0.44	0.44	0.46	0.42	0.58	0.48	24	
11	0.45	0.53	0.59	0.62	0.53	0.57	0.61	0.52	0.48	0.49	0.48	0.49	0.45	0.44	0.46	0.41	0.44	0.42	S	0.43	0.41	0.42	0.44	0.42	0.41	0.62	0.48	24	
12	0.43	0.47	0.47	0.46	0.43	0.45	0.44	0.45	0.43	0.45	0.44	0.44	0.43	0.42	0.44	0.44	0.43	S	0.44	0.43	0.39	0.36	0.32	0.30	0.30	0.47	0.42	24	
13	0.28	0.27	0.26	0.25	0.27	0.26	0.23	0.21	0.20	0.28	C	C	C	C	C	0.36	S	0.34	0.31	0.30	0.30	0.28	0.26	0.30	0.20	0.36	0.28	24	
14	0.33	0.28	0.28	0.27	0.27	0.27	0.29	0.28	0.29	0.29	0.28	0.29	0.29	0.29	0.30	S	0.35	0.31	0.31	0.32	0.33	0.33	0.32	0.36	0.27	0.36	0.30	24	
15	0.38	0.35	0.33	0.36	0.40	0.37	0.39	0.41	0.38	0.34	0.34	0.33	0.33	0.33	S	0.34	0.32	0.31	0.32	0.33	0.34	0.34	0.40	0.36	0.31	0.41	0.35	24	
16	0.41	0.46	0.48	0.43	0.39	0.47	0.48	0.42	0.40	0.39	0.40	0.37	0.34	S	0.35	0.33	0.31	0.31	0.32	0.33	0.37	0.43	0.41	0.40	0.31	0.48	0.39	24	
17	0.43	0.42	0.45	0.44	0.56	0.63	0.50	0.45	0.37	0.38	0.36	0.35	S	0.35	0.34	0.33	0.32	0.31	0.31	0.33	0.40	0.50	0.53	0.50	0.31	0.63	0.42	24	
18	0.58	0.60	0.52	0.59	0.90	0.89	1.10	0.73	0.57	0.48	0.41	S	0.38	0.35	0.35	0.34	0.35	0.36	0.36	0.37	0.41	0.51	0.54	0.68	0.34	1.10	0.54	24	
19	0.76	0.96	1.14	0.90	0.94	1.08	0.75	0.62	0.52	0.46	S	0.41	0.40	0.39	0.40	0.40	0.40	0.40	0.41	0.47	0.55	0.59	0.65	1.26	0.39	1.26	0.65	24	
20	0.80	0.54	0.57	0.58	0.89	1.30	1.34	0.58	0.47	S	0.43	0.39	0.38	0.38	0.37	0.36	0.37	0.35	0.40	0.54	0.63	0.97	0.51	0.39	0.35	1.34	0.59	24	
21	0.51	1.17	1.83	1.67	0.71	0.60	0.70	1.10	S	0.85	0.57	0.48	0.41	0.36	0.34	0.35	0.33	0.34	0.34	0.37	0.50	0.53	0.56	0.51	0.33	1.83	0.66	24	
22	0.83	0.61	0.56	0.60	1.06	0.57	0.49	S	0.56	0.54	0.51	0.40	0.39	0.36	0.36	0.35	0.34	0.34	P	P	P	P	P	P	0.34	1.06	0.52	18	
23	P	1.49	1.66	2.10	0.94	1.01	S	0.86	0.51	0.42	0.37	0.35	0.34	0.33	0.32	0.31	0.32	0.32	0.33	0.33	0.38	0.47	0.55	0.61	0.31	2.10	0.65	23	
24	1.10	0.75	0.84	0.86	0.68	S	0.54	0.51	0.46	0.45	0.39	0.35	0.34	0.33	0.35	0.35	0.35	0.34	0.36	0.36	0.39	0.38	0.38	0.33	1.10	0.49	24		
25	0.43	0.47	0.54	0.56	S	0.69	0.68	0.54	0.54	0.58	0.46	0.45	0.43	0.35	0.35	0.32	0.31	0.30	0.29	0.30	0.31	0.35	0.31	0.34	0.29	0.69	0.43	24	
26	0.33	0.46	0.40	S	0.45	0.44	0.32	0.32	0.32	0.32	0.31	0.32	0.33	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.34	0.32	0.39	0.38	0.31	0.46	0.34	24	
27	0.43	0.38	S	0.41	0.43	0.45	0.40	0.37	0.34	0.33	0.33	0.31	0.32	0.33	0.32	0.32	0.31	0.32	0.32	0.34	0.35	0.34	0.38	0.43	0.31	0.45	0.36	24	
28	0.45	S	0.46	0.48	0.51	0.54	0.43	0.40	0.37	0.35	0.35	0.32	0.31	0.31	0.31	0.31	0.31	0.30	0.31	0.32	0.33	0.33	0.36	0.38	0.30	0.54	0.37	24	
29	S	0.42	0.41	0.41	0.40	0.35	0.34	0.34	0.38	0.41	0.39	0.34	0.32	0.31	0.29	0.28	0.33	0.33	0.32	0.32	0.32	0.32	0.39	S	0.28	0.42	0.35	24	
30	0.48	0.48	0.41	0.41	0.44	0.49	0.39	0.41	0.36	0.35	0.34	0.34	0.34	0.33	0.33	0.33	0.33	0.33	0.36	0.39	0.39	0.44	S	0.47	0.33	0.49	0.39	24	
HOURLY MAX	1.10	1.49	1.83	2.10	1.06	1.30	1.34	1.10	0.63	0.85	0.57	0.54	0.50	0.48	0.46	0.45	0.49	0.46	0.45	0.54	0.63	0.97	0.65	1.26					
HOURLY AVG	0.49	0.55	0.59	0.58	0.55	0.57	0.52	0.47	0.42	0.42	0.40	0.38	0.37	0.36	0.35	0.35	0.35	0.34	0.35	0.36	0.39	0.42	0.42	0.45					

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

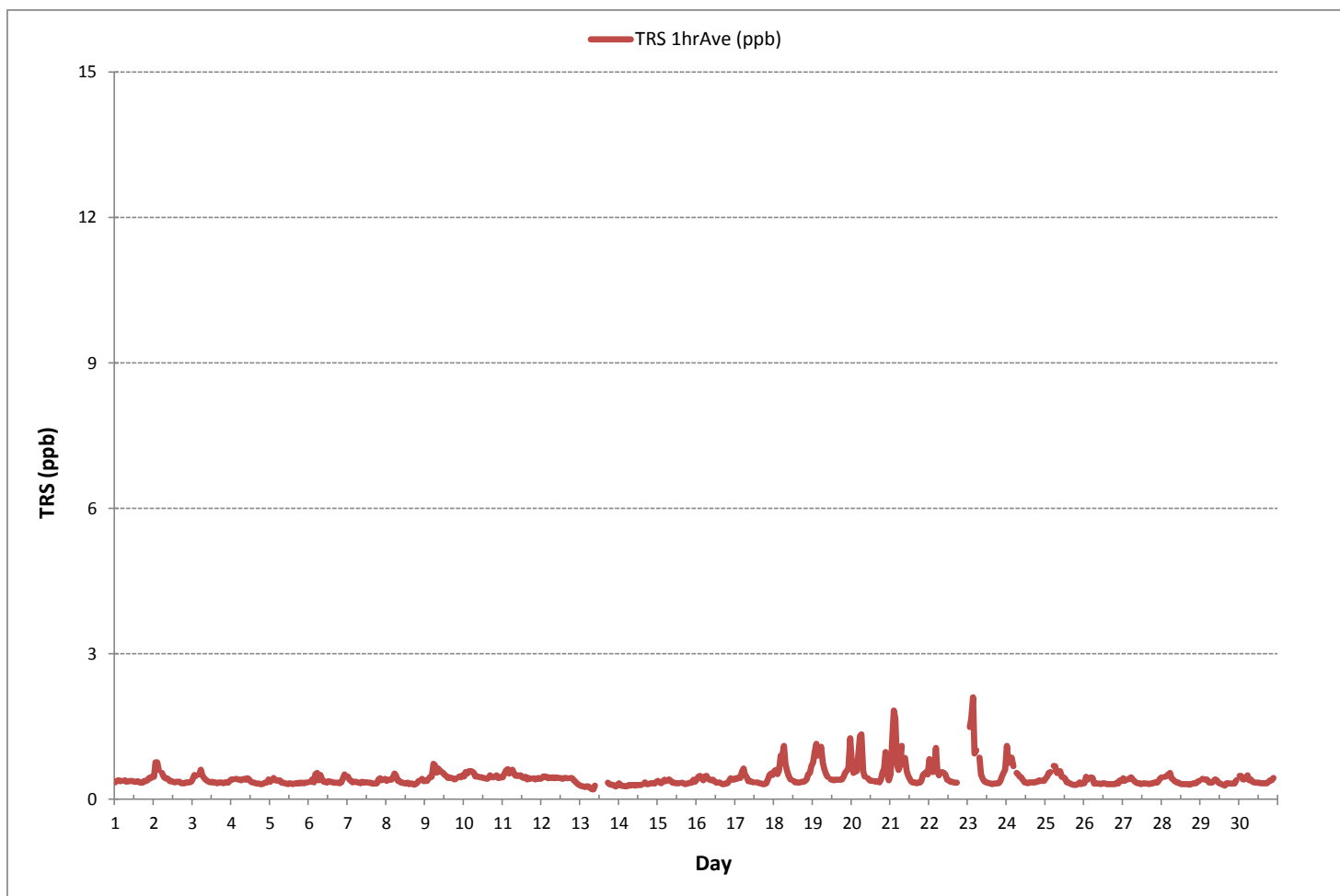
24 HR AVERAGES June 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676
MINIMUM 1-HR AVERAGE:	0.20 ppb @ HOUR 8 ON DAY 13
MAXIMUM 1-HR AVERAGE:	2.10 ppb @ HOUR 3 ON DAY 23
MAXIMUM 24-HR AVERAGE:	0.66 ppb ON DAY 21
IZS CALIBRATION TIME:	32 hrs OPERATIONAL TIME: 713 hrs
MONTHLY CALIBRATION TIME:	5 hrs AMD OPERATION UPTIME: 99.0 %
STANDARD DEVIATION:	0.19 MONTHLY AVERAGE: 0.43 ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



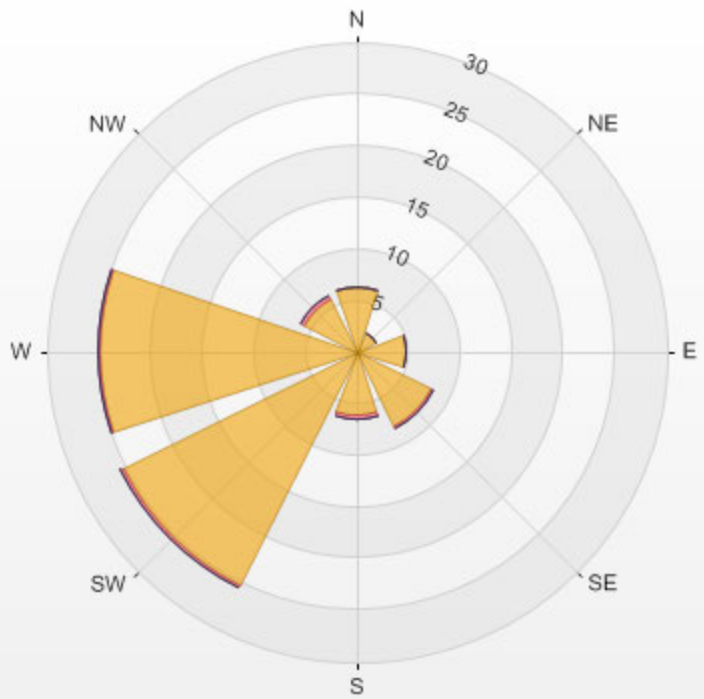
Wind: PRAMP_RENO
 Poll.: PRAMP_RENO-TRS[ppb]
 Monthly: 18/06
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 15.24% Calm Avg: 0.55 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	6.4	0.0	0.0	0.0	6.4
NE	2.1	0.0	0.0	0.0	2.1
E	4.9	0.0	0.0	0.0	4.9
SE	8.1	0.2	0.0	0.0	8.3
S	6.2	0.3	0.0	0.0	6.5
SW	25.3	0.3	0.0	0.0	25.6
W	24.9	0.2	0.0	0.0	25.0
NW	5.8	0.3	0.0	0.0	6.1
Summary	83.6	1.2	0.0	0.0	84.8

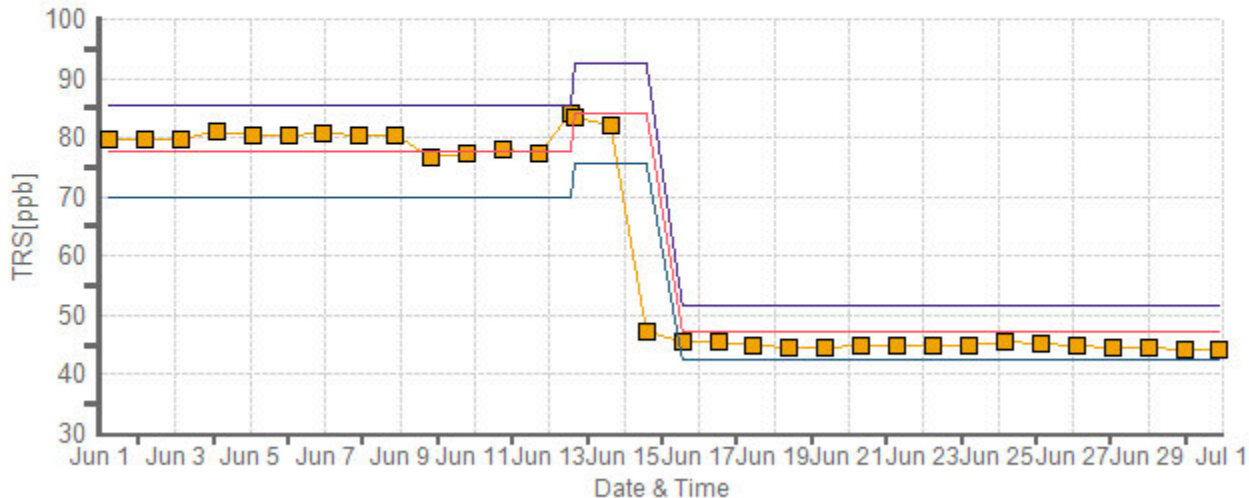
% Icon	Classes (ppb)	84	0-1	1	1-3	0	3-10	0	>10.0
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PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.24% Calm Poll Avg: 0.55[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 18/06 Type: Span

■ Span Meas
 — Span Ref
 — Span Low
 — Span High



TOTAL HYDROCARBON



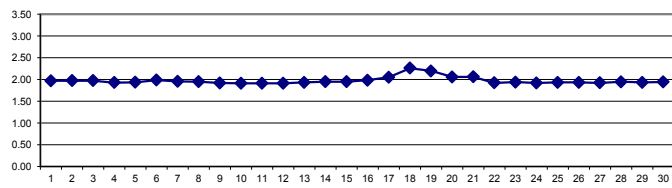
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	1.94	1.94	1.94	1.94	1.94	S	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.95	2.06	2.21	2.26	1.93	2.26	1.97	24	
2	2.06	2.25	2.21	2.05	S	2.23	1.95	1.95	1.95	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.92	1.91	1.92	1.93	1.93	1.91	2.25	1.98	24	
3	1.93	1.95	1.95	S	2.09	2.61	2.10	1.95	1.94	1.94	1.93	1.92	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.95	1.92	2.61	1.97	24	
4	1.94	1.94	S	1.93	1.93	1.94	1.94	1.95	1.98	1.99	1.93	1.92	1.93	1.92	1.92	1.92	1.91	1.91	1.92	1.92	1.91	1.92	1.92	1.94	1.91	1.99	1.93	24	
5	1.95	S	1.96	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.93	1.94	1.95	1.94	1.95	1.92	1.96	1.94	24	
6	S	1.98	1.99	1.97	2.02	2.03	2.05	1.99	1.96	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.92	1.99	2.25	2.37	S	1.92	2.37	1.99	24	
7	2.30	2.15	2.04	1.96	1.94	1.95	1.93	1.93	1.93	1.93	1.94	1.93	1.92	1.92	1.92	1.93	1.92	1.91	1.92	1.91	1.91	1.90	S	1.90	1.90	2.30	1.96	24	
8	1.92	1.91	1.91	1.91	2.40	1.95	1.95	1.93	1.92	1.91	1.91	1.91	1.91	1.90	X	X	X	X	X	X	X	X	X	X	1.90	2.40	1.95	14	
9	X	X	X	X	X	X	X	X	X	X	S1	S1	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.91	1.95	1.92	12
10	1.91	1.92	1.92	1.92	1.92	1.93	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.90	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.90	1.91	1.90	1.94	1.92	24
11	1.91	1.91	1.92	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.91	24
12	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	X	X	X	X	X	X	X	X	X	X	1.91	1.92	1.92	15	
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	1.93	1.92	S	1.93	1.93	1.93	1.94	1.93	1.94	1.94	1.92	1.94	1.93	14	
14	1.94	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.95	1.96	1.95	1.94	1.93	1.93	1.93	S	1.94	1.94	1.93	1.93	1.94	1.95	1.95	2.12	1.93	2.12	1.95	24	
15	2.16	1.92	1.92	1.93	2.12	2.01	1.93	1.94	1.96	1.93	1.94	1.93	1.92	1.92	S	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.95	1.96	1.92	2.16	1.95	24	
16	2.13	2.09	2.21	2.03	1.99	1.97	1.96	1.96	1.95	1.94	1.93	1.93	1.92	S	1.93	1.92	1.92	1.92	1.92	1.92	1.93	2.06	2.05	2.06	1.92	2.21	1.98	24	
17	2.13	2.21	2.25	2.12	2.13	2.14	2.02	2.01	1.99	1.98	1.97	1.96	S	1.96	1.94	1.92	1.92	1.92	1.92	1.92	2.00	2.19	2.34	2.29	1.92	2.34	2.05	24	
18	2.45	2.52	2.52	2.26	2.43	2.81	2.22	2.17	2.06	1.97	1.94	S	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.89	2.25	2.99	2.73	3.51	1.89	3.51	2.26	24	
19	3.33	2.30	2.74	3.10	2.64	2.15	2.11	2.01	1.98	1.96	S	1.93	1.93	1.92	1.93	1.91	1.90	1.93	1.90	1.93	2.04	2.25	2.15	2.50	1.90	3.33	2.20	24	
20	2.22	2.12	2.22	2.26	2.66	2.35	2.13	2.04	1.99	S	1.95	1.95	1.93	1.92	1.91	1.90	1.90	1.90	1.92	1.97	2.08	2.09	1.98	1.95	1.90	2.66	2.06	24	
21	2.14	2.31	2.35	2.42	2.24	2.13	2.00	2.04	S	2.04	2.02	2.00	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.05	2.15	2.06	1.94	2.42	2.06	24	
22	2.08	2.00	1.92	1.90	1.92	1.98	1.93	S	1.92	1.93	1.95	1.90	1.90	1.89	1.88	1.87	1.87	1.87	P	P	P	P	P	P	1.87	2.08	1.92	18	
23	P	1.94	1.94	1.95	1.93	1.92	S	1.93	1.92	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.89	1.89	1.89	1.90	1.92	1.93	2.26	2.21	1.89	2.26	1.94	23	
24	1.95	1.94	1.95	1.94	1.95	S	1.94	1.93	1.91	1.90	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.94	1.94	1.90	1.95	1.92	24	
25	1.95	1.95	1.96	1.97	S	1.98	1.98	1.97	1.98	1.96	1.95	1.94	1.92	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.93	1.90	1.98	1.93	24	
26	1.97	1.98	2.01	S	2.01	1.99	1.97	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.91	2.01	1.93	24	
27	1.92	1.92	S	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.94	1.92	1.94	1.92	24
28	1.94	S	1.94	1.94	1.96	1.96	1.96	1.96	1.95	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.93	2.11	2.10	1.91	2.11	1.95	24	
29	S	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.96	1.94	1.93	1.93	1.92	1.92	1.93	1.92	1.92	1.92	1.91	1.91	1.92	1.92	S	1.91	1.96	1.93	24
30	2.03	1.94	1.94	1.95	2.09	2.08	1.94	1.94	1.94	1.94	1.94	1.95	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	S	1.91	1.91	2.09	1.94	24	
HOURLY MAX	3.33	2.52	2.74	3.10	2.66	2.81	2.22	2.17	2.06	2.04	2.02	2.00	1.96	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.97	2.25	2.99	2.73	3.51				
HOURLY AVG	2.08	2.03	2.06	2.04	2.07	2.07	1.98	1.96	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.95	2.02	2.05	2.08				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

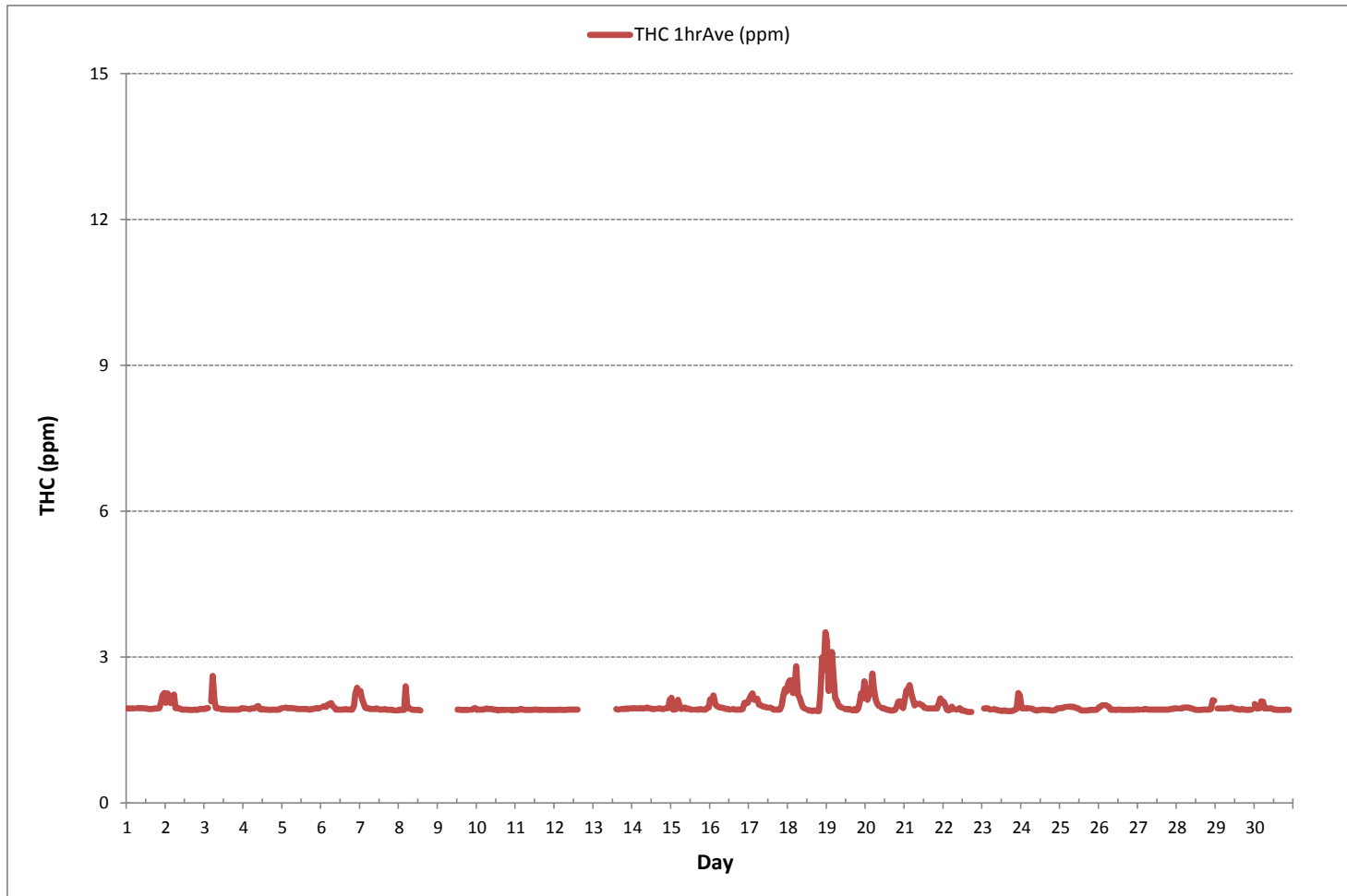
24 HR AVERAGES June 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	638			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	15	ON DAY 22
MAXIMUM 1-HR AVERAGE:	3.51 ppm	@ HOUR	23	ON DAY 18
MAXIMUM 24-HR AVERAGE:	2.26 ppm			ON DAY 18
IZS CALIBRATION TIME:	30 hrs	OPERATIONAL TIME:	672 hrs	
MONTHLY CALIBRATION TIME:	4 hrs	AMD OPERATION UPTIME:	93.3 %	
STANDARD DEVIATION:	0.16	MONTHLY AVERAGE:	1.98 ppm	

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



Wind: PRAMP_RENO
 Poll.: PRAMP_RENO-THC55[ppm]
 Monthly: 18/06
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 15.05%

Calm Avg: 2.11 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	5.6	0.0	0.0	0.0	0.0	5.6
NE	1.6	0.0	0.0	0.0	0.0	1.6
E	5.0	0.0	0.0	0.0	0.0	5.0
SE	7.7	0.8	0.0	0.0	0.0	8.5
S	3.9	2.8	0.2	0.0	0.0	6.9
SW	22.4	3.6	0.2	0.0	0.0	26.2
W	25.1	0.0	0.0	0.0	0.0	25.1
NW	6.1	0.0	0.0	0.0	0.0	6.1
Summary	77.4	7.2	0.3	0.0	0.0	85.0

% Icon Classes (ppm)

77



0-2

7



2-3

0



3-5

0



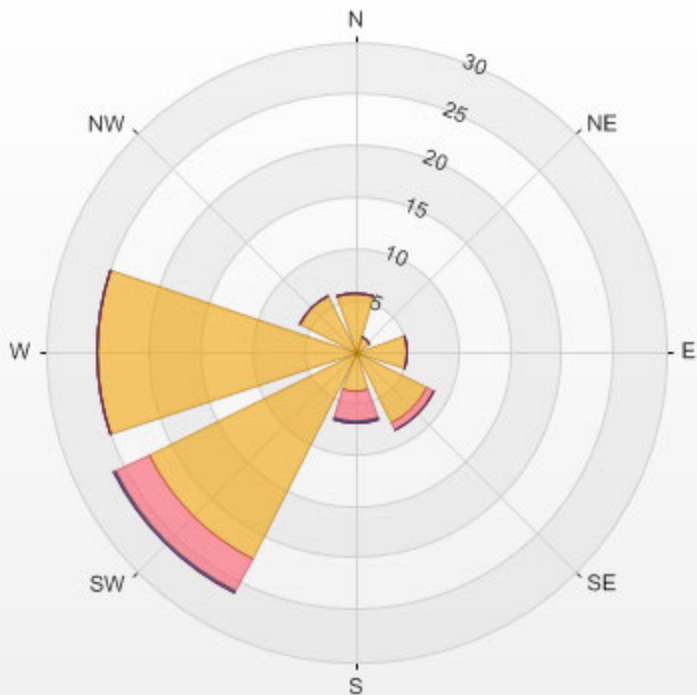
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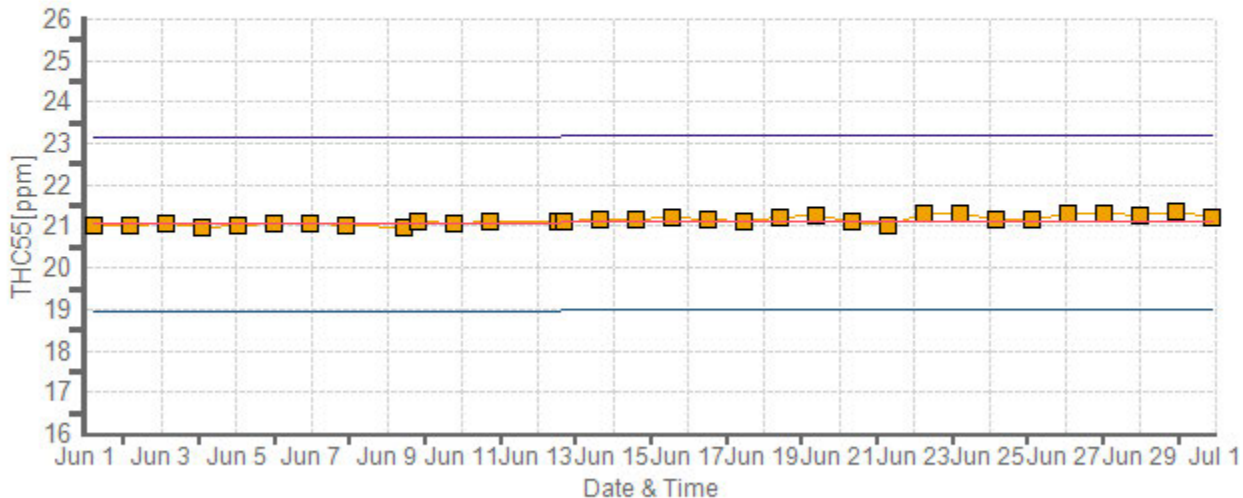
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PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.05% Calm Poll Avg: 2.11[ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 18/06 Type: Span

Span Meas Span Ref Span Low Span High



METHANE



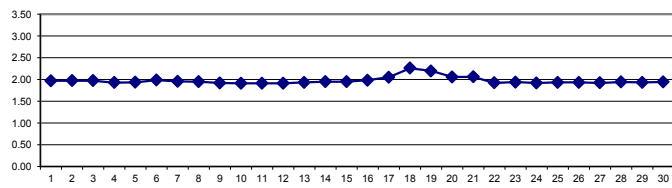
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	1.94	1.94	1.94	1.94	1.94	S	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.94	1.93	1.94	1.95	2.06	2.20	2.26	1.93	2.26	1.97	24	
2	2.06	2.25	2.21	2.05	S	2.23	1.95	1.95	1.95	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.93	1.93	1.91	2.25	1.98	24	
3	1.93	1.95	1.95	S	2.09	2.61	2.10	1.95	1.94	1.94	1.93	1.92	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.95	1.92	2.61	1.97	24	
4	1.94	1.94	S	1.93	1.93	1.94	1.94	1.95	1.98	1.99	1.93	1.92	1.93	1.92	1.92	1.92	1.91	1.91	1.92	1.92	1.91	1.92	1.92	1.94	1.91	1.99	1.93	24	
5	1.95	S	1.96	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.93	1.94	1.95	1.94	1.95	1.92	1.96	1.94	24	
6	S	1.98	1.99	1.97	2.02	2.03	2.05	1.99	1.96	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.92	1.99	2.25	2.37	S	1.92	2.37	1.99	24	
7	2.30	2.15	2.04	1.96	1.94	1.95	1.93	1.93	1.93	1.93	1.94	1.93	1.92	1.92	1.92	1.93	1.92	1.91	1.92	1.91	1.91	1.90	S	1.90	1.90	2.30	1.96	24	
8	1.92	1.91	1.91	1.91	2.40	1.95	1.95	1.93	1.92	1.91	1.91	1.91	1.91	1.90	X	X	X	X	X	X	X	X	X	X	1.90	2.40	1.95	14	
9	X	X	X	X	X	X	X	X	X	X	S1	S1	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.95	1.92	12
10	1.91	1.92	1.92	1.92	1.92	1.93	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.90	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.90	1.91	1.90	1.94	1.92	24
11	1.91	1.91	1.92	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.91	24
12	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	X	X	X	X	X	X	X	X	X	X	1.91	1.92	1.92	15	
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	1.93	1.92	S	1.93	1.93	1.93	1.94	1.93	1.94	1.94	1.92	1.94	1.93	14	
14	1.94	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.95	1.96	1.95	1.94	1.93	1.93	1.93	S	1.94	1.94	1.93	1.93	1.94	1.95	1.95	2.12	1.93	2.12	1.95	24	
15	2.16	1.92	1.92	1.93	2.12	2.01	1.93	1.94	1.96	1.93	1.94	1.93	1.92	1.92	S	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.95	1.96	1.92	2.16	1.95	24	
16	2.13	2.09	2.21	2.03	1.99	1.97	1.96	1.96	1.95	1.94	1.93	1.93	1.92	S	1.93	1.92	1.92	1.92	1.92	1.92	1.93	2.06	2.05	2.06	1.92	2.21	1.98	24	
17	2.13	2.21	2.25	2.12	2.13	2.14	2.02	2.01	1.99	1.98	1.97	1.96	S	1.96	1.94	1.92	1.92	1.92	1.92	1.92	2.00	2.19	2.34	2.29	1.92	2.34	2.05	24	
18	2.45	2.52	2.52	2.26	2.43	2.81	2.22	2.17	2.06	1.97	1.94	S	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.89	2.25	2.99	2.73	3.51	1.89	3.51	2.26	24	
19	3.33	2.30	2.74	3.10	2.64	2.15	2.11	2.01	1.98	1.96	S	1.93	1.93	1.92	1.93	1.91	1.90	1.93	1.90	1.93	2.04	2.25	2.15	2.50	1.90	3.33	2.20	24	
20	2.22	2.12	2.22	2.26	2.66	2.35	2.13	2.04	1.99	S	1.95	1.95	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.92	2.08	2.08	1.98	1.95	1.90	2.66	2.06	24	
21	2.14	2.31	2.35	2.42	2.24	2.13	2.00	2.04	S	2.04	2.02	2.00	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.93	2.05	2.15	2.06	1.93	2.42	2.06	24	
22	2.08	2.00	1.92	1.90	1.92	1.98	1.93	S	1.92	1.93	1.95	1.90	1.90	1.89	1.88	1.87	1.87	1.87	P	P	P	P	P	P	1.87	2.08	1.92	18	
23	P	1.94	1.94	1.95	1.93	1.92	S	1.93	1.92	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.89	1.89	1.89	1.90	1.92	1.93	2.26	2.21	1.89	2.26	1.94	23	
24	1.94	1.94	1.95	1.94	1.95	S	1.94	1.93	1.91	1.90	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.91	1.94	1.94	1.90	1.95	1.92	24	
25	1.95	1.95	1.96	1.97	S	1.98	1.98	1.97	1.98	1.96	1.95	1.94	1.92	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.93	1.90	1.98	1.93	24	
26	1.97	1.98	2.01	S	2.01	1.99	1.97	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.91	2.01	1.93	24	
27	1.92	1.92	S	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.94	1.92	1.94	1.92	24
28	1.94	S	1.94	1.94	1.96	1.96	1.96	1.96	1.95	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.91	1.92	1.93	2.10	2.10	1.91	2.10	1.95	24	
29	S	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.96	1.94	1.93	1.93	1.92	1.92	1.93	1.92	1.92	1.91	1.91	1.92	1.92	S	1.91	1.96	1.93	24	
30	2.03	1.94	1.94	1.95	2.09	2.08	1.94	1.94	1.94	1.94	1.95	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	S	1.91	1.91	2.09	1.94	24	
HOURLY MAX	3.33	2.52	2.74	3.10	2.66	2.81	2.22	2.17	2.06	2.04	2.02	2.00	1.96	1.96	1.94	1.94	1.94	1.94	1.94	1.97	2.25	2.99	2.73	3.51					
HOURLY AVG	2.08	2.03	2.06	2.04	2.07	2.07	1.98	1.96	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.95	2.02	2.05	2.08					

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

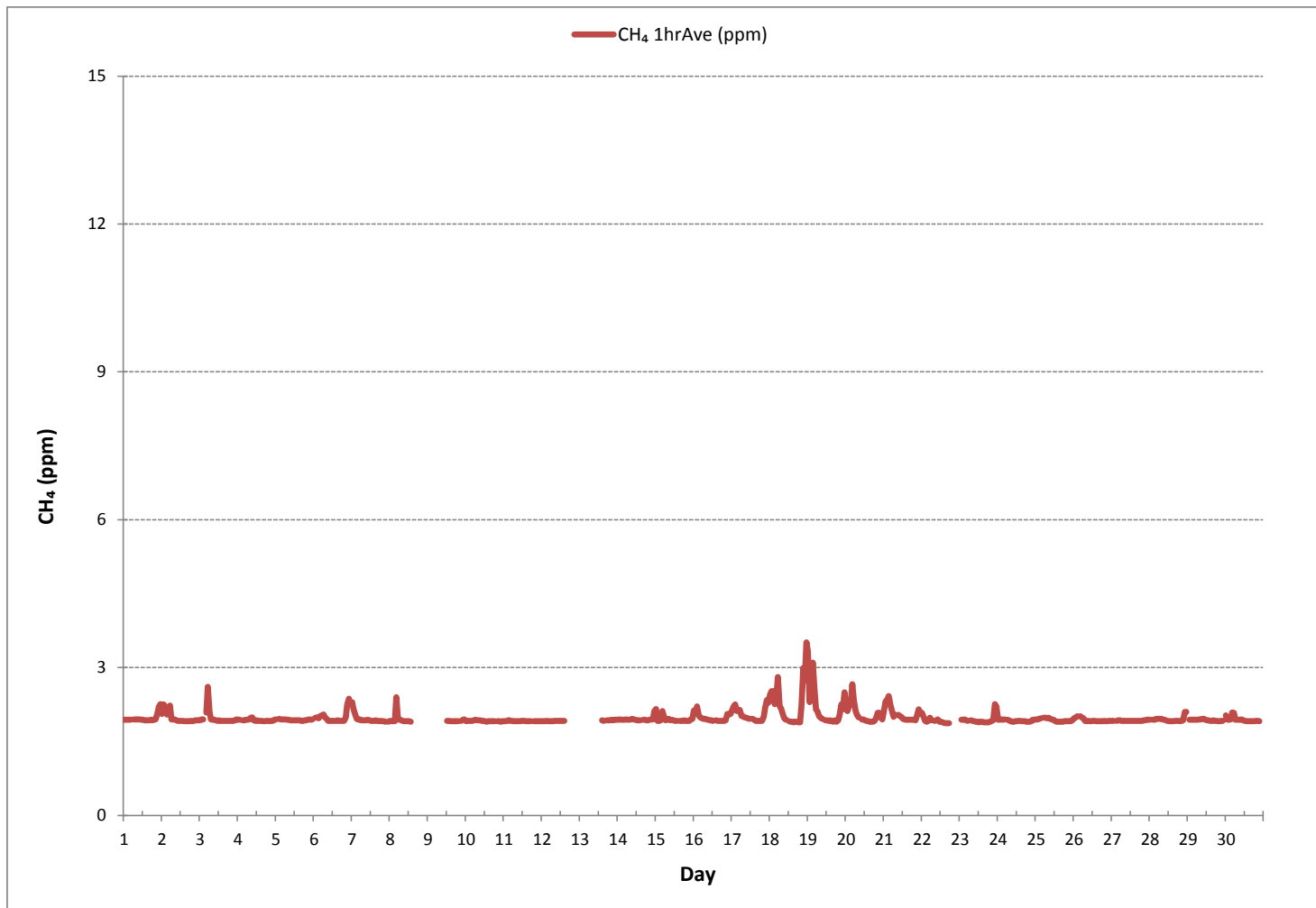
24 HR AVERAGES June 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	638			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	15	ON DAY 22
MAXIMUM 1-HR AVERAGE:	3.51 ppm	@ HOUR	23	ON DAY 18
MAXIMUM 24-HR AVERAGE:	2.26 ppm			ON DAY 18
IZS CALIBRATION TIME:	30 hrs	OPERATIONAL TIME:	672 hrs	
MONTHLY CALIBRATION TIME:	4 hrs	AMD OPERATION UPTIME:	93.3 %	
STANDARD DEVIATION:	0.16	MONTHLY AVERAGE:	1.98 ppm	

METHANE Hourly Averages (CH₄ ppm)



Wind: PRAMP_RENO
 Poll.: PRAMP_RENO-CH₄[ppm]
 Monthly: 18/06
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

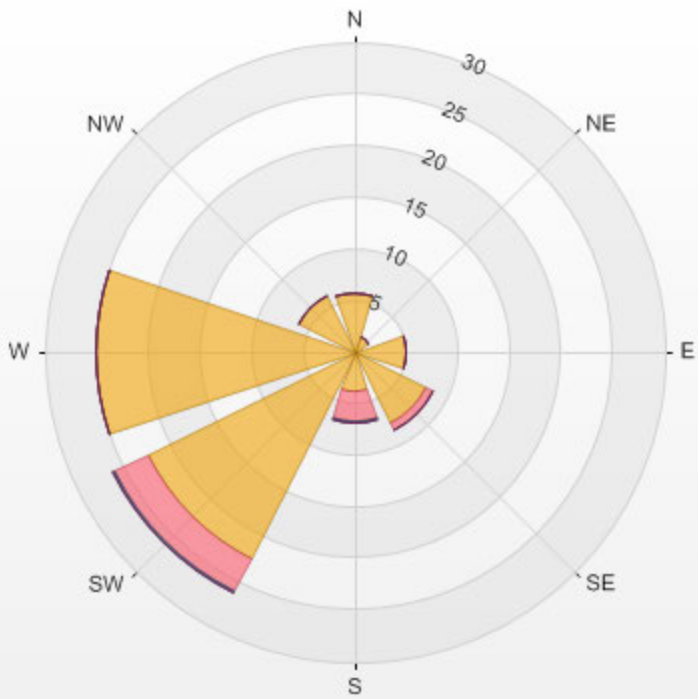
Calm: 15.05%

Calm Avg: 2.11 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	5.6	0.0	0.0	0.0	0.0	5.6
NE	1.6	0.0	0.0	0.0	0.0	1.6
E	5.0	0.0	0.0	0.0	0.0	5.0
SE	7.7	0.8	0.0	0.0	0.0	8.5
S	3.9	2.8	0.2	0.0	0.0	6.9
SW	22.4	3.6	0.2	0.0	0.0	26.2
W	25.1	0.0	0.0	0.0	0.0	25.1
NW	6.1	0.0	0.0	0.0	0.0	6.1
Summary	77.4	7.2	0.3	0.0	0.0	85.0

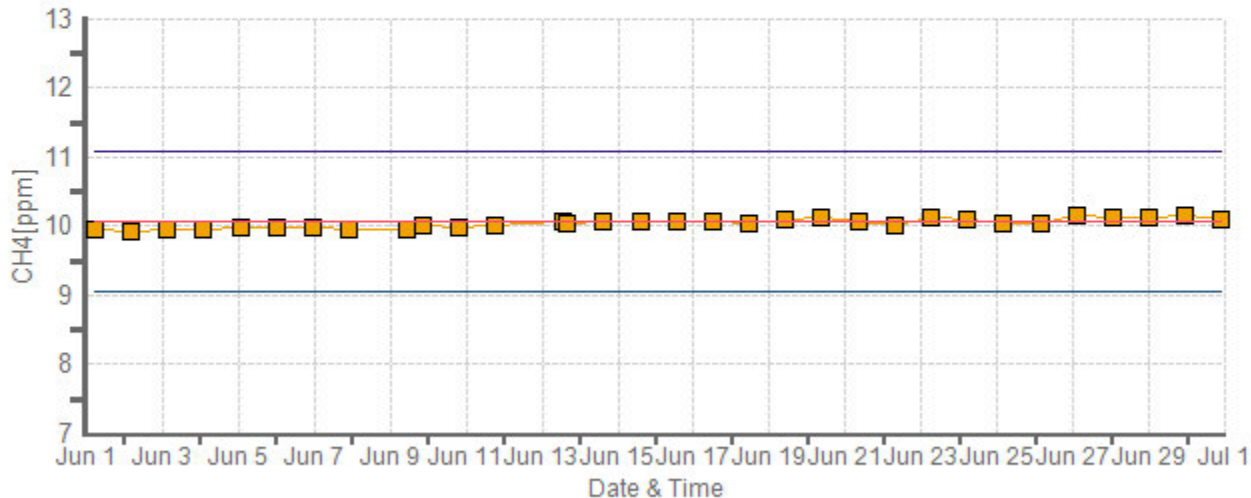
% Icon Classes (ppm) 77 0-2 7 2-3 0 3-5 0 5-10 0 >10.0

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.05% Calm Poll Avg: 2.11[ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 18/06 Type: Span

Span Meas Span Ref Span Low Span High



NON-METHANE HYDROCARBON



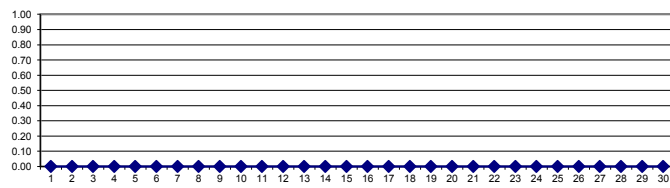
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	14
9	X	X	X	X	X	X	X	X	X	X	S1	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	12
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	15
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	P	P	P	P	P	0.00	0.00	0.00	18	
23	P	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
24	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

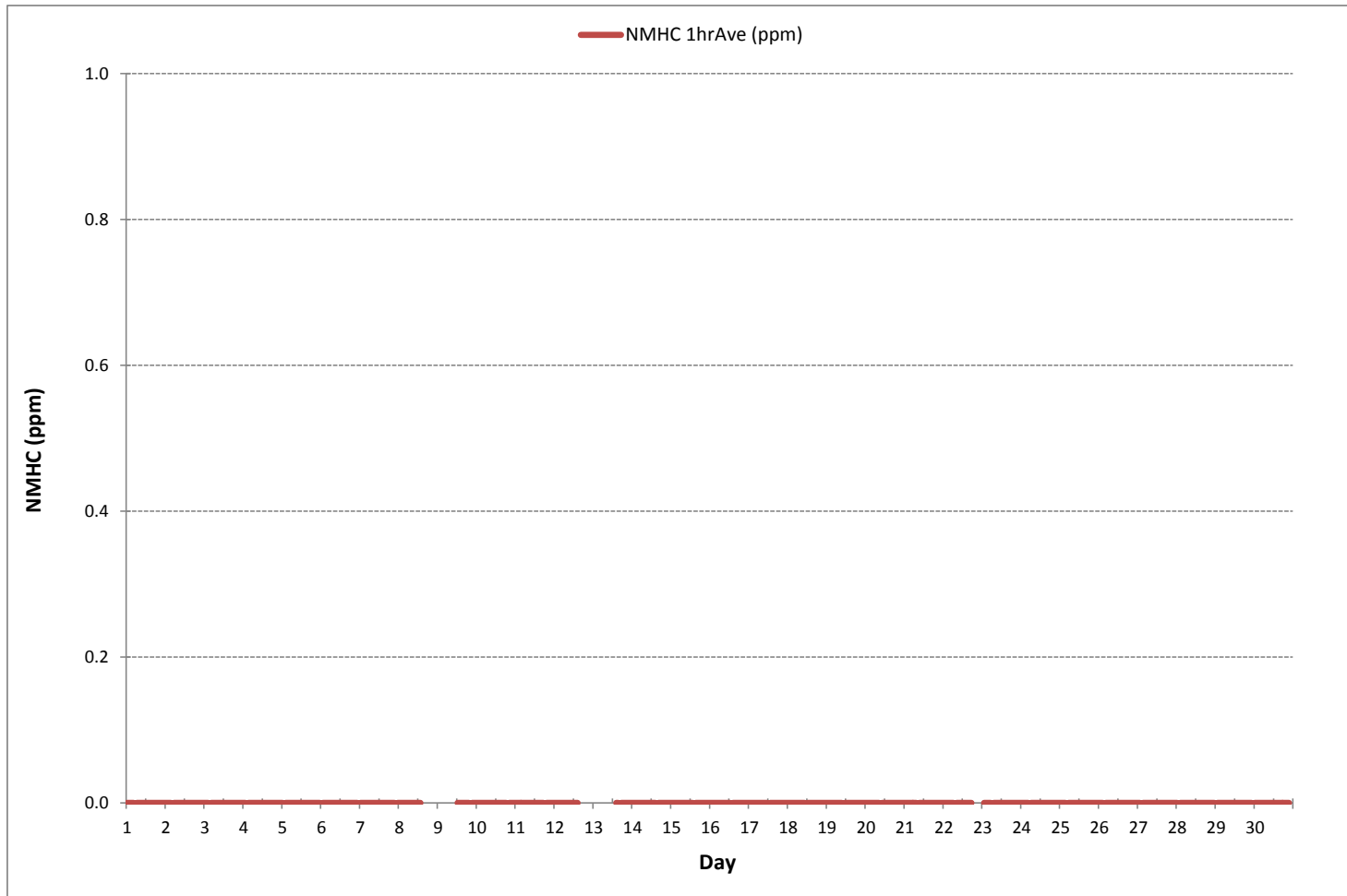
24 HR AVERAGES June 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0
MINIMUM 1-HR AVERAGE:	0.00 ppm @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.00 ppm @ HOUR 0 ON DAY 1
MAXIMUM 24-HR AVERAGE:	0.00 ppm ON DAY 1
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	672 hrs
AMD OPERATION UPTIME:	93.3 %
STANDARD DEVIATION:	0.00
MONTHLY AVERAGE:	0.00 ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



Wind: PRAMP_RENO
 Poll.: PRAMP_RENO-NMHC[ppm]
 Monthly: 18/06
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

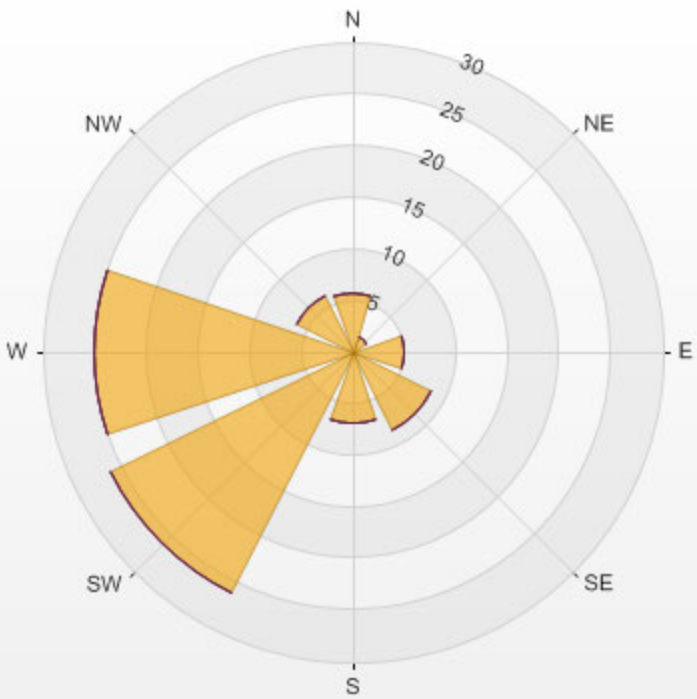
Calm: 15.05%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	5.6	0.0	0.0	0.0	0.0	5.6
NE	1.6	0.0	0.0	0.0	0.0	1.6
E	5.0	0.0	0.0	0.0	0.0	5.0
SE	8.5	0.0	0.0	0.0	0.0	8.5
S	6.9	0.0	0.0	0.0	0.0	6.9
SW	26.2	0.0	0.0	0.0	0.0	26.2
W	25.1	0.0	0.0	0.0	0.0	25.1
NW	6.1	0.0	0.0	0.0	0.0	6.1
Summary	85.0	0.0	0.0	0.0	0.0	85.0

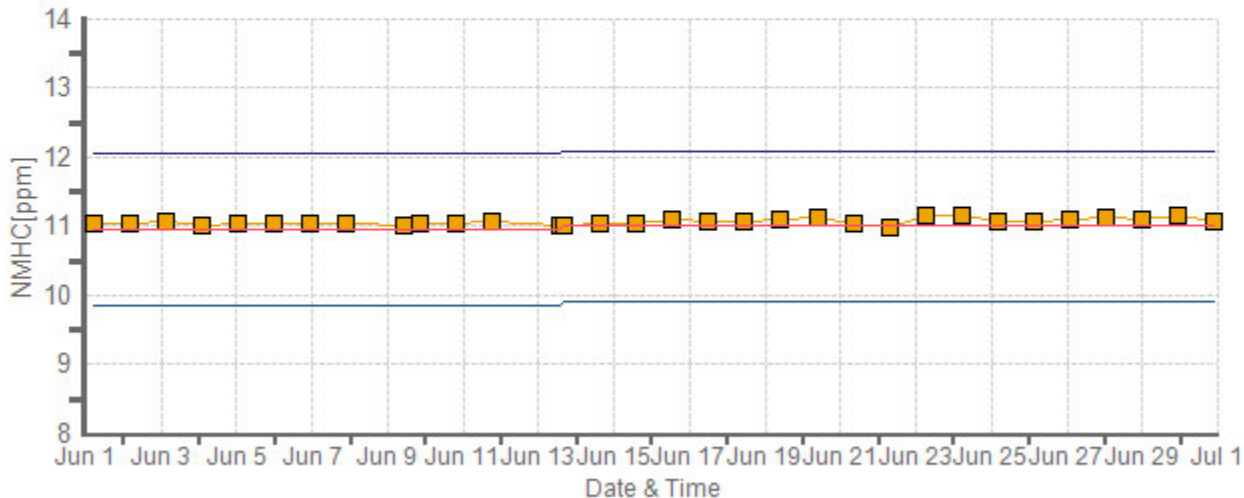
% Icon Classes (ppm) 85 0-0.1 0 0.1-0.3 0 0.3-1 0 1-2 0 >2.0

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.05% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 18/06 Type: Span

Span Meas Span Ref Span Low Span High



WIND SPEED



WIND SPEED Hourly Averages (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY 1	5.6	5.8	6.0	7.2	5.0	5.4	5.7	6.9	7.2	9.4	9.0	9.1	10.5	11.6	7.9	5.7	6.9	3.8	2.3	3.2	1.6	0.5	0.9	2.0	0.5	11.6	5.6	24
2	1.3	0.6	1.7	0.6	0.4	4.6	9.4	8.0	3.3	6.6	9.5	10.2	10.6	9.9	11.4	9.3	13.3	12.2	7.5	9.7	6.8	2.8	1.8	2.3	0.4	13.3	6.2	24
3	2.6	2.6	3.4	3.8	2.7	3.2	2.2	3.7	1.8	2.0	3.8	3.5	2.5	1.5	3.7	4.6	5.0	6.6	5.9	6.1	6.8	6.9	12.3	10.5	1.5	12.3	2.6	24
4	9.2	16.1	19.2	16.2	16.5	14.8	12.6	7.2	3.5	2.7	11.0	16.1	18.4	14.7	15.2	14.0	10.5	9.9	8.2	6.0	6.9	3.1	2.2	1.9	1.9	19.2	1.3	24
5	1.6	1.4	2.1	5.1	6.2	7.7	9.4	9.7	10.9	10.2	9.0	7.3	7.7	7.4	6.7	7.5	4.8	4.1	1.6	3.3	3.3	4.7	3.6	3.0	1.4	10.9	2.6	24
6	5.8	4.2	4.4	4.6	3.2	2.6	2.7	1.7	3.4	9.0	12.9	9.7	7.7	6.4	6.8	10.0	6.5	4.0	5.2	2.3	0.2	0.8	1.5	1.1	0.2	12.9	3.6	24
7	1.7	1.5	3.1	5.3	5.9	7.4	7.5	7.7	6.5	5.6	3.9	4.0	4.1	3.0	4.1	4.8	5.4	1.8	6.3	3.0	2.6	2.6	3.4	1.6	1.5	7.7	2.8	24
8	0.8	3.6	1.5	0.2	2.3	4.1	5.2	7.1	7.8	8.7	8.3	6.8	5.5	5.9	3.6	2.0	2.8	2.8	2.3	4.5	1.2	3.8	6.7	7.6	0.2	8.7	3.2	24
9	6.5	3.7	4.2	2.4	1.7	1.3	1.2	5.8	4.8	5.7	6.8	7.6	6.5	6.6	8.0	5.5	6.9	6.2	4.9	5.9	2.9	2.2	1.1	2.7	1.1	8.0	3.3	24
10	3.8	7.5	8.1	6.4	8.5	7.7	8.4	6.8	6.6	4.9	5.5	5.3	5.8	7.5	7.9	6.8	8.1	4.9	5.7	5.4	6.3	5.1	2.3	7.1	2.3	8.5	5.4	24
11	8.7	11.6	11.4	9.2	9.0	7.9	8.2	8.9	9.3	10.2	10.9	11.5	14.3	14.4	13.5	14.1	14.6	16.4	16.0	13.3	9.3	9.9	10.1	8.7	7.9	16.4	10.9	24
12	11.1	10.6	9.8	11.0	11.1	10.1	10.0	10.3	9.2	9.9	9.0	8.5	10.9	8.9	10.1	6.1	5.2	5.0	4.0	5.2	7.6	2.4	0.9	1.1	0.9	11.1	7.5	24
13	2.9	4.0	6.0	5.0	3.6	2.8	1.7	5.5	5.7	6.2	4.7	3.5	5.9	6.9	7.4	7.7	8.6	5.7	5.3	4.4	3.3	1.1	1.3	2.9	1.1	8.6	3.3	24
14	3.4	5.6	4.4	2.6	0.9	1.9	1.8	3.1	0.9	1.8	1.3	1.0	4.1	4.1	4.1	3.6	4.0	5.1	5.1	4.3	1.1	0.5	1.4	0.9	0.5	5.6	1.0	24
15	3.5	2.0	3.0	2.0	2.2	2.6	3.4	4.0	2.0	5.8	7.7	7.5	8.8	8.1	7.2	6.9	6.9	9.0	7.7	6.8	3.9	1.1	1.5	2.7	1.1	9.0	3.5	24
16	2.3	1.2	1.0	2.0	2.4	5.3	5.0	4.3	4.6	5.7	6.6	5.3	6.3	3.5	4.6	4.6	3.8	4.2	4.4	4.6	2.7	2.3	3.0	1.5	1.0	6.6	3.6	24
17	1.9	2.7	1.8	1.6	1.9	1.6	2.9	3.2	2.9	3.2	4.3	3.6	4.1	4.3	4.4	3.9	4.1	3.0	2.5	0.9	0.6	0.5	0.7	1.2	0.5	4.4	2.4	24
18	1.3	1.4	1.7	2.0	1.9	2.4	2.7	2.0	1.4	1.4	1.5	2.2	1.3	5.0	4.1	1.9	4.4	1.6	2.4	2.3	0.9	1.6	1.4	2.4	0.9	5.0	0.7	24
19	2.5	1.5	1.8	1.7	1.0	1.3	1.4	1.7	2.1	1.8	3.4	4.6	4.1	3.0	3.3	3.5	3.8	2.9	2.7	0.9	0.2	0.5	0.8	1.5	0.2	4.6	2.1	24
20	2.7	2.5	3.0	3.0	2.2	1.8	1.0	2.0	3.2	3.0	2.2	2.6	2.7	3.0	0.6	1.9	1.8	0.2	2.1	1.8	0.9	1.3	4.3	5.7	0.2	5.7	1.8	24
21	2.4	1.8	1.6	1.7	1.6	1.9	4.5	2.9	1.3	1.2	2.5	2.3	2.5	2.5	2.0	2.7	4.1	3.2	2.6	2.4	2.2	0.9	1.7	1.4	0.9	4.5	1.6	24
22	2.6	7.2	7.3	7.6	2.5	1.1	3.9	5.5	6.0	5.2	3.5	7.2	9.5	12.2	8.5	6.7	5.3	4.0	P	P	P	P	P	P	1.1	12.2	4.9	18
23	P	3.7	2.8	1.5	3.7	3.5	5.2	2.7	3.7	5.8	6.1	7.4	5.5	7.5	8.1	7.2	6.5	7.4	6.6	6.3	2.8	1.3	2.2	1.7	1.3	8.1	4.4	23
24	2.3	4.2	3.6	2.8	2.6	3.8	4.3	5.7	7.3	8.7	6.7	9.3	8.2	6.7	5.7	3.4	2.8	3.3	3.5	4.9	3.3	5.2	8.5	10.6	2.3	10.6	2.5	24
25	10.1	10.6	8.3	7.3	3.3	4.4	7.1	7.5	2.9	9.3	10.3	11.6	12.2	19.4	15.6	18.0	15.7	15.6	12.8	8.0	9.0	6.5	7.1	6.0	2.9	19.4	6.3	24
26	4.3	2.1	3.8	2.5	3.3	5.1	6.4	12.1	12.0	14.1	14.3	14.3	13.9	17.4	15.9	13.9	13.2	10.3	9.8	8.4	9.3	10.1	9.8	12.8	2.1	17.4	9.6	24
27	12.4	12.6	13.0	12.5	12.2	12.4	13.3	12.1	11.3	11.4	15.7	13.9	14.3	11.0	10.5	13.2	10.5	8.5	6.1	4.6	6.1	2.1	1.5	2.7	1.5	15.7	10.0	24
28	3.4	5.3	5.6	6.6	6.4	6.0	6.4	7.0	6.9	7.8	9.1	8.4	8.9	10.9	7.9	6.0	5.8	3.3	2.8	1.4	1.3	0.6	1.0	3.1	0.6	10.9	4.7	24
29	4.2	5.1	5.4	4.1	4.1	5.0	5.6	6.6	5.1	3.4	7.5	7.1	6.3	5.0	6.7	7.2	3.4	5.1	3.5	5.5	2.2	2.8	3.5	1.2	1.2	7.5	4.1	24
30	2.7	3.1	4.4	3.4	1.4	3.1	6.0	6.1	8.8	9.5	10.5	11.7	13.1	9.7	11.5	10.7	11.0	7.3	2.5	1.2	2.0	2.4	5.1	7.1	1.2	13.1	6.3	24
HOURLY MAX	12.4	16.1	19.2	16.2	16.5	14.8	13.3	12.1	12.0	14.1	15.7	16.1	18.4	19.4	15.9	18.0	15.7	16.4	16.0	13.3	9.3	10.1	12.3	12.8				

STATUS FLAG CODES

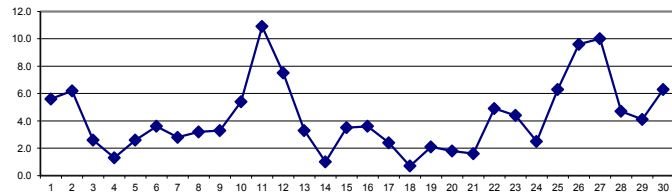
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION:	April 5, 2018
DECLINATION:	MAGNETIC DECLINATION 15 DEGREE EAST

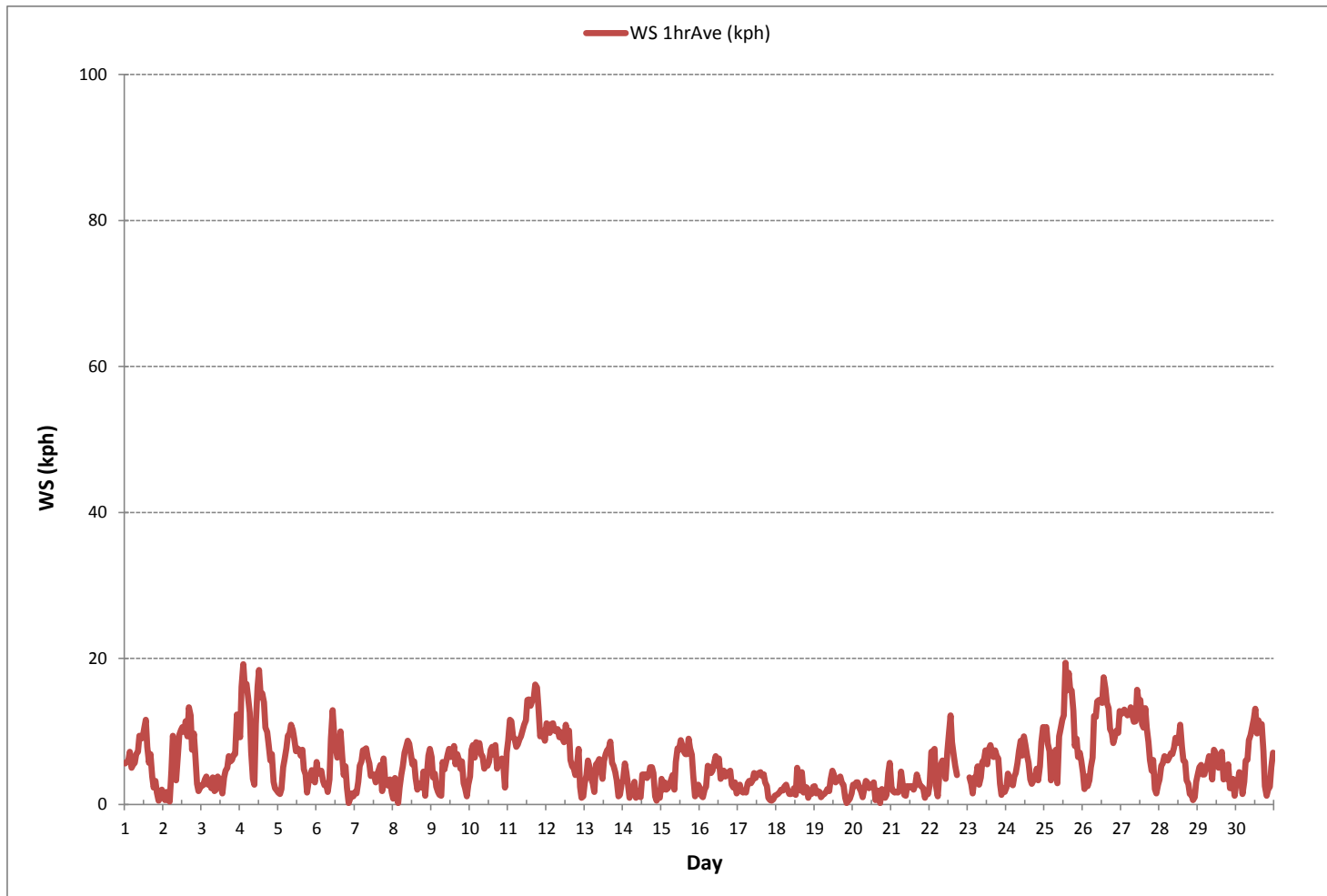
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	713
MINIMUM 1-HR AVERAGE:	0.2 kph @ HOUR 20 ON DAY 6
MAXIMUM 1-HR AVERAGE:	19.4 kph @ HOUR 13 ON DAY 25
MAXIMUM 24-HR AVERAGE:	10.9 kph ON DAY 11
MONTHLY CALIBRATION TIME:	0 hrs
OPERATIONAL TIME:	713 hrs
AMT OPERATION UPTIME:	99.0 %
STANDARD DEVIATION:	3.8
MONTHLY AVERAGE:	3.0 kph

24 HR AVERAGES June 2018








WIND SPEED Hourly Averages (WS kph)



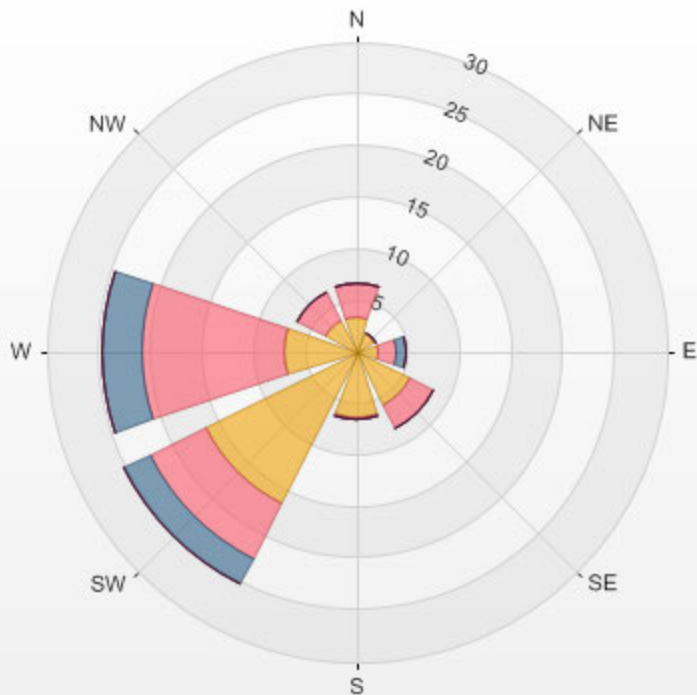
Wind: PRAMP_RENO
 Monitor: WSP [kph]
 Monthly: 18/06
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 15.15%

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	3.4	3.4	0.0	0.0	0.0	0.0	6.7
NE	2.0	0.1	0.0	0.0	0.0	0.0	2.1
E	2.1	1.7	1.0	0.0	0.0	0.0	4.8
SE	5.9	2.4	0.0	0.0	0.0	0.0	8.3
S	6.5	0.1	0.0	0.0	0.0	0.0	6.6
SW	16.4	6.0	2.8	0.0	0.0	0.0	25.3
W	7.0	13.7	3.9	0.0	0.0	0.0	24.7
NW	3.4	3.1	0.0	0.0	0.0	0.0	6.5
Summary	46.6	30.6	7.7	0.0	0.0	0.0	84.9

% Icon	Classes (kph)	47	31	8	0	0	0
	1.8-6.0		6.0-12.0		12.0-20.0		20.0-29.0
	29.0-39.0		>39.0				

PRAMP_RENO 2018/06/01 00:00 - 2018/06/30 23:00 Calm: 15.15% Calm Wind Avg Speed: 1.23(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

WIND DIRECTION Hourly Averages (WD)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR AVG	24-HR	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	QUADRANT	RDGS.	
DAY																											
1	SE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	SSW	SE	ESE	SSE	SSW	WSW	SSE	SE	SE	24	
2	S	SW	SSW	N	SW	SW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	24
3	SW	SW	SW	SW	SSW	SSW	SSW	SW	SSW	SE	SW	WSW	SSW	SSE	SE	E	ESE	ESE	ESE	ESE	E	E	E	ESE	SE	SE	24
4	E	ENE	ENE	E	E	E	E	ESE	S	S	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	24
5	NNW	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	24
6	SE	SE	SE	SE	SE	S	S	S	SSW	SW	WSW	WSW	WSW	W	WSW	SW	WSW	WSW	WSW	SW	WSW	SSW	SSW	SSW	SSW	SSW	24
7	SSW	SSE	SE	SE	SE	ESE	ESE	SE	SE	SE	SSE	SE	SE	SSE	S	SSW	SW	WSW	SW	ENE	NE	ENE	NNE	NNE	SE	SE	24
8	NE	NNE	NE	W	SW	WNW	NW	NW	NNW	N	N	NNE	NNE	NE	NE	E	SE	SE	ENE	N	NE	NNW	NNW	N	N	24	
9	N	N	NE	NE	ENE	E	SSW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	24	
10	W	W	W	W	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	24
11	NNW	NW	WNW	W	WNW	WNW	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	24
12	WNW	NW	WNW	WNW	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	W	WNW	WNW	WSW	WSW	NNW	SW	SW	WNW	24	
13	SW	SW	WSW	WSW	W	W	W	NNW	NNW	NNW	NW	NW	NW	NNW	N	NNE	N	N	N	N	NNE	NNW	SW	N	NNW	24	
14	NNE	NNE	NNE	NE	ENE	E	NNE	NE	ESE	SSE	ESE	WSW	WNW	WSW	WSW	W	WSW	WSW	WSW	W	WSW	SW	WSW	SSW	WNW	24	
15	SW	SW	WSW	SW	SSW	SW	WSW	W	W	N	NNW	N	N	N	N	N	N	NNW	NNW	N	N	WNW	W	W	NNW	24	
16	SW	WSW	SW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WNW	WSW	WSW	W	W	WSW	SW	SSW	SSW	SSW	S	WSW	24	
17	SSW	SSW	SSW	S	S	S	S	SSE	SSE	SSE	SSW	S	SSW	SSW	SSW	SSW	SW	SW	SW	SSE	SE	SW	SW	SSW	SSW	24	
18	SSW	SSW	SSW	SW	SW	SW	S	S	SE	NE	ESE	WSW	SSW	WSW	WNW	N	NNE	N	N	NNE	SSW	SSW	SSW	SSW	SSW	24	
19	SSW	SSW	SW	SW	SSW	SSW	S	S	S	S	SSW	SSW	SSW	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	24	
20	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	SSW	W	N	ESE	SSE	SSE	S	SSE	SE	SE	S	24	
21	SSE	SSW	SSW	SW	SSW	S	SSE	SSE	S	SSE	SE	S	SE	SSW	N	E	E	SE	SE	SSW	SSW	SSW	SW	SSW	SSE	24	
22	SSE	SW	SW	WSW	SW	S	SW	SW	SW	SSW	SSW	SW	WSW	WSW	WSW	W	WNW	NNW	P	P	P	P	P	P	WSW	18	
23	P	WNW	WNW	WNW	WSW	W	WSW	W	W	WSW	W	NW	NW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	SW	SSW	SW	W	23	
24	SW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SE	ESE	E	E	E	E	E	E	E	24	
25	ESE	ESE	ESE	ESE	SE	ESE	ESE	ESE	S	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SSW	SW	24	
26	SSW	S	S	S	S	S	S	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	SW	24	
27	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	24	
28	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	NNW	NNW	NW	NW	NW	W	SW	SW	SSW	W	24	
29	SSW	SW	WSW	SW	SW	SW	SW	SW	WSW	W	WSW	W	W	W	W	W	NNW	SW	NNW	WSW	SW	SW	SW	SSW	WSW	24	
30	SW	SW	SW	SW	SSW	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	WSW	WSW	W	SSW	SW	SW	SW	WSW	SW	24	

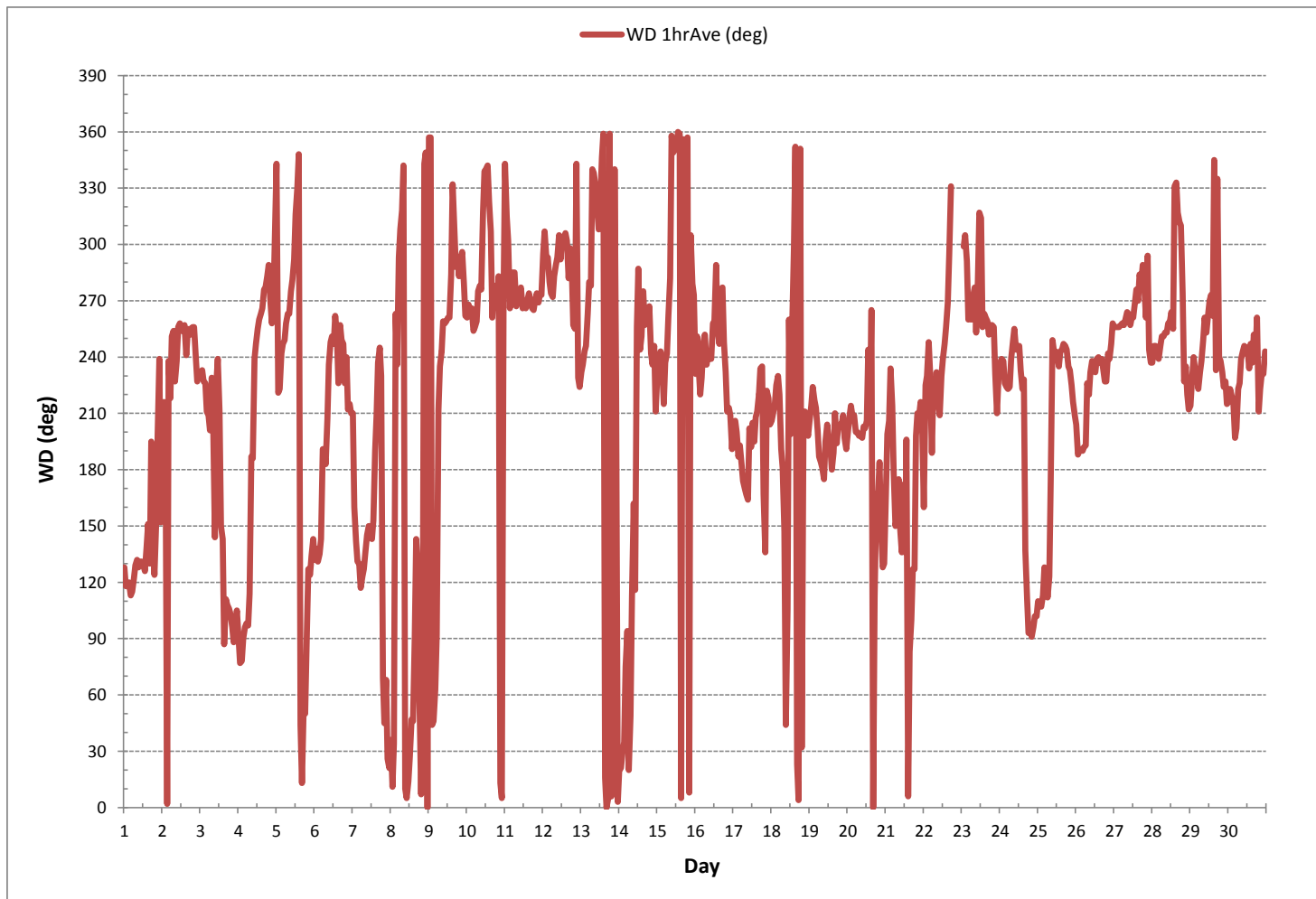
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION:	April 5, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	713	hrs
STANDARD DEVIATION:	78		AMD OPERATION UPTIME:	99.0	%
			MONTHLY AVERAGE:	251	(WSW)

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



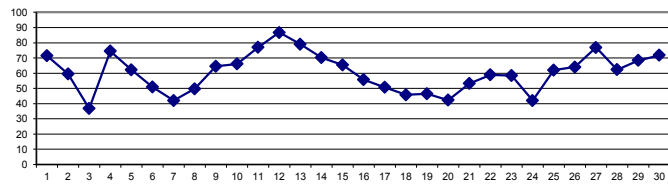
RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	65	70	77	76	81	78	76	75	77	78	78	71	65	58	52	48	46	50	76	69	79	88	92	91	46	92	72	24
2	87	92	93	94	93	93	84	77	78	70	57	47	40	34	46	42	33	28	30	27	31	42	55	55	27	94	60	24
3	57	58	58	59	63	62	51	43	37	30	23	20	20	19	19	20	20	21	24	27	27	28	38	60	19	63	37	24
4	79	85	84	87	89	89	89	91	91	90	86	78	71	66	60	57	54	49	50	52	57	69	79	87	49	91	75	24
5	92	93	94	92	87	86	83	77	69	61	56	53	51	49	47	44	41	38	36	37	45	52	53	58	36	94	62	24
6	58	62	68	68	76	76	73	68	57	45	38	39	44	35	36	31	31	30	30	34	49	55	58	60	30	76	51	24
7	63	64	61	54	54	46	47	44	38	34	33	31	29	25	19	17	17	26	51	56	57	55	69	17	69	42	24	
8	65	67	76	80	75	68	60	57	48	43	40	36	34	32	30	27	27	32	43	52	56	53	61	27	80	50	24	
9	66	68	74	76	77	78	75	70	67	65	66	68	64	69	60	63	56	56	54	47	51	54	62	64	47	78	65	24
10	63	61	56	59	61	64	63	60	61	61	63	63	63	57	55	61	80	77	79	80	74	73	78	73	55	80	66	24
11	51	44	40	66	54	59	73	82	83	79	82	87	84	86	87	85	87	88	88	88	89	89	89	89	40	89	77	24
12	88	89	88	86	86	88	87	87	86	85	86	85	82	85	84	85	86	86	87	89	89	87	89	92	82	92	87	24
13	93	93	91	91	91	90	89	84	82	81	79	77	70	69	69	67	63	65	65	66	71	83	86	81	63	93	79	24
14	79	85	84	82	81	80	75	70	66	66	62	60	59	60	60	59	57	56	56	59	71	85	86	88	56	88	70	24
15	89	84	85	86	89	87	83	81	72	68	69	63	53	44	44	41	37	37	43	48	54	68	69	76	37	89	65	24
16	80	82	88	90	90	81	75	68	64	57	53	47	38	34	29	28	26	29	29	30	43	55	58	63	26	90	56	24
17	67	66	69	72	74	73	64	59	55	50	44	40	37	36	36	29	29	25	26	32	50	57	63	63	25	74	51	24
18	65	70	72	75	77	73	68	52	45	38	34	31	27	22	21	21	22	21	23	30	42	51	55	63	21	77	46	24
19	66	67	70	69	68	66	65	58	49	45	32	31	29	25	25	24	24	25	26	31	46	53	56	66	24	70	47	24
20	59	54	57	59	67	65	61	50	48	42	37	29	27	25	24	23	23	23	29	35	40	49	44	46	23	67	42	24
21	58	68	73	71	68	65	63	64	60	54	49	44	40	34	31	32	35	34	30	42	58	66	70	69	30	73	53	24
22	74	73	69	64	69	70	65	62	65	63	64	52	49	48	45	43	41	45	P	P	P	P	P	P	41	74	59	18
23	P	89	89	90	91	88	86	84	75	60	53	48	44	41	36	33	32	32	32	32	38	51	57	62	32	91	58	23
24	63	62	59	64	66	57	52	48	39	35	32	28	24	23	26	27	31	34	34	35	41	43	44	42	23	66	42	24
25	43	48	54	60	65	68	66	64	64	68	68	68	78	87	84	71	61	54	51	52	50	54	53	58	43	87	62	24
26	58	71	67	69	66	59	53	51	53	49	57	65	63	60	64	67	64	68	63	67	70	70	77	86	49	86	64	24
27	87	87	88	89	90	90	90	88	84	85	81	80	79	76	70	64	59	59	60	60	61	64	72	83	59	90	77	24
28	81	74	71	72	74	74	73	71	68	63	55	51	46	41	55	53	50	46	44	50	62	71	75	76	41	81	62	24
29	74	74	68	72	69	71	71	69	68	71	61	58	51	46	42	49	76	70	72	71	76	85	87	90	42	90	68	24
30	91	92	91	89	91	87	78	74	67	64	62	59	58	60	46	45	49	46	77	72	75	83	85	82	45	92	72	24
HOURLY MAX	93	93	94	94	93	93	90	91	91	90	86	87	84	87	87	85	87	88	88	89	89	89	92	92				
HOURLY AVG	71	73	74	75	76	74	71	68	64	60	57	54	51	48	47	45	45	45	47	50	57	63	67	71				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

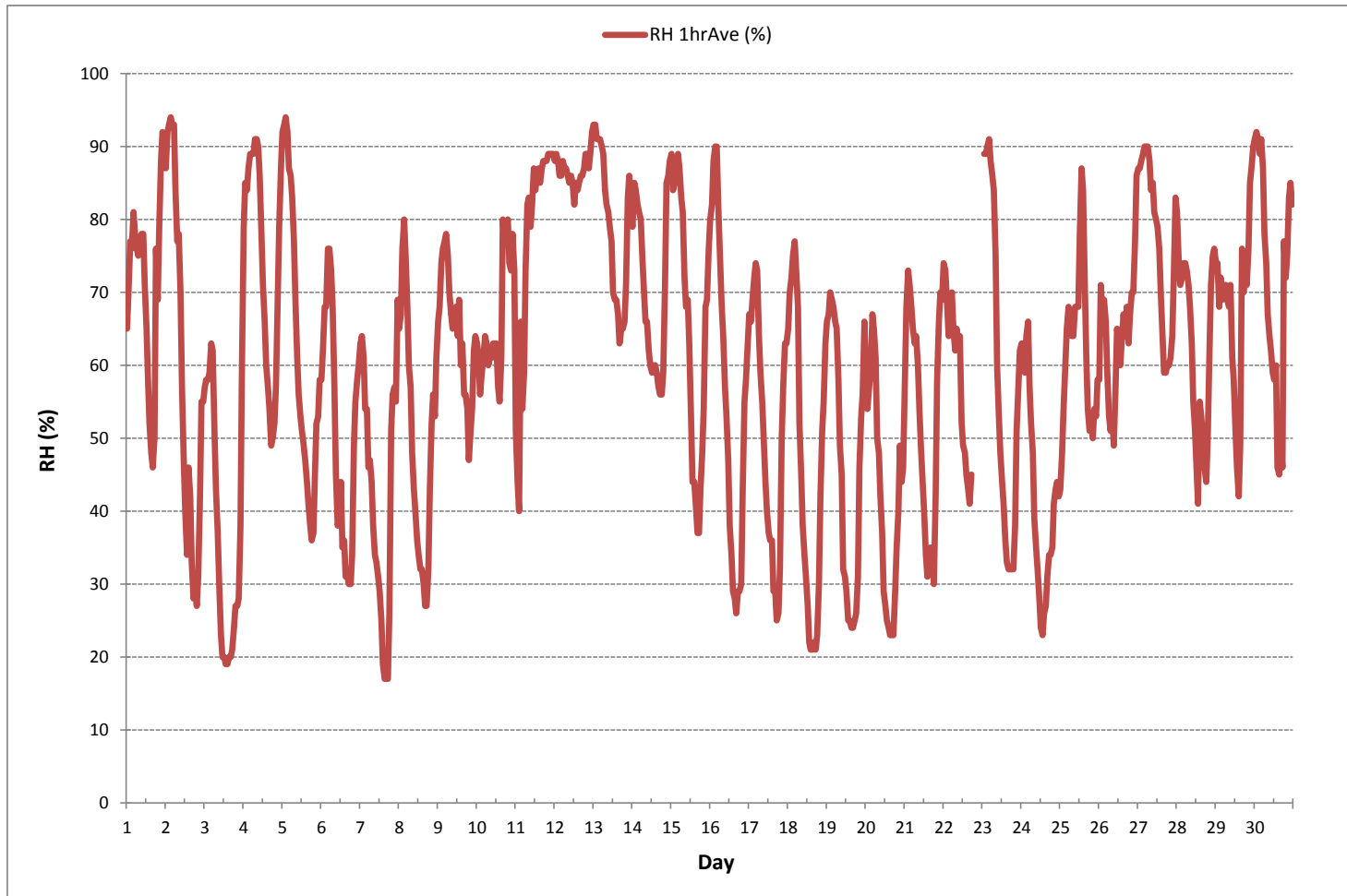
24 HR AVERAGES June 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	17	%	@ HOUR	15	ON DAY	7
MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR	3	ON DAY	2
MAXIMUM 24-HR AVERAGE:	87	%			ON DAY	12
OPERATIONAL TIME:						713 hrs
AMD OPERATION UPTIME:						99.0 %
STANDARD DEVIATION:	20		MONTHLY AVERAGE:			61 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



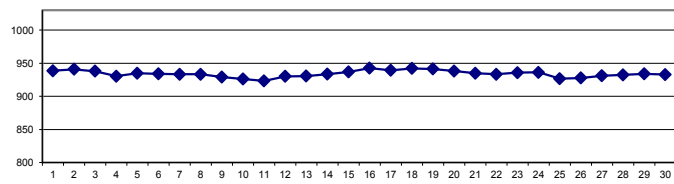
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.		
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.			
DAY 1	938	938	938	938	938	938	938	939	939	939	939	939	939	939	938	938	938	939	939	939	939	939	939	939	939	938	939	939	24	
2	939	939	939	939	940	940	941	941	942	942	942	941	941	941	941	941	941	941	941	941	941	941	942	942	942	939	942	941	24	
3	941	941	941	941	941	941	941	941	941	940	940	939	939	938	937	937	936	935	935	934	934	933	933	933	933	933	933	941	938	24
4	932	931	930	930	929	929	929	928	928	928	928	929	929	930	931	931	932	932	932	932	932	932	933	933	933	928	933	930	24	
5	934	934	934	934	934	934	934	935	935	935	935	936	936	936	936	936	935	935	935	935	935	935	935	935	934	936	935	24		
6	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	935	935	935	934	935	934	24	
7	935	935	935	935	935	934	934	934	934	934	933	933	933	933	932	932	932	932	931	932	933	932	933	933	933	931	935	933	24	
8	933	932	933	933	933	934	934	934	934	934	934	935	934	934	934	934	933	933	933	932	932	932	932	932	932	932	935	933	24	
9	932	932	932	931	930	929	929	929	929	928	928	928	928	928	929	928	929	928	929	928	928	928	928	928	928	928	928	932	929	24
10	928	928	928	928	928	928	928	928	927	927	927	927	927	926	926	925	925	925	925	925	924	924	924	924	923	923	928	926	24	
11	923	922	922	921	921	921	921	921	921	921	922	922	922	922	923	924	924	924	925	926	927	927	927	927	921	927	923	24		
12	927	928	928	928	929	929	929	929	929	930	930	931	931	932	932	932	932	932	931	931	931	931	931	930	927	932	930	24		
13	930	930	929	929	929	929	930	930	930	930	930	931	931	931	931	931	931	931	931	931	932	932	932	933	929	933	931	24		
14	933	933	933	933	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	933	933	933	933	933	933	934	933	24	
15	933	934	934	934	934	934	935	935	935	936	936	936	937	937	937	938	938	939	939	940	941	941	941	941	942	933	942	937	24	
16	942	942	942	943	943	944	944	944	944	944	944	943	943	942	942	942	942	941	941	941	941	941	941	941	941	941	944	943	24	
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18	940	941	941	941	942	942	942	942	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	940	943	942	24	
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21	936	936	936	936	936	936	936	936	936	935	935	935	935	935	935	934	934	934	933	934	934	933	933	933	933	933	936	935	24	
22	934	934	933	933	934	934	934	934	934	934	934	933	933	933	932	932	932	932	P	P	P	P	P	P	932	934	933	18		
23	P	934	934	935	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	937	934	937	936	23		
24	937	937	938	938	938	938	938	938	938	938	938	938	937	937	937	936	936	935	934	934	933	933	932	931	931	938	936	24		
25	930	929	929	928	927	926	925	925	924	924	924	924	924	926	927	927	928	927	927	928	928	928	928	927	924	930	927	24		
26	927	927	927	927	927	926	927	927	927	927	927	927	928	928	929	929	929	929	929	929	929	929	929	929	929	926	929	928	24	
27	929	929	930	930	930	930	930	930	931	931	931	931	932	932	932	932	932	932	932	932	932	932	933	933	929	933	931	24		
28	932	932	932	932	932	932	932	932	932	932	932	932	932	932	933	933	933	933	933	933	933	933	933	933	932	933	932	24		
29	933	933	933	933	933	933	933	934	934	934	934	934	934	934	934	934	935	935	935	935	935	935	935	935	933	935	934	24		
30	935	935	935	935	934	934	934	934	934	934	933	933	932	932	931	931	931	932	931	932	931	932	931	932	931	931	935	933	24	
HOURLY MAX	942	942	942	943	943	944	944	944	944	944	944	944	943	943	942	942	942	942	942	942	942	942	942	942	942	942	942	942	24	
HOURLY AVG	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	934	24	

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

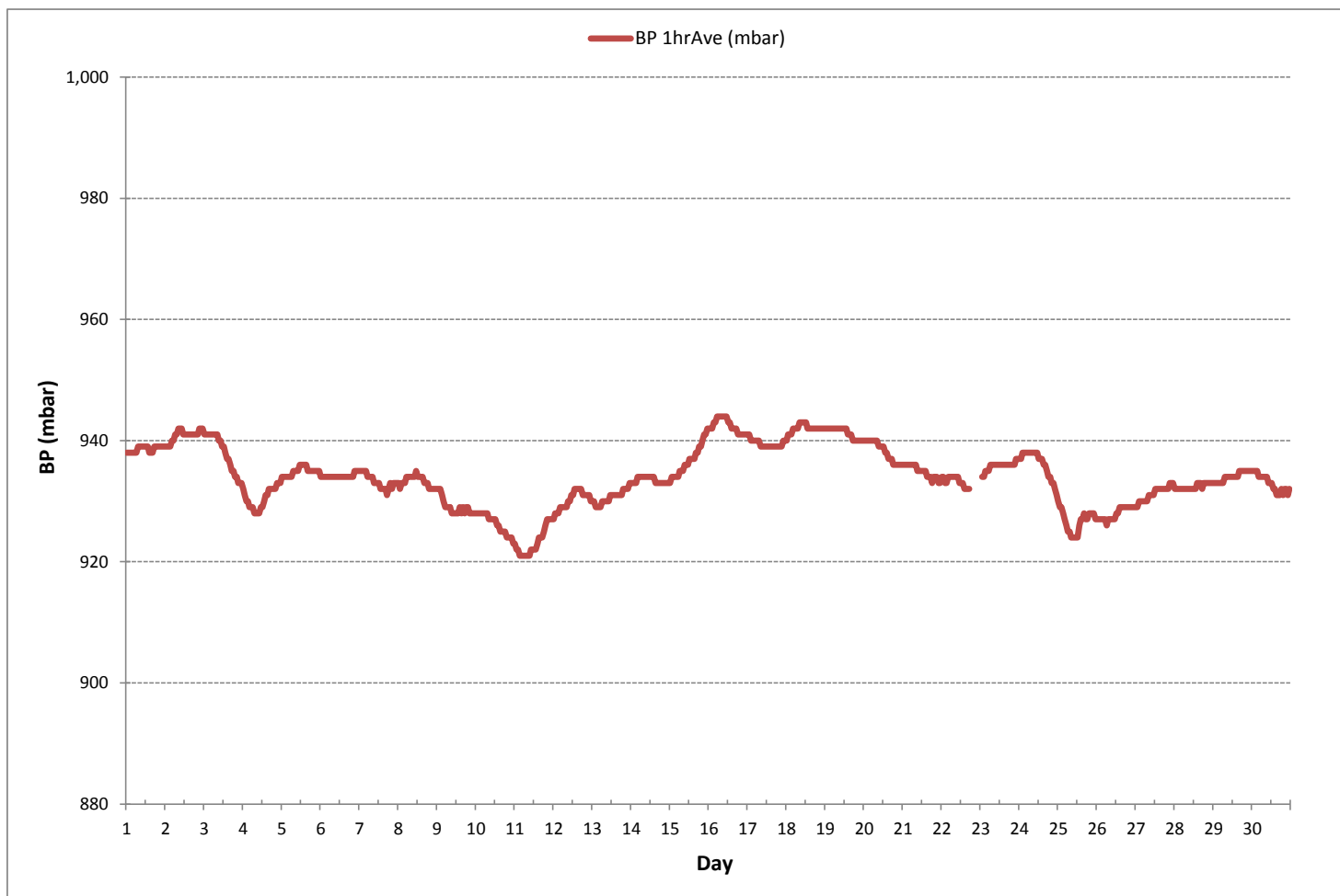
24 HR AVERAGES June 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	921	mbar	@ HOUR	3	ON DAY	11
MAXIMUM 1-HR AVERAGE:	944	mbar	@ HOUR	5	ON DAY	16
MAXIMUM 24-HR AVERAGE:	943	mbar			ON DAY	16
OPERATIONAL TIME:						713 hrs
AMD OPERATION UPTIME:						99.0 %
STANDARD DEVIATION:	5					MONTHLY AVERAGE: 934 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



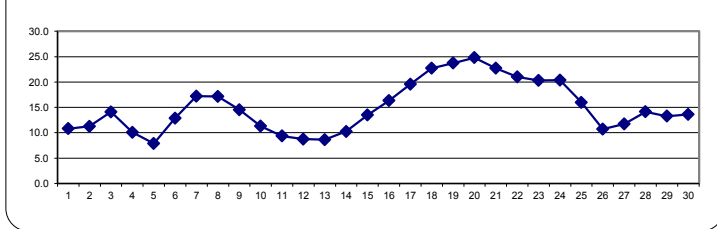
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	9.3	9.1	8.5	8.4	7.9	8.3	8.9	9.7	10.1	10.2	10.5	11.5	12.2	13.4	15.3	16.2	16.0	14.7	11.4	12.3	10.5	8.8	7.9	8.2	7.9	16.2	10.8	24
2	8.3	6.9	6.2	4.9	3.7	5.2	8.5	9.5	10.0	11.4	13.1	14.3	15.6	17.2	13.4	15.6	16.0	16.6	16.0	16.2	14.6	11.5	8.3	7.4	3.7	17.2	11.3	24
3	6.6	5.9	5.5	5.1	4.3	5.3	9.3	11.0	13.8	16.1	17.0	17.6	18.4	19.2	19.6	20.1	20.6	20.4	19.4	18.9	17.8	16.7	16.0	14.1	4.3	20.6	14.1	24
4	11.6	10.3	9.7	9.0	9.0	8.9	8.7	9.1	9.7	9.3	9.1	9.5	10.6	11.2	12.4	12.3	12.7	13.2	12.5	12.1	10.7	8.7	6.5	5.0	5.0	13.2	10.1	24
5	3.6	1.8	2.4	3.7	4.4	4.5	5.0	5.5	6.4	7.0	7.8	8.5	9.1	9.6	10.0	11.1	12.0	12.5	13.1	12.8	10.9	9.4	8.9	8.5	1.8	13.1	7.9	24
6	8.5	8.0	7.8	7.6	7.2	8.2	8.6	10.7	13.0	14.8	15.4	16.0	15.7	16.6	16.3	17.7	17.4	17.5	18.0	17.0	14.3	12.0	11.1	9.7	7.2	18.0	12.9	24
7	8.5	8.1	8.7	9.9	10.4	12.4	12.7	14.8	17.3	19.5	20.8	22.1	23.4	24.4	25.5	25.9	25.0	25.0	22.6	17.6	16.1	15.0	14.7	12.2	8.1	25.9	17.2	24
8	13.0	11.9	10.4	9.8	10.8	11.8	13.2	13.9	16.2	17.8	19.1	20.3	21.3	21.8	21.9	22.7	23.6	23.7	23.0	20.5	18.0	16.4	16.1	14.3	9.8	23.7	17.1	24
9	13.5	13.0	11.9	11.4	11.5	11.7	13.6	13.9	14.4	15.3	15.3	15.2	16.6	16.1	16.4	15.6	17.0	17.5	17.1	17.1	15.6	14.4	12.8	12.1	11.4	17.5	14.5	24
10	12.1	11.8	11.5	10.5	9.6	9.2	9.5	10.4	10.9	11.4	11.8	12.7	13.2	14.1	13.9	13.6	11.9	11.4	10.2	10.7	11.0	10.5	9.6	9.8	9.2	14.1	11.3	24
11	11.7	12.3	12.9	10.4	11.4	10.7	9.1	8.4	8.5	8.5	8.4	7.9	8.1	8.3	8.5	8.7	8.6	8.8	8.9	8.8	8.9	9.0	9.1	8.9	7.9	12.9	9.4	24
12	9.0	8.6	8.5	8.5	8.7	8.8	8.9	9.0	9.1	8.9	8.6	8.9	8.8	8.9	8.7	9.2	9.6	9.6	9.6	9.2	9.0	8.1	7.1	6.7	6.7	9.6	8.8	24
13	7.0	7.1	7.6	7.7	7.9	7.8	8.0	7.6	7.4	7.4	7.8	8.2	9.8	10.5	10.2	10.6	11.0	10.5	10.5	10.1	9.3	7.8	7.5	7.7	7.0	11.0	8.6	24
14	7.2	5.7	5.2	5.3	5.5	5.5	6.1	6.6	7.5	8.1	10.0	10.9	11.1	12.8	13.7	14.5	15.7	16.0	16.3	16.1	14.1	11.6	10.7	9.9	5.2	16.3	10.3	24
15	9.2	9.3	8.6	8.4	8.2	9.2	10.3	11.2	13.3	14.6	14.3	15.2	16.3	17.2	17.3	17.7	18.9	19.2	18.2	16.2	15.1	12.9	12.7	10.8	8.2	19.2	13.5	24
16	9.9	9.9	8.5	7.5	7.4	9.6	11.6	13.8	15.4	16.8	18.2	19.4	20.7	21.4	22.4	22.9	22.9	22.5	22.9	22.3	19.7	16.8	15.6	14.0	7.4	22.9	16.3	24
17	12.7	12.4	11.5	10.7	10.5	11.7	14.8	16.6	18.5	20.7	22.2	23.8	24.7	25.4	25.6	26.5	26.2	27.1	26.7	26.6	21.6	19.3	17.4	16.7	10.5	27.1	19.6	24
18	16.4	15.0	14.2	13.8	13.6	14.9	17.9	21.6	24.1	25.9	27.0	27.5	28.1	28.6	28.7	29.1	29.3	29.7	29.5	28.5	24.0	20.8	19.1	17.7	13.6	29.7	22.7	24
19	17.0	16.9	15.9	15.2	15.2	16.1	17.8	20.5	23.0	24.9	27.9	28.6	29.5	30.6	30.8	30.9	30.8	30.9	30.4	29.5	25.2	21.7	20.7	19.8	15.2	30.9	23.7	24
20	19.3	18.5	17.5	16.5	15.3	16.9	19.7	22.5	24.3	26.3	27.9	29.1	30.0	30.3	30.8	31.1	31.6	31.5	30.7	29.0	26.5	23.8	23.6	22.5	15.3	31.6	24.8	24
21	19.6	18.0	17.1	16.7	16.4	17.6	18.4	19.4	21.4	23.6	24.6	26.0	27.2	27.6	28.4	28.7	27.8	28.3	28.4	27.1	23.6	21.1	19.7	19.0	16.4	28.7	22.7	24
22	18.1	18.0	17.6	17.5	16.9	17.5	19.4	20.7	19.8	21.1	20.8	23.4	24.0	23.8	23.9	25.2	25.9	24.9	P	P	P	P	P	P	16.9	25.9	21.0	18
23	P	16.1	15.9	15.6	15.4	16.0	16.4	16.6	17.8	20.3	21.8	23.3	23.1	23.9	24.6	25.3	25.8	25.7	25.5	24.9	22.5	19.0	16.9	15.9	15.4	25.8	20.3	23
24	15.8	15.6	14.7	12.9	12.0	14.2	16.3	18.3	20.6	21.6	22.8	23.5	24.4	25.3	25.0	25.6	25.6	24.4	24.6	24.3	21.8	19.8	19.7	19.7	12.0	25.6	20.4	24
25	19.5	19.4	18.5	18.0	17.5	17.3	18.2	19.4	20.3	17.7	17.8	17.1	14.9	11.6	11.5	13.5	14.6	15.5	15.9	15.8	14.7	12.8	11.9	10.6	10.6	20.3	16.0	24
26	10.4	8.3	8.6	8.0	8.4	9.8	11.9	12.3	11.6	11.9	11.0	10.7	10.8	11.4	11.1	11.5	11.9	11.4	11.9	11.7	11.3	11.1	10.3	9.7	8.0	12.3	10.7	24
27	9.5	9.4	9.0	8.9	8.9	8.8	9.0	9.5	10.2	10.5	11.3	11.4	11.8	12.3	13.0	14.7	15.2	15.3	14.9	15.0	14.7	14.1	12.8	11.5	8.8	15.3	11.7	24
28	11.1	11.4	11.2	10.6	9.8	10.0	11.0	12.4	13.7	15.1	17.0	17.6	18.0	19.1	15.6	15.7	16.0	16.5	17.7	16.8	14.9	13.5	12.3	12.1	9.8	19.1	14.1	24
29	12.1	12.0	12.0	11.3	11.0	10.1	10.1	10.7	11.3	12.0	14.1	15.1	17.0	18.0	19.4	18.9	14.3	15.2	14.9	14.1	13.0	11.4	10.9	9.7	9.7	19.4	13.3	24
30	8.8	8.1	10.0	9.7	8.3	10.0	12.4	13.9	14.9	15.5	16.5	17.0	16.6	17.1	18.3	18.4	17.2	18.1	12.8	14.7	13.6	12.4	10.8	11.2	8.3	18.4	13.6	24
HOURLY MAX	19.6	19.4	18.5	18.0	17.5	17.6	19.7	22.5	24.3	26.3	27.9	29.1	30.0	30.6	30.8	31.1	31.6	31.5	30.7	29.5	26.5	23.8	23.6	22.5				
HOURLY AVG	11.7	11.3	10.9	10.5	10.2	10.9	12.2	13.3	14.5	15.5	16.3	17.0	17.7	18.3	18.4	19.0	19.0	19.1	18.4	17.8	16.0	14.2	13.1	12.3				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

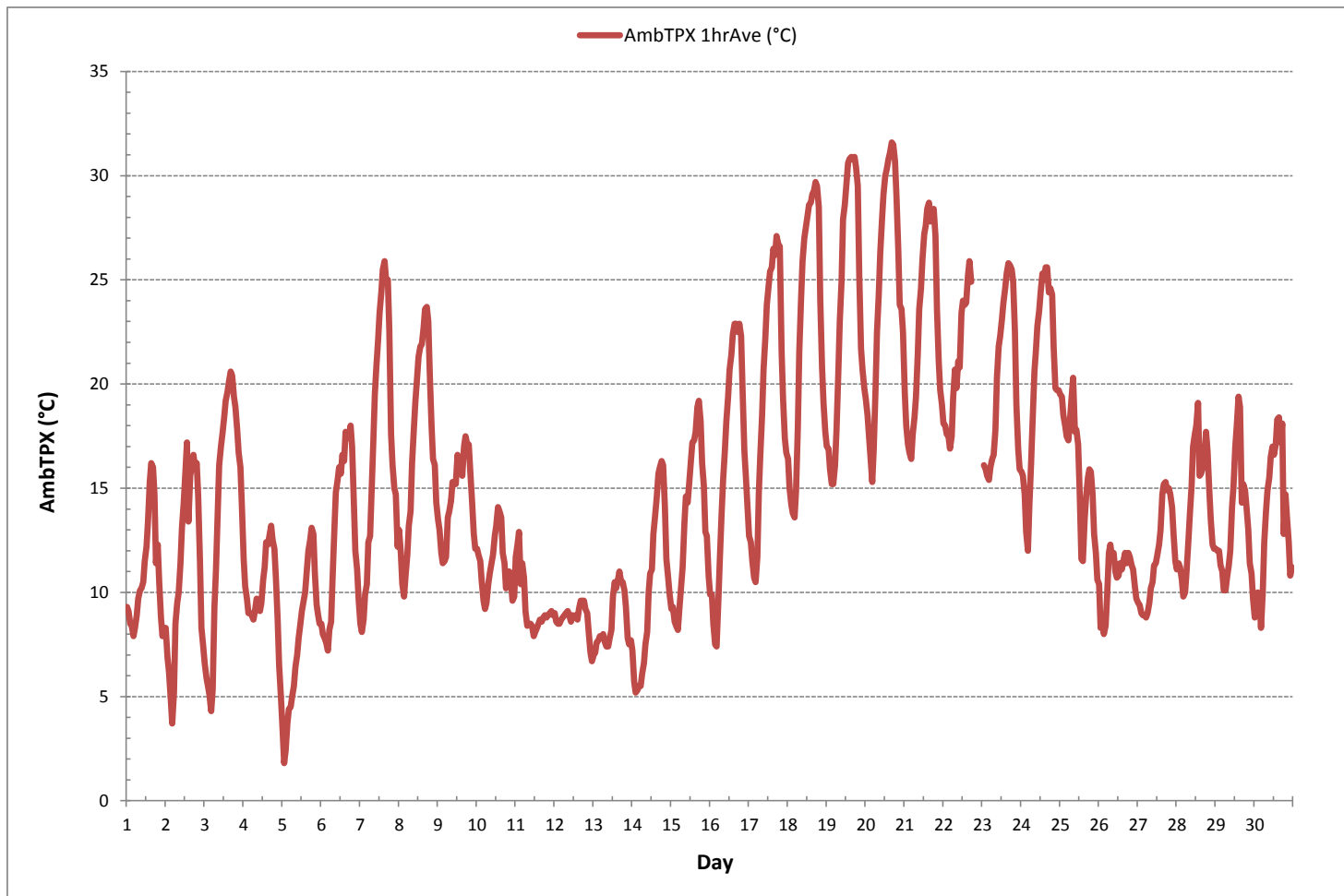
24 HR AVERAGES June 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	1.8 °C	@ HOUR	1	ON DAY	5
MAXIMUM 1-HR AVERAGE:	31.6 °C	@ HOUR	16	ON DAY	20
MAXIMUM 24-HR AVERAGE:	24.8 °C			ON DAY	20
OPERATIONAL TIME:					713 hrs
AMD OPERATION UPTIME:					99.0 %
STANDARD DEVIATION:	6.2	MONTHLY AVERAGE:			14.9 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE



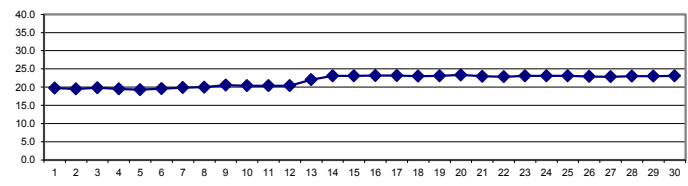
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	19.7	19.7	19.6	19.7	19.6	19.7	19.7	19.6	19.6	19.5	19.5	19.7	19.7	19.9	19.8	20.4	20.4	20.4	19.9	19.8	19.7	19.6	19.3	19.2	19.2	20.4	19.7	24	
2	19.2	19.2	19.0	19.0	19.2	19.0	19.4	19.3	19.2	19.4	19.4	19.4	19.5	19.9	19.9	19.9	20.0	19.9	19.6	19.7	19.9	19.8	19.7	19.7	19.0	20.0	19.5	24	
3	19.6	19.7	19.5	19.5	19.5	19.5	19.0	19.1	19.4	19.2	19.5	20.0	20.4	20.4	20.3	20.2	20.2	20.5	20.4	20.4	20.3	19.9	19.6	19.5	19.0	20.5	19.8	24	
4	19.6	19.5	19.3	19.4	19.5	19.4	19.6	19.5	19.5	19.5	19.4	19.4	19.4	19.6	19.6	19.7	19.7	19.7	19.8	19.8	19.6	19.4	19.4	19.3	19.3	19.8	19.5	24	
5	19.3	19.1	19.1	19.3	19.1	19.2	19.2	19.2	19.3	19.3	19.2	19.2	19.2	19.3	19.3	19.3	19.4	19.3	19.6	19.8	19.6	19.1	19.0	19.1	19.0	19.8	19.3	24	
6	19.1	19.1	19.3	19.2	19.1	19.3	19.4	19.6	19.7	19.6	19.3	19.3	19.1	19.6	19.4	20.0	20.5	20.3	20.5	20.5	20.0	19.6	19.6	19.7	19.1	20.5	19.6	24	
7	19.6	19.7	19.6	19.6	19.6	19.5	19.6	19.6	19.6	19.9	20.5	20.4	20.2	20.1	20.0	20.2	20.0	20.1	20.1	20.4	20.0	19.6	19.5	19.4	19.4	20.5	19.9	24	
8	19.6	19.7	19.6	19.6	19.6	19.5	19.6	19.7	19.7	19.7	20.3	20.5	20.3	20.2	20.3	20.1	20.2	20.5	20.4	20.4	20.4	20.2	20.1	19.6	19.5	20.5	20.0	24	
9	19.6	19.4	19.4	19.2	19.5	19.5	19.5	19.6	20.2	20.4	20.5	20.7	21.3	21.5	21.5	21.5	21.6	21.5	21.6	21.7	21.7	21.3	20.6	20.4	19.2	21.7	20.6	24	
10	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.3	20.3	20.3	20.3	20.4	20.4	20.3	20.4	20.3	20.4	20.3	20.4	20.4	20.4	20.4	20.5	20.3	20.5	20.4	24
11	20.4	20.4	20.4	20.4	20.4	20.5	20.3	20.3	20.3	20.4	20.4	20.4	20.3	20.4	20.3	20.3	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.3	20.5	20.4	24	
12	20.4	20.3	20.4	20.4	20.3	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.5	20.3	20.4	20.3	20.3	20.3	20.3	20.3	20.5	20.4	24
13	20.4	20.3	20.3	20.4	20.4	20.4	20.4	20.1	20.0	21.6	23.5	23.6	24.1	24.0	23.3	22.9	22.5	22.9	23.1	23.1	23.1	23.1	22.9	22.8	20.0	24.1	22.1	24	
14	23.0	22.8	22.8	22.8	22.9	22.8	22.9	22.8	22.9	23.0	22.9	23.0	23.1	23.0	23.1	23.3	23.3	23.3	23.6	23.5	23.3	23.2	23.1	23.1	22.8	23.6	23.1	24	
15	23.1	22.9	22.8	23.0	22.8	22.8	22.8	22.9	23.0	23.0	23.0	22.9	23.2	22.9	23.3	23.2	23.2	23.4	23.4	23.3	23.2	23.1	23.0	22.8	23.4	23.1	24		
16	23.1	23.0	22.9	22.8	22.9	22.8	23.0	23.0	22.9	23.2	23.0	23.1	23.2	23.4	23.2	23.4	23.4	23.5	23.6	23.6	23.6	23.5	23.2	23.1	22.8	23.6	23.2	24	
17	23.0	23.1	23.0	22.9	22.8	23.0	23.1	23.0	23.2	23.0	23.2	23.1	23.3	23.1	23.3	23.2	23.1	23.4	23.3	23.4	23.4	23.3	23.3	23.1	22.8	23.4	23.2	24	
18	23.0	23.1	23.1	23.0	22.9	22.9	23.1	23.0	23.2	23.0	23.1	22.9	22.8	22.8	22.5	22.5	22.8	23.1	23.3	23.1	23.3	23.3	23.1	23.0	22.5	23.3	23.0	24	
19	23.0	22.9	22.8	22.8	22.9	22.8	22.7	23.0	22.9	22.8	22.7	22.8	22.5	22.4	22.8	23.2	23.6	24.0	24.2	23.9	23.3	23.4	23.2	23.1	22.4	24.2	23.1	24	
20	23.1	23.0	22.9	22.8	22.9	23.0	22.8	23.0	23.1	22.9	23.0	22.5	22.6	22.9	23.2	23.8	24.3	24.8	25.0	24.8	23.7	23.2	23.2	23.1	22.5	25.0	23.3	24	
21	22.9	22.9	22.9	23.0	22.8	22.7	22.9	22.7	22.9	22.9	22.8	22.8	22.7	22.9	23.5	23.2	23.4	23.3	23.4	23.3	23.2	23.3	23.2	23.0	22.5	23.4	23.0	24	
22	23.0	22.8	22.9	22.8	22.7	22.9	22.8	22.9	22.9	22.8	23.0	22.8	22.9	23.0	23.0	22.7	22.9	22.8	P	P	P	P	P	P	22.7	23.0	22.9	18	
23	P	23.1	23.2	23.1	23.0	23.0	23.1	23.0	23.0	23.0	23.2	23.0	23.0	23.2	23.1	23.0	22.9	23.2	23.2	23.5	23.4	23.3	23.2	23.1	22.9	23.5	23.1	23	
24	23.2	23.0	22.9	22.9	23.0	22.9	23.0	23.0	23.0	23.1	23.0	23.3	23.3	23.1	23.0	23.1	22.8	23.3	23.1	23.4	23.3	23.3	23.2	23.3	22.8	23.4	23.1	24	
25	23.1	23.1	23.2	23.0	23.1	23.1	23.0	23.0	23.1	23.1	23.1	23.1	23.0	22.9	22.9	23.0	22.9	23.3	23.1	23.4	23.1	23.2	23.0	22.9	22.9	23.4	23.1	24	
26	22.9	22.9	22.9	22.8	23.0	22.9	23.1	23.1	23.3	23.1	23.3	23.2	23.1	23.1	22.7	22.7	22.9	22.8	23.0	22.8	22.9	22.9	22.9	22.7	22.7	23.3	23.0	24	
27	22.7	22.8	22.7	22.8	22.7	22.8	22.7	22.7	22.8	22.7	22.7	22.9	22.9	22.8	22.8	23.0	22.9	22.9	23.1	22.9	23.0	23.1	22.9	22.9	22.7	23.1	22.8	24	
28	22.9	23.0	22.9	22.9	22.8	22.8	23.0	22.9	22.8	23.0	22.9	23.2	23.1	23.2	23.1	23.2	23.1	23.2	23.3	23.1	23.3	23.0	23.0	22.8	23.3	23.3	23.0	24	
29	23.1	22.9	22.8	22.9	22.9	22.9	22.8	22.7	22.9	23.1	22.9	23.2	23.1	23.3	23.1	23.3	23.1	23.3	23.0	23.0	23.0	23.1	22.9	22.7	23.3	23.0	24		
30	22.9	22.9	23.0	22.8	22.8	22.9	22.9	22.8	23.1	22.9	23.2	22.9	23.2	23.2	23.2	23.3	23.3	23.3	23.3	23.2	23.2	23.2	23.1	22.9	22.8	23.3	23.1	24	
HOURLY MAX	23.2	23.1	23.2	23.1	23.1	23.1	23.1	23.1	23.3	23.2	23.5	23.6	24.1	24.0	23.3	23.8	24.3	24.8	25.0	24.8	23.7	23.5	23.3	23.3					
HOURLY AVG	21.5	21.6	21.5	21.5	21.5	21.5	21.6	21.5	21.6	21.7	21.8	21.8	21.8	21.9	21.9	21.9	22.0	22.1	22.1	22.1	22.0	21.9	21.7	21.7					

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

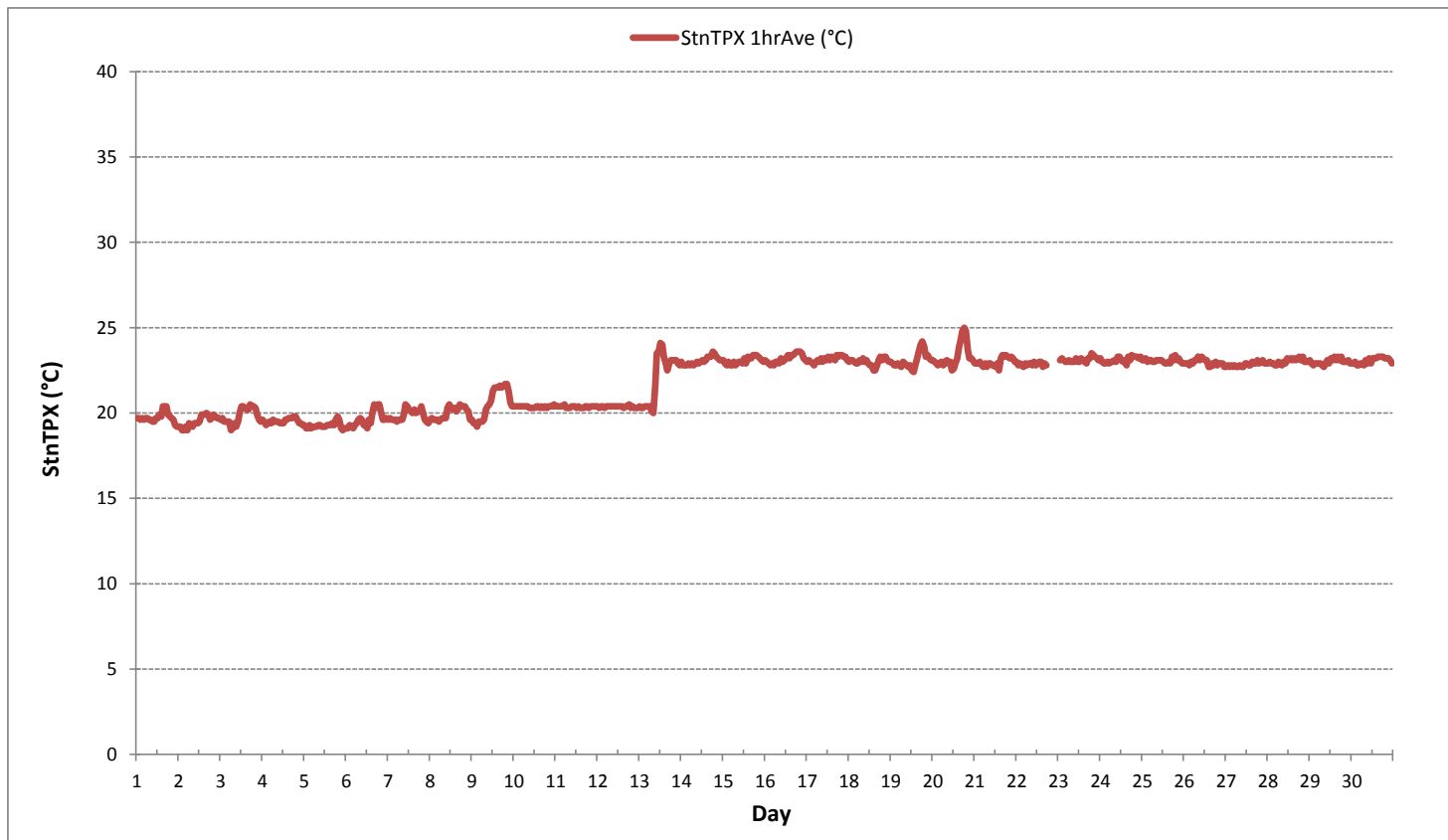
24 HR AVERAGES June 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.0 °C	@ HOUR	2	ON DAY	2
MAXIMUM 1-HR AVERAGE:	25.0 °C	@ HOUR	18	ON DAY	20
MAXIMUM 24-HR AVERAGE:	23.3 °C			ON DAY	20
OPERATIONAL TIME:					713 hrs
AMD OPERATION UPTIME:					99.0 %
STANDARD DEVIATION:	1.6	MONTHLY AVERAGE:			21.8 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100A Sulphur Dioxide Analyzer Calibration

Date:	June 13, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	930	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Brunton 05490 expires December 11, 2018	21	°C
Location/Station Name:	Reno	Weather Conditions:	Cloudy/Overcast		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	12:46	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	16:44	Cal Gas Expiry Date:	October 24, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		
Analzer:					
Serial Number/Owner:	841 Maxxam	Range ppb:	500		
Last Calibration Date:	May 19, 2018	As Found C.F.:	1.009		
Previous C.F.:	1.000	New C.F.:	1.001		

Calibration Standards:	Standard Calibration Points for Ranges								
Low Flow Meter ID/Expiry Date: Defender Low 152020 expires November 22, 2018	<table border="1"> <tr><th>Point</th><th>ppb</th></tr> <tr><td>High</td><td>380</td></tr> <tr><td>Mid</td><td>180</td></tr> <tr><td>Low</td><td>90</td></tr> </table>	Point	ppb	High	380	Mid	180	Low	90
Point	ppb								
High	380								
Mid	180								
Low	90								
High Flow Meter ID/Expiry Date: Defender High 148943 expires November 21, 2018									
Calibrator ID/Expiry Date: API id# 830 expires January 31, 2019									
Cal Gas Cylinder I.D. # : LL108015									
Cal Gas Conc. (ppm): 47.9									

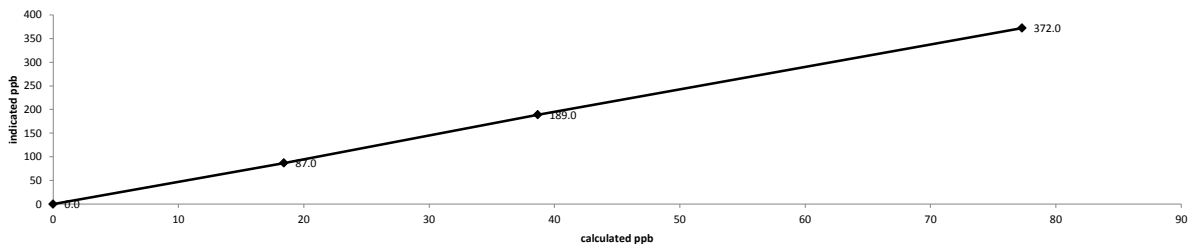
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	6020	0.00	6020	0.0	1.0	n/a
as found high	5977	46.82	6024	372.3	370.0	1.009
adjusted zero	6020	0.00	6020	0.0	0.0	n/a
adjusted high	5977	46.82	6024	372.3	372.0	1.001
mid	5993	23.77	6017	189.3	189.0	1.001
low	6006	11.14	6017	88.7	87.0	1.019
calibrator zero	6020	0.00	6020	0.0	0.3	n/a
Average C.F.=						1.007

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.999		0.95-1.05
b (Intercept as % of full scale)=	0.13%		± 3% F.S.
% change in C.F. from last cal=	-0.90%		± 10%

API 100A Sulphur Dioxide Analyzer Calibration

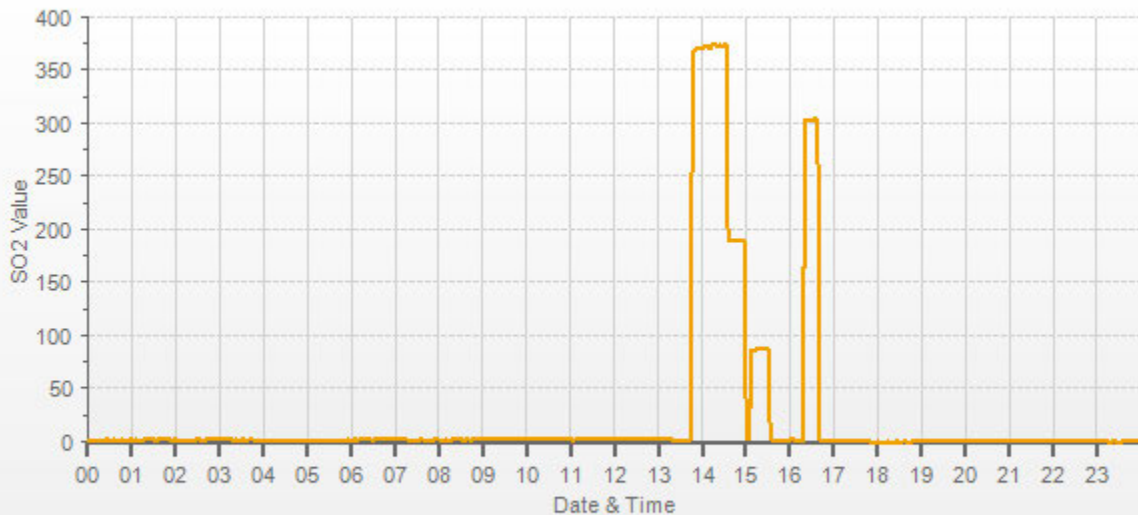


As found:		As left:	
Slope:	1.071	Slope:	1.073
Offset:	45.1	Offset:	46.7
Hvps:	763	Hvps:	763
Dcps:	2559	Dcps:	2560
Rcell Temp:	50.5	Rcell Temp:	50.4
Box Temp:	32.6	Box Temp:	30.9
Pmt Temp:	7.0	Pmt Temp:	7.1
Izs Temp:	35.1	Izs Temp:	35.1
Converter Temp:		Converter Temp:	
Pres:	24.7	Pres:	24.8
Samp Fl:	668	Samp Fl:	674
Pmt:	59.1	Pmt:	66.3
Uv Lamp:	1964.8	Uv Lamp:	1990.4
Lamp Ratio:	97.4	Lamp Ratio:	97.9
Str Lgt:	24.1	Str Lgt:	25.1
Drk Pmt:	24.6	Drk Pmt:	24.7
Drk Lmp:	-17.1	Drk Lmp:	-17.1
Expected Value:	305.1	Expected Value:	305.1

Comments:

The analyzer sample inlet filter was changed.
 The manifold blower was found to be working normally.

SO2[ppb] Station: PRAMP_RENO Daily: 18/06/13 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	June 13, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	930	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Brunton 05490 expires December 11, 2018	21	°C
Location/Station Name:	Reno	Weather Conditions:	Light rain/scattered showers		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	9:46	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	14:17	Cal Gas Expiry Date:	November 7, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD Nova CDN-101 #534		
Analyzer:					
Serial Number/Owner:	1162460022 Maxxam	Range ppb:	100		
Last Calibration Date:	May 3, 2018	As Found C.F.:	1.003		
Previous C.F.:	1.000	New C.F.:	1.000		

Calibration Standards: Low Flow Meter ID/Expiry Date: Defender Low 152020 expires November 22, 2018 High Flow Meter ID/Expiry Date: Defender High 148943 expires November 21, 2018 Calibrator ID/Expiry Date: API id# 829 expires January 31, 2019 Cal Gas Cylinder I.D. #: LL119432 Cal Gas Conc. (ppm): 10.3	Standard Calibration Points for Ranges <table border="1"> <tr><td>Point</td><td>ppb</td></tr> <tr><td>High</td><td>78</td></tr> <tr><td>Mid</td><td>38</td></tr> <tr><td>Low</td><td>19</td></tr> </table>	Point	ppb	High	78	Mid	38	Low	19	SO2 Scrubber Check (10 minutes): Start/End Time 24 hr.: 10:47 / 10:57 SO2 Analyzer Range: 500 Target Concentration (ppb): 380 As Found Zero: 0.0 Analyzer Response: (ppb): 0.0 Zero Corrected Result (ppb): 0.0
Point	ppb									
High	78									
Mid	38									
Low	19									

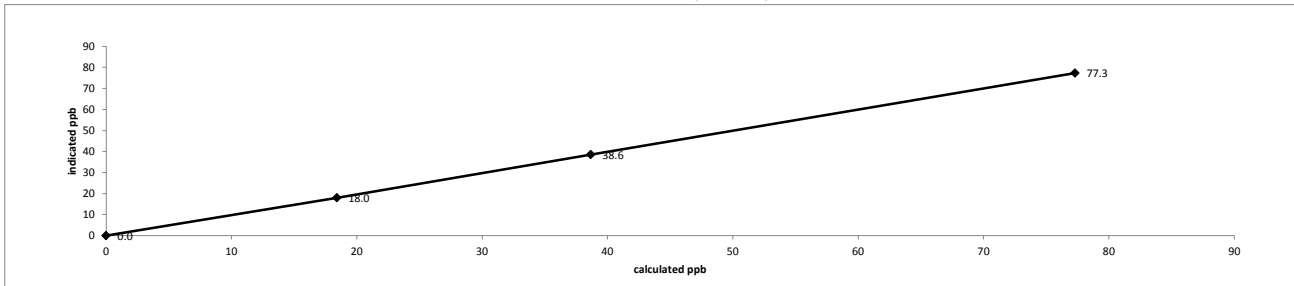
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total			
as found zero	7515	0.00	7515	0.0	0.0	n/a
as found high	7437	56.35	7493	77.3	77.0	1.003
adjusted zero	7515	0.00	7515	0.0	0.0	n/a
adjusted high	7437	56.35	7493	77.3	77.3	1.000
mid	7477	28.23	7505	38.7	38.6	1.003
low	7474	13.42	7487	18.4	18.0	1.023
calibrator zero	7515	0.00	7515	0.0	0.1	n/a
Average C.F. =						1.009

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.998		0.95-1.05
b (Intercept as % of full scale) =	0.19%		± 3% F.S.
% change in C.F. from last cal =	-0.35%		± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

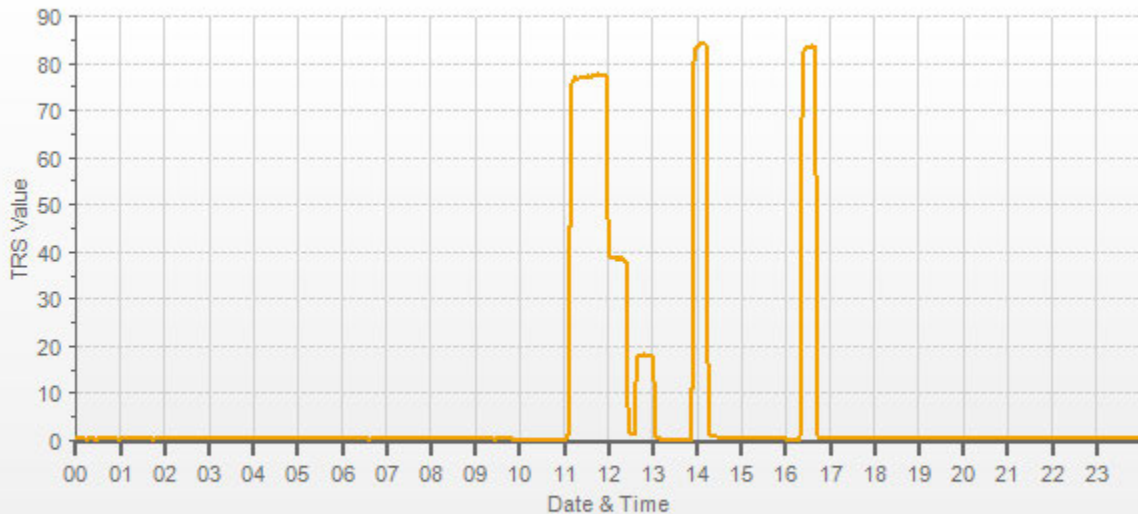


As found:	As left:		
Bkg:	2.13	Bkg:	2.04
Coef:	0.944	Coef:	0.945
Pmt:	-706.7	Pmt:	-706.7
Flash:	989	Flash:	990
Internal:	31.1	Internal:	33.3
Chamber:	44.9	Chamber:	45.0
Perm Oven Gas:	45.00	Perm Oven Gas:	45.00
Perm Oven Heater:	44.08	Perm Oven Heater:	44.10
Pressure:	632.5	Pressure:	634.6
Sample Flow:	0.405	Sample Flow:	0.408
Lamp Intensity:	82	Lamp Intensity:	84
Converter:	825	Converter:	825
Converter Set:	825	Converter Set:	825
Averaging Time:	120	Averaging Time:	120
Expected Value:	77.7	Expected Value:	84.0

Comments:

The analyzer sample inlet filter was changed.
 The manifold blower was found to be working normally.
 The analyzer cooling fan filter(s) were cleaned.

TRS[ppb] Station: PRAMP_RENO Daily: 18/06/13 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	June 13, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	930	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Brunton 05490 expires December 11, 2018	21	°C
Location/Station Name:	Reno	Weather Conditions:	Light rain/scattered showers		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	09:46 / 13:42	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	October 18, 2025		

Analyzer:	Serial Number/Owner: 1314057759 Maxxam	Correction Factors:			
Measured Flow:	1.22 L/min	Previous C.F.:	As Found C.F.:	New C.F.:	
Last Calibration Date:	May 3, 2018	CH₄ =	1.000	1.003	1.000
Range ppm:	20 CH4/20 NMHC/40 THC	NMHC =	0.999	0.994	1.001
		THC =	0.999	0.999	1.000

Calibration Standards:	Low Flow Meter ID/Expiry Date: Defender Low 152020 expires November 22, 2018	Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
High Flow Meter ID/Expiry Date: Defender High 148943 expires November 21, 2018	Calibrator ID/Expiry Date: API id# 830 expires January 31, 2019	Point	CH4	NMHC	THC
Cal Gas Cylinder I.D. #: LL107207	CH4 Cylinder Conc.: 600.0	High	13.00	13.00	26.00
CH₄ expressed as C₂H₆: 569.3	207.0 =C₂H₆ Cylinder Conc.	Mid	7.00	7.00	14.00
	1169.3 =total CH4 equivalent	Low	3.00	3.00	6.00

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015										Correction Factors:		
Calibrator Flow Rates (cc/min)				Calculated CH₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH₄	NMHC	THC
Point	Diluent	Cal Gas	Total Flow									
as found zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
as found high	2452	58.94	2511	14.08	13.36	27.45	14.04	13.44	27.49	1.003	0.994	0.999
adjusted zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
adjusted high	2452	58.94	2511	14.08	13.36	27.45	14.09	13.35	27.45	1.000	1.001	1.000
mid	2484	28.35	2512	6.77	6.42	13.20	6.78	6.45	13.24	0.999	0.996	0.997
low	2495	15.21	2510	3.64	3.45	7.09	3.64	3.45	7.10	0.999	1.000	0.999
calibrator zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
										Average C.F.=		
										0.999		

Linear Regression/Calibration Results:				LIMITS		
Correlation Coefficient =	CH₄	NMHC	THC	> or = 0.995		
Slope =	1.000	0.999	1.000	0.95-1.05		
b (Intercept as % of full scale)=	0.01%	0.04%	0.05%	± 3% F.S.		
% change in C.F. from last cal=	-0.32%	0.48%	0.02%	± 10%		

As Left Instrument Diagnostics:			
Interface Board Voltages:	Bias Supply: -290.1	Calibration History cnt'd:	NM Peak Area: 82697
Temperatures:	Detector Oven: 175.0	Crucial Settings:	Methane Start: n/a
	Filter: 175.1		Methane End: n/a
	Column Oven: 75.1		Backflush: n/a
	Internal: 34.2		NMHV Start: n/a
Cylinder Pressures/reg.:	Carrier: 600	Run History>1:	NMHC End: n/a
	Fuel: 2000	Date:	13Jun2018
	Span Gas: 1500	Time:	12:59
	Zero Air Generator: 50	CH₄ PK HT:	12799
Internal Pressures:	Carrier: 31.3	CH₄ RT:	12.0
	Fuel: 41.6	CH₄ Baseline:	2.061
	Air: 25.9	CH₄ LOD:	37
FID Status:	Status: LIT	CH₄ SD:	12
	Counts: 24173	CH₄ CONC:	10.06
	Flame: 405.0	NM PK HT:	2257
	Det Base: 175.0	NM Peak Area:	68043
Flame and Power Stats:	Last Power On: 09Jun2018@09:43	NM CONC:	10.03
	Flameouts: 12	NM Base Start:	1994
	Det Oven at Start: 166.8	NM Base End:	1998
	Col Oven at Start: 74.1	NM LOD:	17
Calibration History:	Time: 13Jun2018@10:26	NM Start IDX:	2
	Type: Span	NM End IDX:	89
	Status: Good	NM Max Slope:	1.2e+02
	Check/Adjust: Adjust	NM Min Slope:	-9.4e+01
	CH₄ Span Conc: 14.08	NM PT Count:	84
	CH₄ SP Ratio: 0.000786	Previous CH₄:	10.07
	CH₄ RT: 12.0	Previous NMHC:	10.96
	CH₄ PK IDX: 20	Previous THC:	21.05
	CH₄ PK HT: 17916	New CH₄:	10.08
	NM Span Conc: 13.36	New NMHC:	11.00
	NM SP Ratio: 0.000162	New THC:	21.11

Comments:

The analyzer sample inlet filter was changed.

A new hydrogen cylinder was installed. No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

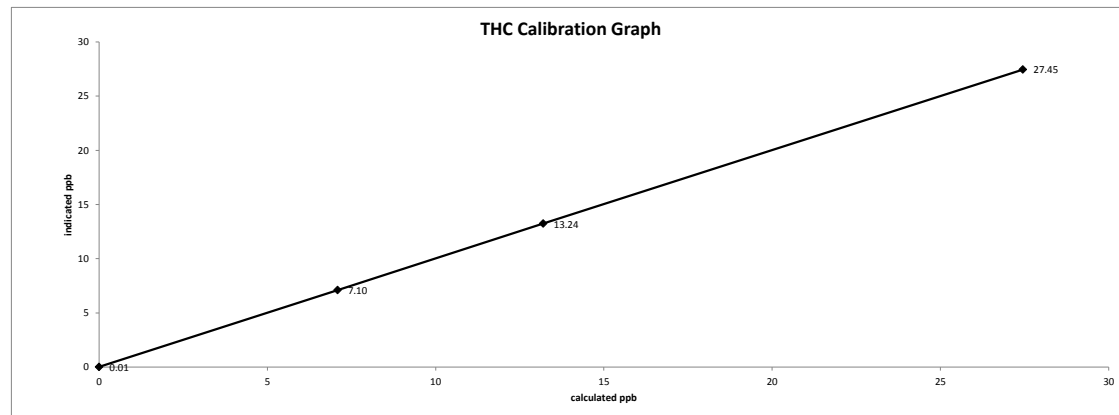
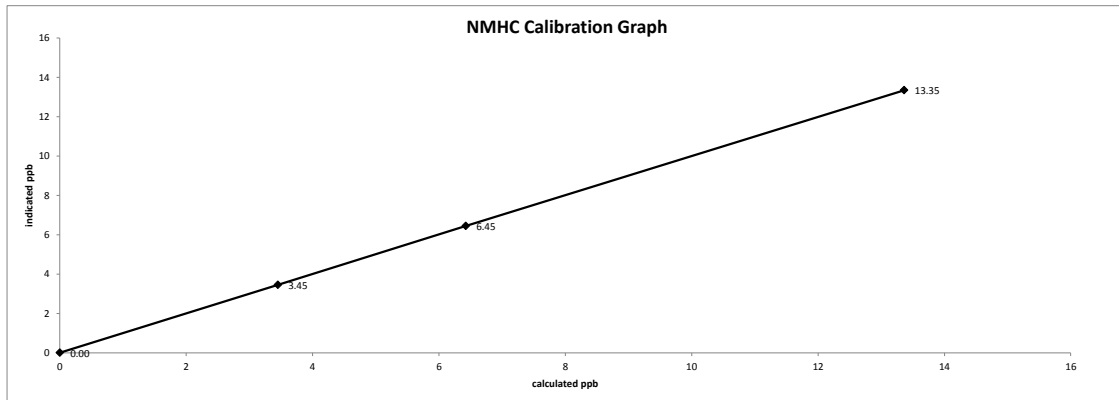
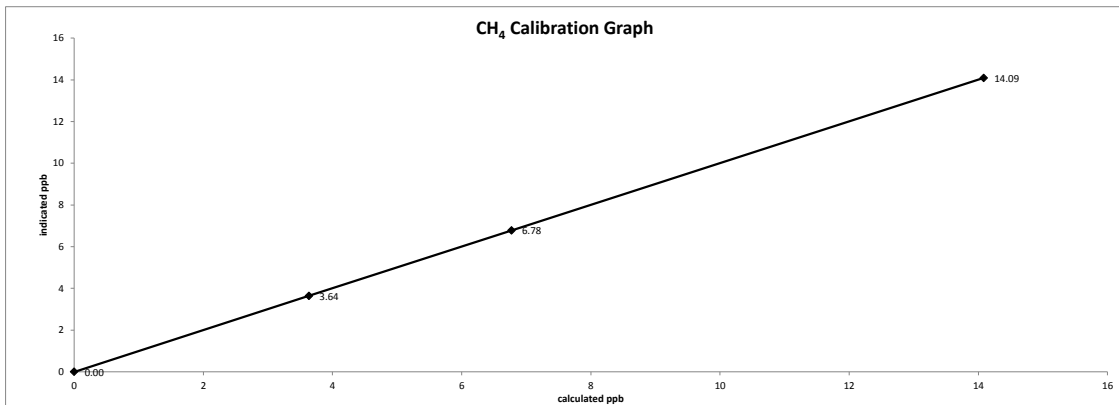
The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

The hydrogen pressure was low due to a leak resulting in an analyzer flame out. The leak was found in the tubing connected to the regulator which was repaired.

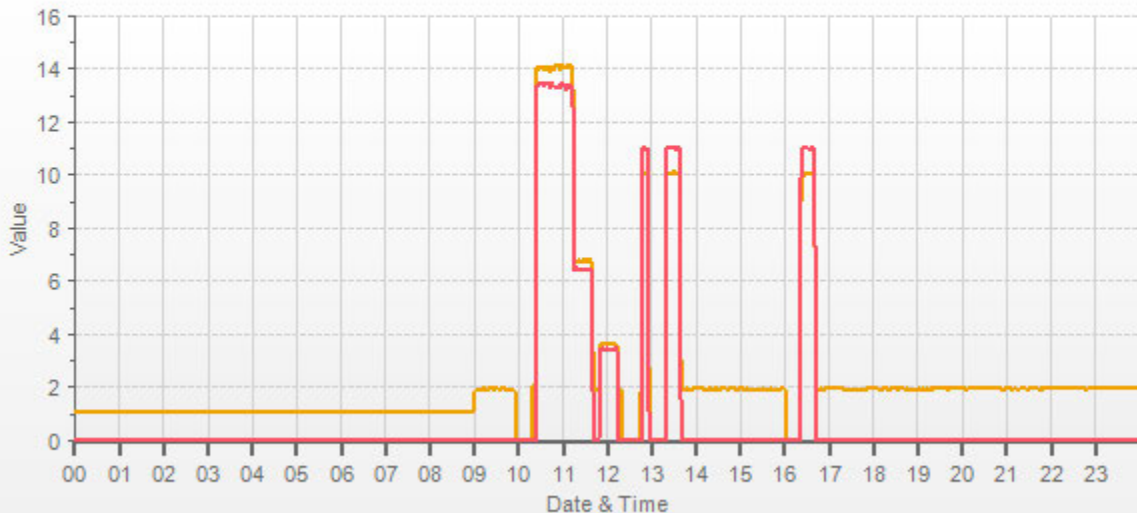
Date: June 13, 2018
Company/Airshed: PRAMP
Location/Station Name: Reno

Start/End Time 24 hr. (mst): 09:46 / 13:42
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution



Station: PRAMP_RENO Daily: 18/06/13 Type: AVG 1 Min. [1 Min.]

CH4 [ppm] NMHC [ppm]



WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	Performed By:	Limin Li
Audit Location:	RENO	Reviewed By:	Rob Fisher
Audit Date:	April 5, 2018	Start/End Time (mst):	16:00/16:30
Calibration Purpose:	routine annual	Weather Conditions:	Mainly sunny

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1V
Sensor Model:	5305VK	Velocity Unit Output Range:	0-200 KPH
Serial #:	149769	Direction Voltage Output Range:	0-1 V
Previous Cal/Audit Date:	April 6, 2017	Direction Unit Output Range:	0-360 DEG

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires September 25, 2018

Wind Speed Audit Data ****+/- 2% of the average correction factor is the limit****

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.5	0.998
2000	36.9	36.9	36.8	1.001
3000	55.3	55.2	55.2	1.001
4000	73.7	73.7	73.7	1.000
5000	92.2	92.1	92.1	1.001
6000	110.6	110.6	110.6	1.000
7000	129.0	129.0	129.1	1.000
8000	147.4	147.6	147.6	0.999
9000	165.9	166.2	166.2	0.998
10000	184.3	184.7	184.7	0.998
The audit meets AMD requirements.			Average Correction Factor=	1.000

Wind Direction Audit Data ****+/- 3° of the absolute average degrees difference for all points is the limit****

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.2	1.6	0.9
30	330	30	328	-0.5	2.4	1.4
60	300	61	299	-1.0	0.9	0.9
90	270	91	269	-1.1	1.4	1.2
120	240	120	239	0.4	0.9	0.7
150	210	150	210	-0.1	0.1	0.1
180	180	181	180	-0.6	-0.2	0.4
210	150	210	151	-0.4	-0.9	0.7
240	120	240	120	0.3	-0.4	0.4
270	90	269	91	1.4	-0.5	1.0
300	60	299	61	1.0	-0.8	0.9
330	30	328	30	2.3	0.2	1.3
355	0	353	0	2.5	0.2	1.4
The audit meets AMD requirements.				Average Absolute Degrees Difference=		0.9

Comments:

CALIBRATORS

Company: Maxxam

Operator: Christopher

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Mesa 530+</u>
Serial Number	<u>830</u>	Serial Number	<u>H-156312 L-156151</u>
Last Verification Date	<u>February 2017</u>	Temperature (°C)	<u>N/A</u>
SO ₂ Cylinder Conc.	<u>47.9</u>	Barometric Pressure	<u>N/A</u>
SO ₂ Cylinder S/N	<u>LL108015</u>		
Expiry Date	<u>October 2020</u>		

Flow Measurements

Pt. No. 1 80.0 **Pt. No. 2** 38.1 **Pt. No. 3** 19.4

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4998	0.767	0.779	2%	± 10%
\$4,999	0.365	0.368	1%	± 10%
\$5,003	0.186	0.184	-1%	± 10%
Absolute Average Percent Difference			0%	± 10%

LINEAR REGRESSION ANALYSIS

$y=mx+b$ (where x =calculated concentration, y =indicated concentration)

<u>SO₂</u>		<u>LIMITS</u>
Correlation=	1.0000	≥ 0.995
m (Slope)=	1.0175	0.90-1.10
b (Intercept % of FS)=	-0.2528	± 3% F.S.

AENV Standards

SO₂ Analyzer

Audit Calibrator

Make/Model Sabio 2010
Serial/AMU Number AMU 2092
SO₂
SRM Gas Cylinder No. CAL016625
Cylinder Conc. (ppm) 98.07

Make/Model Teco 43C
Serial/AMU Number AMU 1623
Last Calibration Date January 31, 2018
Full Scale (ppm) 1.0
Expiry Date January 2019

COMMENTS:

Auditor: Al Clark

Date: January 31, 2018

Operator Signature: 

Location: McIntyre Center Edmonton

Company Maxxam Operator: Christopher

Calibrator:				Flow Measurement Device:			
Make/Model	<u>API 700</u>			Make/Model	<u>Mesa 530+</u>		
Serial Number	<u>829</u>			Serial Number	<u>H-156312 L-156151</u>		
Last Verification Date	<u>January 2017</u>			Temperature (°C)	<u>N/A</u>		
NO Cylinder S/N	<u>EY0000715</u>			Barometric Pressure	<u>N/A</u>		
NO [PPM]	<u>50.7</u>	NOx [PPM]	<u>50.8</u>				
Expiry Date	<u>May 2020</u>						

Dilution Flow (sccm)					
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>	Pt. #3	<u>5000</u>
Gas Flow (sccm)					
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>	Pt. #3	<u>20</u>

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4950	79.8	0.787	0.788	0.783	-0.001	0.781	-1%	-1%
4958	37.2	0.380	0.381	0.378	-0.001	0.377	-1%	-1%
4960	18.5	0.189	0.189	0.188	-0.001	0.187	-1%	-1%
Absolute Average Percent Difference							1%	1%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

<u>NO</u>		<u>LIMITS</u>		<u>NOx</u>	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	0.9949	0.90-1.10		m (Slope)=	0.9912
b (Intercept % of FS)=	-0.0030	± 3% F.S.		b (Intercept % of FS)=	-0.0257

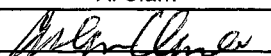
Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4950	0.000	0.000	0.776	0.000	0.776	NO ₂	% Diff. Limit
4950	0.500	0.476	0.300	0.474	0.775	0%	± 10%
4950	0.290	0.277	0.499	0.278	0.778	0%	± 10%
4950	0.095	0.090	0.686	0.093	0.779	3%	± 10%
Absolute Average Percent Difference						1%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

<u>NO₂</u>		<u>LIMITS</u>	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	0.9938	0.90-1.10	
b (Intercept % of FS)=	0.1802	± 3% F.S.	

<u>AENV Standards</u>		<u>NO_x Analyzer</u>	
Audit Calibrator		Make/Model <u>Teco 42i</u>	
Make/Model	<u>Teco 146i</u>	Serial/AMU Number	<u>AMU 1868</u>
Serial/AMU Number	<u>AMU 1809</u>	Last Calibration Date	<u>January 31, 2018</u>
SRM Gas Cylinder No.	<u>APEX1170572</u>	Full Scale (ppm)	<u>1.0</u>
Cylinder Conc. (ppm)	<u>49.99</u>	Cylinder Gas Expiry Date	<u>November 2020</u>

COMMENTS:

Auditor: Al Clark
Operator Signature: 

Date: January 31, 2018
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-484CGA

Company: Maxxam **Operators name:** Mike
Cylinder #: LL107207 **Conc CH4 (PPM)** 600/207 **Tolerance (%)** 2 **Certified By:** Praxair
Expiry Date: October 2025

Reference Calibrator and Gas:				Flow Measurement Device:	
Make/Model	<u>R&R MFC 201</u>			Make/Model	<u>Mesa Definer 220</u>
Serial Number	<u>AMU 1690</u>			Serial Number	<u>H-133034 / L-132702</u>
Last Verification Date	<u>December 13, 2017</u>			Temp. °C	<u>23.1 C</u>
Gas Type	<u>CH4</u>	Conc.	<u>990.4</u>	B.P.	<u>707 mmHg</u>
Cylinder Number	<u>5604875</u>	Expiry Date	<u>July 2021</u>		
Gas Type	<u>C3H8</u>	Conc.	<u>246.5</u>		
Cylinder Number	<u>XF003845B</u>	Expiry Date	<u>July 2022</u>		

Reference Analyzer:
Make/Model Teco 55i **Serial/AMU Number:** 2108
Instrument Settings **Zero:** N/A **Span:** N/A **Range:** 20.0
Last Calibration: **Date:** Dec 12/17 **C.F.** 1.000 **Done By:** Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH4	C3H8			CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.28	12.77	0.02	45.00	598	209
3547	39.8	6.71	6.47	0.01	89.12	598	210
3560	19.8	3.35	3.26	0.01	179.80	602	213
Average Cylinder Concentration:						599	211

	CH4	C3H8
Previous Stated Concentration PPM:	<u>600</u>	<u>207</u>
Percent variance from Stated:	<u>0</u>	<u>2</u>

Cylinder gas tolerances based on CH4 only
 Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:**
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark **Date:** December 13, 2017
Operator Signature: **Location:** McIntyre Center Edmonton

APPENDIX III
MAXIMUM INSTANTANEOUS DATA



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

DAY	HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.		
1	0:59	1	1	1	1	1	S	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	24		
2	1:59	1	1	1	0	S	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	24		
3	2:59	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	24		
4	3:59	1	1	S	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24		
5	4:59	1	S	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24		
6	5:59	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	24		
7	6:59	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1	24	
8	7:59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	24	
9	8:59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	24	
10	9:59	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	1	1	24	
11	10:59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	24	
12	11:59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	24	
13	12:59	1	1	1	1	0	1	1	1	1	2	1	2	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	2	1	24
14	13:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	1	0	24	
15	14:59	0	0	0	0	0	0	1	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
16	15:59	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
17	16:59	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
18	17:59	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	24	
19	18:59	1	0	1	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
20	19:59	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
21	20:59	1	0	0	0	0	0	0	0	0	S	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
22	21:59	0	0	0	1	0	0	1	S	1	1	1	1	0	0	0	0	0	0	0	P	P	P	P	P	P	0	1	0	18	
23	22:59	P	3	1	1	1	1	S	1	1	1	1	0	1	1	1	1	0	0	1	1	0	0	1	1	0	3	1	23		
24	23:59	1	1	1	0	1	S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	24	
25	0:00	1	1	1	1	S	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24	
26	1:00	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	1	24	
27	2:00	1	1	S	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	1	24	
28	3:00	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	24	
29	4:00	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	S	0	1	1	24		
30	5:00	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	S	1	0	1	1	24	
HOURLY MAX		1	3	1	1	1	1	1	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
HOURLY AVG		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	

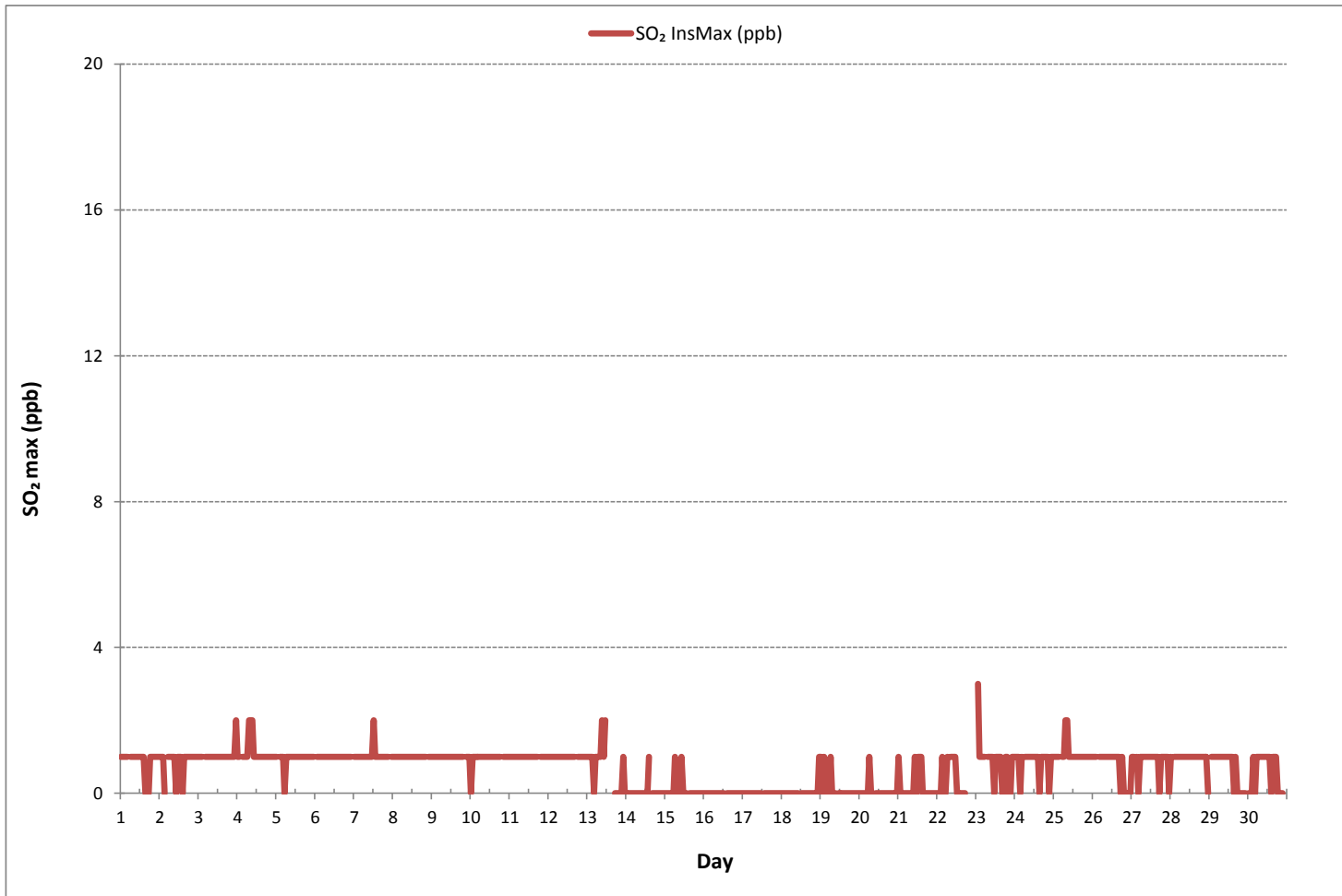
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	446
MAXIMUM INSTANTANEOUS VALUE:	3 ppb @ HOUR 1 ON DAY 23
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	1
OPERATIONAL TIME:	713 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY 1	0.45	0.48	0.50	0.45	0.50	S	0.53	0.48	0.48	0.45	0.53	0.45	0.50	0.45	0.45	0.46	0.45	0.42	0.50	0.48	0.48	0.53	0.58	0.81	0.42	0.81	0.50	24	
2	0.76	0.97	0.94	0.76	S	0.78	0.61	0.53	0.58	0.53	0.50	0.48	0.48	0.45	0.48	0.45	0.45	0.42	0.43	0.42	0.45	0.43	0.43	0.45	0.42	0.97	0.56	24	
3	0.56	0.61	0.63	S	0.64	0.78	0.63	0.51	0.53	0.48	0.45	0.43	0.45	0.43	0.45	0.45	0.45	0.45	0.43	0.42	0.45	0.43	0.48	0.45	0.42	0.78	0.51	24	
4	0.48	0.50	S	0.53	0.53	0.53	0.50	0.58	0.58	0.50	0.59	0.56	0.45	0.50	0.43	0.48	0.40	0.43	0.43	0.43	0.45	0.45	0.55	0.55	0.40	0.59	0.50	24	
5	0.50	S	0.58	0.50	0.53	0.48	0.50	0.42	0.45	0.43	0.45	0.40	0.42	0.40	0.43	0.43	0.42	0.42	0.45	0.43	0.43	0.48	0.45	0.50	0.40	0.58	0.46	24	
6	S	0.46	0.50	0.50	0.64	0.66	0.48	0.66	0.55	0.45	0.45	0.43	0.45	0.45	0.45	0.45	0.42	0.42	0.48	0.45	0.45	0.63	0.63	S	0.42	0.66	0.50	24	
7	0.61	0.50	0.48	0.48	0.45	0.48	0.50	0.42	0.42	0.48	0.50	0.45	0.45	0.48	0.45	0.43	0.42	0.42	0.42	0.56	0.55	S	0.58	0.42	0.61	0.48	24		
8	0.53	0.58	0.50	0.55	0.61	0.74	0.63	0.48	0.48	0.45	0.45	0.42	0.42	0.45	0.45	0.43	0.42	0.37	0.42	0.45	0.51	S	0.55	0.48	0.37	0.74	0.49	24	
9	0.48	0.48	0.53	0.64	0.64	0.94	0.86	0.74	0.76	0.68	0.66	0.66	0.58	0.56	0.53	0.53	0.53	0.53	0.50	0.53	S	0.50	0.53	0.58	0.48	0.94	0.61	24	
10	0.53	0.72	0.64	0.71	0.71	0.68	0.61	0.55	0.50	0.51	0.50	0.58	0.48	0.53	0.48	0.55	0.61	0.53	0.50	S	0.58	0.48	0.53	0.55	0.48	0.72	0.57	24	
11	0.53	0.68	0.76	0.73	0.69	0.66	0.81	0.63	0.56	0.58	0.58	0.56	0.53	0.56	0.58	0.50	0.53	0.50	S	0.53	0.50	0.50	0.53	0.48	0.48	0.81	0.59	24	
12	0.58	0.56	0.53	0.53	0.50	0.53	0.50	0.53	0.50	0.51	0.48	0.48	0.46	0.45	0.50	0.48	0.48	S	0.48	0.48	0.45	0.43	0.40	0.40	0.40	0.58	0.49	24	
13	0.37	0.37	0.37	0.42	0.40	0.45	0.40	0.45	0.35	C	C	C	C	C	C	0.51	S	0.51	0.45	0.48	0.45	0.45	0.45	0.48	0.35	0.51	0.43	24	
14	0.48	0.45	0.42	0.43	0.42	0.42	0.48	0.45	0.45	0.48	0.45	0.45	0.45	0.45	0.48	S	0.53	0.48	0.48	0.48	0.48	0.53	0.50	0.50	0.56	0.42	0.56	0.47	24
15	0.56	0.53	0.50	0.53	0.58	0.53	0.53	0.59	0.56	0.50	0.50	0.48	0.50	0.51	S	0.50	0.48	0.45	0.45	0.48	0.48	0.53	0.56	0.48	0.45	0.59	0.51	24	
16	0.65	0.61	0.63	0.61	0.61	0.68	0.65	0.58	0.55	0.53	0.55	0.50	0.48	S	0.50	0.45	0.42	0.45	0.45	0.48	0.55	0.68	0.60	0.55	0.42	0.68	0.55	24	
17	0.61	0.58	0.63	0.65	0.76	0.81	0.76	0.73	0.53	0.53	0.56	0.53	S	0.53	0.48	0.51	0.48	0.48	0.48	0.53	0.65	0.65	0.71	0.65	0.48	0.81	0.60	24	
18	0.78	0.86	0.68	0.81	1.15	1.23	1.28	1.20	0.78	0.68	0.58	S	0.53	0.50	0.48	0.48	0.48	0.50	0.48	0.50	0.61	0.73	0.76	1.07	0.48	1.28	0.75	24	
19	1.33	1.42	1.44	1.18	1.29	1.28	1.05	0.76	0.71	0.56	S	0.53	0.50	0.50	0.53	0.50	0.53	0.50	0.51	0.58	0.65	0.71	0.94	1.47	0.50	1.47	0.85	24	
20	1.21	0.71	0.68	0.76	1.10	2.48	2.46	0.78	0.58	S	0.53	0.51	0.48	0.50	0.48	0.45	0.50	0.45	0.53	0.68	0.78	1.15	0.94	0.53	0.45	2.48	0.84	24	
21	0.73	1.42	2.43	2.33	1.08	0.81	0.94	1.39	S	1.10	0.81	0.63	0.56	0.48	0.48	0.48	0.48	0.48	0.45	0.50	0.65	0.71	0.71	0.63	0.45	2.43	0.88	24	
22	1.26	1.05	0.68	0.78	1.45	0.91	0.61	S	0.66	0.66	0.66	0.53	0.53	0.48	0.50	0.50	0.45	0.48	P	P	P	P	P	P	0.45	1.45	0.72	18	
23	P	1.93	2.56	2.95	1.26	1.20	S	1.23	0.86	0.53	0.48	0.48	0.45	0.45	0.45	0.45	0.45	0.48	0.45	0.42	0.55	0.64	0.76	0.89	0.42	2.95	0.91	23	
24	2.56	1.02	1.10	1.44	1.31	S	0.71	0.68	0.58	0.58	0.55	0.50	0.50	0.45	0.50	0.48	0.45	0.50	0.48	0.50	0.55	0.50	0.50	0.55	0.45	2.56	0.74	24	
25	0.58	0.61	0.71	0.68	S	0.86	0.81	0.71	0.91	0.81	0.61	0.61	0.76	0.50	0.55	0.53	0.42	0.45	0.45	0.45	0.45	0.50	0.48	0.50	0.42	0.91	0.61	24	
26	0.50	0.73	0.81	S	0.73	0.71	0.45	0.48	0.48	0.50	0.48	0.48	0.48	0.50	0.48	0.45	0.50	0.48	0.48	0.48	0.48	0.53	0.48	0.53	0.58	0.45	0.81	0.54	24
27	0.63	0.56	S	0.61	0.61	0.63	0.55	0.53	0.50	0.48	0.48	0.48	0.48	0.45	0.48	0.48	0.45	0.45	0.45	0.45	0.48	0.48	0.55	0.55	0.45	0.63	0.51	24	
28	0.55	S	0.58	0.61	0.61	0.65	0.55	0.61	0.48	0.50	0.48	0.45	0.48	0.45	0.48	0.45	0.48	0.45	0.51	0.48	0.50	0.50	0.53	0.61	0.45	0.65	0.52	24	
29	S	0.56	0.58	0.63	0.61	0.50	0.48	0.50	0.55	0.58	0.58	0.48	0.48	0.48	0.45	0.43	0.50	0.53	0.50	0.48	0.48	0.50	0.58	S	0.43	0.63	0.52	24	
30	0.71	0.63	0.61	0.55	0.68	0.73	0.53	0.61	0.50	0.48	0.50	0.45	0.45	0.50	0.45	0.48	0.45	0.50	0.48	0.50	0.50	0.56	S	0.68	0.45	0.73	0.54	24	
HOURLY MAX	2.56	1.93	2.56	2.95	1.45	2.48	2.46	1.39	0.91	1.10	0.81	0.66	0.76	0.56	0.58	0.55	0.61	0.53	0.53	0.68	0.78	1.15	0.94	1.47					
HOURLY AVG	0.72	0.74	0.79	0.80	0.75	0.79	0.70	0.65	0.57	0.56	0.53	0.50	0.49	0.48	0.48	0.47	0.47	0.47	0.47	0.49	0.52	0.56	0.58	0.62					

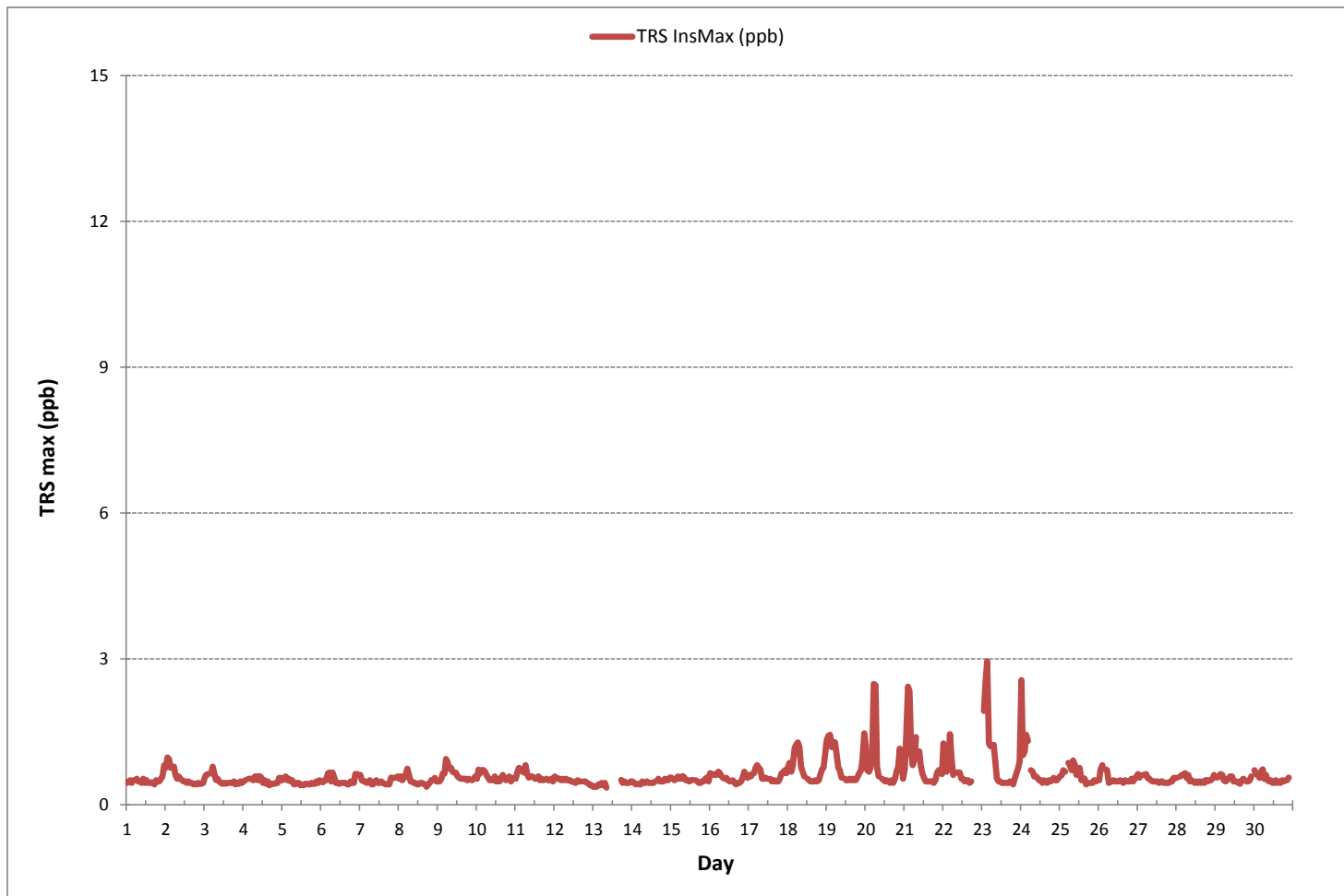
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675
MAXIMUM INSTANTANEOUS VALUE:	2.95 ppb @ HOUR 3 ON DAY 23
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	0.27
OPERATIONAL TIME:	713 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - June 2018

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.97	1.96	1.99	1.99	2.00	S	1.98	1.99	1.98	1.97	1.99	1.97	1.96	1.96	1.97	1.99	1.97	1.99	1.97	1.98	2.00	2.21	3.22	3.45	1.96	3.45	2.11	24	
2	2.24	2.78	2.62	2.17	S	2.99	1.97	1.97	1.98	1.96	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.95	1.94	1.95	1.94	1.95	1.97	1.97	1.94	2.99	2.09	24	
3	1.97	1.97	1.97	S	2.40	4.26	2.36	1.98	1.99	2.00	1.99	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.94	1.94	1.96	1.98	1.94	4.26	2.10	24		
4	1.96	1.96	S	1.95	1.95	1.96	1.96	1.98	2.02	2.10	1.99	1.94	1.95	1.95	1.94	1.94	1.93	1.93	1.94	1.94	1.93	1.94	1.95	1.96	1.93	2.10	1.96	24	
5	1.96	S	2.00	1.97	1.96	1.97	1.97	1.96	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.96	1.96	1.98	2.19	1.98	2.00	1.94	2.19	1.97	24	
6	S	2.18	2.14	2.03	2.07	2.19	2.16	2.17	2.05	1.94	1.94	1.94	1.94	1.94	1.95	2.00	1.94	1.94	1.94	1.94	2.16	2.52	2.59	S	1.94	2.59	2.08	24	
7	2.55	2.27	2.10	2.04	1.96	1.99	1.95	1.95	1.95	1.97	2.00	1.96	1.97	1.98	1.95	2.03	1.95	1.94	1.96	1.94	1.94	1.94	S	1.93	1.93	2.55	2.01	24	
8	1.96	1.95	1.94	1.97	3.27	1.98	1.97	1.95	1.94	1.93	1.93	1.93	1.93	1.93	X	X	X	X	X	X	X	X	X	X	X	1.93	3.27	2.04	14
9	X	X	X	X	X	X	X	X	X	X	S1	S1	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	S	1.94	1.98	1.99	1.93	1.99	1.94	12	
10	1.94	1.95	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.93	1.92	1.98	1.94	1.93	1.95	1.93	S	1.93	1.93	1.93	1.93	1.92	1.98	1.94	24	
11	1.93	1.94	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.95	1.94	24
12	1.93	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	1.94	1.94	1.94	1.94	X	X	X	X	X	X	X	X	X	X	1.93	1.95	1.94	15
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	1.95	1.95	S	1.95	1.95	1.95	1.96	1.97	1.96	1.97	1.95	1.97	1.96	14	
14	1.96	1.97	1.96	1.96	1.96	1.97	1.96	1.96	2.02	2.04	1.99	1.98	1.96	1.96	1.96	S	1.96	1.96	1.96	1.95	1.96	1.99	2.14	2.40	1.95	2.40	2.00	24	
15	2.56	1.96	1.95	1.96	2.47	2.37	1.96	1.97	1.99	1.96	1.97	1.96	1.95	1.95	S	1.95	1.95	1.96	1.96	1.95	1.96	1.96	1.99	2.01	1.95	2.56	2.03	24	
16	2.67	2.42	2.85	2.64	2.43	2.00	1.99	2.07	1.97	1.96	1.96	1.96	1.96	S	1.95	1.95	1.95	1.95	1.95	1.96	2.48	2.46	2.19	1.95	2.85	2.16	24		
17	2.51	2.56	2.46	2.32	2.26	2.33	2.11	2.11	2.09	2.06	2.07	2.08	S	2.03	2.02	1.96	1.97	2.02	1.94	1.98	2.06	2.59	2.66	2.59	1.94	2.66	2.21	24	
18	2.71	2.77	2.75	2.55	3.03	4.60	2.42	2.29	2.17	2.06	1.98	S	1.93	1.92	1.92	1.92	1.93	1.92	1.93	1.93	3.20	4.07	3.65	4.68	1.92	4.68	2.62	24	
19	4.39	2.56	3.39	3.69	3.34	2.33	2.27	2.14	2.09	2.02	S	1.98	1.98	1.97	2.18	1.97	1.94	2.25	1.96	2.04	2.25	2.70	2.52	2.80	1.94	4.39	2.47	24	
20	2.56	2.41	2.29	2.80	3.03	2.75	2.42	2.17	2.03	S	1.98	2.00	1.97	1.95	1.96	1.93	1.93	1.93	1.98	2.08	2.27	2.31	2.07	1.99	1.93	3.03	2.21	24	
21	2.55	2.62	2.55	2.71	2.58	2.34	2.07	2.09	S	2.10	2.14	2.05	1.99	1.99	1.97	1.97	1.96	1.98	2.00	1.99	2.02	2.35	2.32	2.38	1.96	2.71	2.21	24	
22	2.24	2.30	1.96	1.94	2.02	2.07	2.08	S	1.95	2.02	2.03	1.93	1.95	1.92	1.91	1.91	1.91	1.91	P	P	P	P	P	P	1.91	2.30	2.00	18	
23	P	1.96	1.97	2.01	1.98	1.95	S	1.95	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.93	1.92	1.94	1.96	1.97	2.97	3.01	1.91	3.01	2.04	23	
24	2.06	1.98	1.98	2.01	1.98	S	1.97	1.96	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.96	1.96	1.95	1.93	1.94	1.93	1.96	1.96	1.96	1.93	2.06	1.96	24	
25	1.99	1.98	1.99	2.00	S	2.04	2.02	2.00	2.02	2.00	1.98	1.98	1.96	1.94	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.00	1.93	2.04	1.97	24	
26	2.11	2.12	2.12	S	2.09	2.05	2.03	1.96	1.94	1.95	1.94	1.94	1.95	1.94	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	2.12	1.98	24	
27	1.95	1.95	S	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.96	1.96	1.97	1.98	1.94	1.98	1.95	24	
28	1.96	S	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.97	1.96	1.96	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.97	2.40	2.32	1.94	2.40	2.00	24
29	S	1.97	1.96	1.97	1.97	1.96	1.97	1.97	1.98	1.98	1.98	1.98	1.97	1.96	1.96	1.95	1.95	2.02	1.97	1.94	1.94	1.94	1.94	1.95	S	1.94	2.02	1.96	24
30	2.27	1.97	1.96	2.03	2.36	2.25	1.97	1.96	1.96	1.97	1.97	1.97	1.95	1.94	1.94	1.94	1.94	1.94	1.94	2.00	1.95	1.94	S	1.94	1.94	2.36	2.00	24	
HOURLY MAX	4.39	2.78	3.39	3.69	3.34	4.60	2.42	2.29	2.17	2.10	2.14	2.08	1.99	2.03	2.18	2.03	2.02	2.25	2.00	2.08	3.20	4.07	3.65	4.68					
HOURLY AVG	2.28	2.17	2.18	2.17	2.26	2.31	2.05	2.01	1.99	1.98	1.98	1.96	1.95	1.95	1.96	1.95	1.95	1.96	1.95	1.96	2.04	2.17	2.26	2.29					

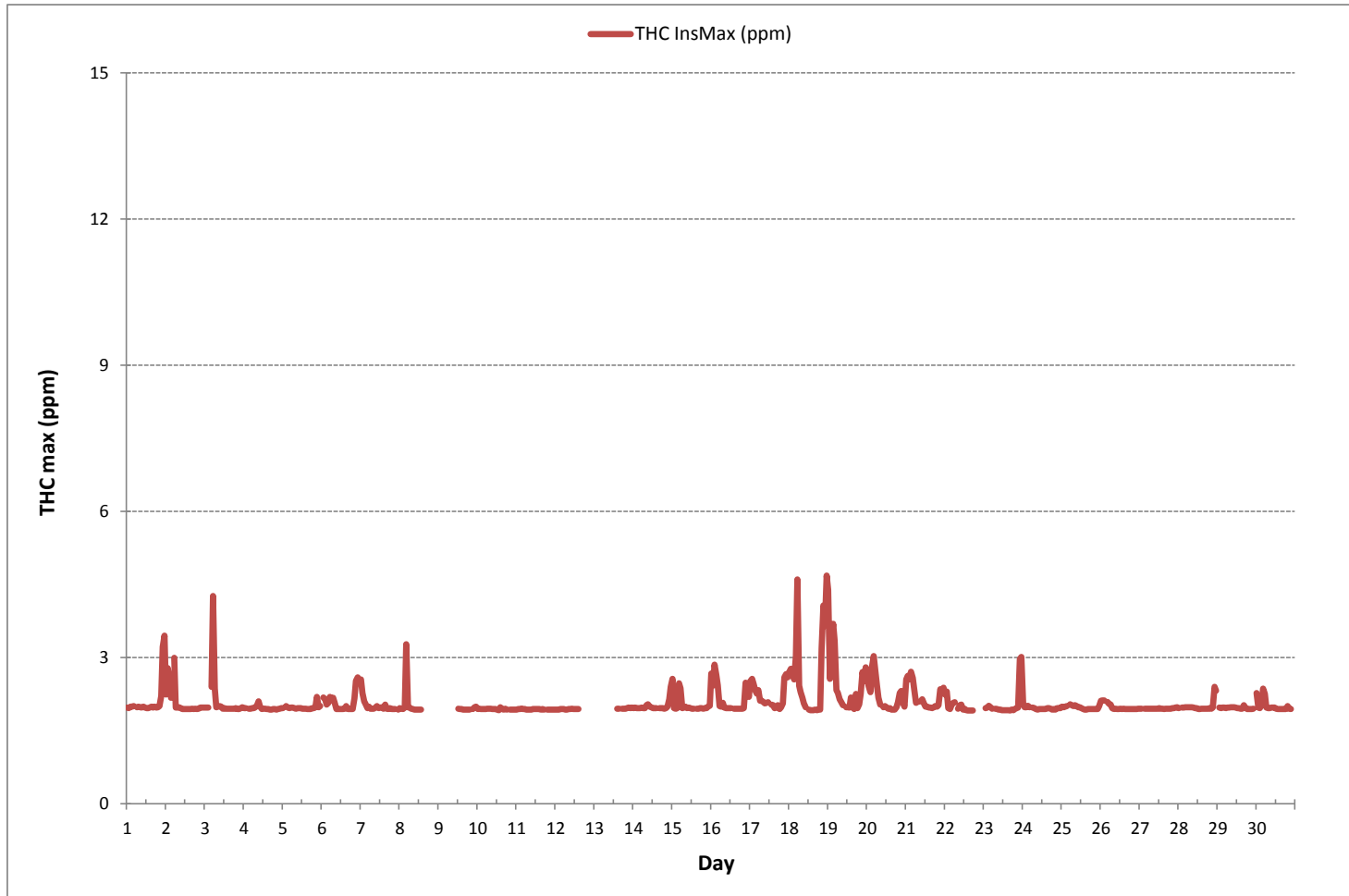
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	638
MAXIMUM INSTANTANEOUS VALUE:	4.68 ppm @ HOUR 23 ON DAY 18
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.32
OPERATIONAL TIME:	672 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY 1	1.97	1.96	1.98	1.98	1.99	S	1.97	1.98	1.97	1.96	1.98	1.97	1.96	1.95	1.96	1.98	1.97	1.99	1.96	1.97	1.99	2.20	3.22	3.45	1.95	3.45	2.10	24	
2	2.23	2.76	2.61	2.16	S	2.99	1.97	1.96	1.97	1.95	1.93	1.93	1.93	1.93	1.93	1.95	1.93	1.94	1.93	1.95	1.97	1.96	1.96	1.93	2.99	2.08	24		
3	1.96	1.97	1.97	S	2.39	4.25	2.36	1.97	1.98	1.99	1.99	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.95	1.94	1.93	1.96	1.97	1.93	4.25	2.09	24	
4	1.96	1.96	S	1.94	1.95	1.95	1.96	1.97	2.01	2.09	1.99	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.95	1.94	1.93	1.92	1.94	1.95	1.92	2.09	1.95	24	
5	1.96	S	1.99	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.95	1.95	1.97	2.18	1.97	1.99	1.93	2.18	1.96	24	
6	S	2.17	2.13	2.03	2.06	2.18	2.15	2.17	2.04	1.93	1.93	1.93	1.93	1.93	1.94	2.00	1.93	1.93	1.93	1.93	2.15	2.51	2.58	S	1.93	2.58	2.07	24	
7	2.54	2.27	2.09	2.04	1.96	1.98	1.95	1.94	1.94	1.97	2.00	1.96	1.96	1.97	1.95	2.02	1.94	1.93	1.95	1.93	1.93	1.93	S	1.92	1.92	2.54	2.00	24	
8	1.95	1.94	1.93	1.96	3.27	1.98	1.97	1.94	1.93	1.92	1.92	1.92	1.92	1.92	X	X	X	X	X	X	X	X	X	X	1.92	3.27	2.03	14	
9	X	X	X	X	X	X	X	X	X	X	S1	S1	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.92	S	1.93	1.97	1.98	1.92	1.98	1.94	12	
10	1.92	1.93	1.93	1.93	1.94	1.95	1.95	1.94	1.93	1.94	1.93	1.94	1.93	1.92	1.91	1.98	1.92	1.92	1.95	1.92	S	1.92	1.92	1.92	1.93	1.91	1.98	1.93	24
11	1.92	1.93	1.93	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.92	S	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.94	1.93	24
12	1.92	1.92	1.92	1.93	1.93	1.92	1.93	1.92	1.93	1.93	1.94	1.93	1.93	1.93	X	X	X	X	X	X	X	X	X	X	1.92	1.94	1.93	15	
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	1.94	1.94	S	1.94	1.94	1.95	1.95	1.96	1.96	1.96	1.94	1.96	1.95	14	
14	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.96	2.01	2.03	1.98	1.97	1.96	1.96	1.95	S	1.96	1.95	1.95	1.95	1.95	1.99	2.13	2.40	1.95	2.40	1.99	24	
15	2.56	1.95	1.94	1.95	2.46	2.36	1.95	1.97	1.99	1.95	1.96	1.95	1.95	1.95	S	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.99	1.99	1.94	2.56	2.02	24	
16	2.67	2.41	2.84	2.63	2.43	1.99	1.99	1.97	1.97	1.95	1.95	1.95	1.95	S	1.94	1.94	1.95	1.95	1.95	1.95	1.96	2.48	2.46	2.18	1.94	2.84	2.15	24	
17	2.50	2.55	2.45	2.31	2.25	2.32	2.11	2.11	2.08	2.05	2.06	2.07	S	2.02	2.02	1.96	1.97	2.01	1.94	1.97	2.05	2.54	2.65	2.59	1.94	2.65	2.20	24	
18	2.70	2.76	2.73	2.54	3.04	4.59	2.42	2.28	2.17	2.05	1.98	S	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	3.19	4.07	3.65	4.67	1.91	4.67	2.61	24	
19	4.39	2.55	3.39	3.69	3.33	2.32	2.26	2.13	2.08	2.02	S	1.97	1.97	1.96	2.18	1.97	1.93	2.25	1.95	2.04	2.22	2.70	2.51	2.79	1.93	4.39	2.46	24	
20	2.53	2.40	2.28	2.78	3.02	2.73	2.42	2.16	2.03	S	1.98	1.99	1.97	1.95	1.95	1.92	1.92	1.93	1.97	2.07	2.27	2.26	2.06	1.98	1.92	3.02	2.20	24	
21	2.54	2.61	2.54	2.71	2.57	2.32	2.06	2.08	S	2.09	2.13	2.04	1.99	1.99	1.96	1.96	1.96	1.98	1.99	1.99	1.97	2.34	2.31	2.38	1.96	2.71	2.20	24	
22	2.24	2.29	1.96	1.93	2.00	2.06	2.01	S	1.95	2.00	2.02	1.92	1.93	1.91	1.90	1.90	1.90	1.90	P	P	P	P	P	P	1.90	2.29	1.99	18	
23	P	1.96	1.97	2.00	1.97	1.95	S	1.95	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.95	1.96	2.97	3.01	1.90	3.01	2.03	23	
24	1.99	1.98	1.98	1.99	1.98	S	1.97	1.95	1.94	1.92	1.93	1.93	1.93	1.94	1.94	1.95	1.96	1.95	1.93	1.93	1.93	1.95	1.96	1.95	1.92	1.99	1.95	24	
25	1.98	1.98	1.98	2.00	S	2.04	2.01	1.99	2.01	2.00	1.97	1.97	1.95	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.99	1.92	2.04	1.96	24	
26	2.10	2.11	2.10	S	2.08	2.03	2.02	1.95	1.93	1.94	1.93	1.94	1.94	1.93	1.94	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.93	2.11	1.97	24	
27	1.94	1.95	S	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.97	1.98	1.94	1.98	1.95	24	
28	1.95	S	1.97	1.97	1.98	1.98	1.98	1.98	1.97	1.97	1.95	1.95	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.97	2.39	2.31	1.93	2.39	1.99	24	
29	S	1.97	1.96	1.96	1.96	1.96	1.97	1.96	1.97	1.98	1.98	1.96	1.95	1.95	1.94	1.95	2.00	1.97	1.93	1.93	1.93	1.93	1.94	S	1.93	2.00	1.96	24	
30	2.25	1.96	1.96	2.03	2.36	2.25	1.96	1.95	1.96	1.96	1.96	1.96	1.94	1.94	1.93	1.93	1.94	1.93	1.93	1.99	1.94	1.93	S	1.94	1.93	2.36	2.00	24	
HOURLY MAX	4.39	2.76	3.39	3.69	3.33	4.59	2.42	2.28	2.17	2.09	2.13	2.07	1.99	2.02	2.18	2.02	2.00	2.25	1.99	2.07	3.19	4.07	3.65	4.67					
HOURLY AVG	2.26	2.16	2.17	2.16	2.26	2.30	2.04	2.00	1.98	1.97	1.97	1.95	1.94	1.94	1.95	1.94	1.94	1.95	1.94	1.95	2.03	2.16	2.25	2.29					

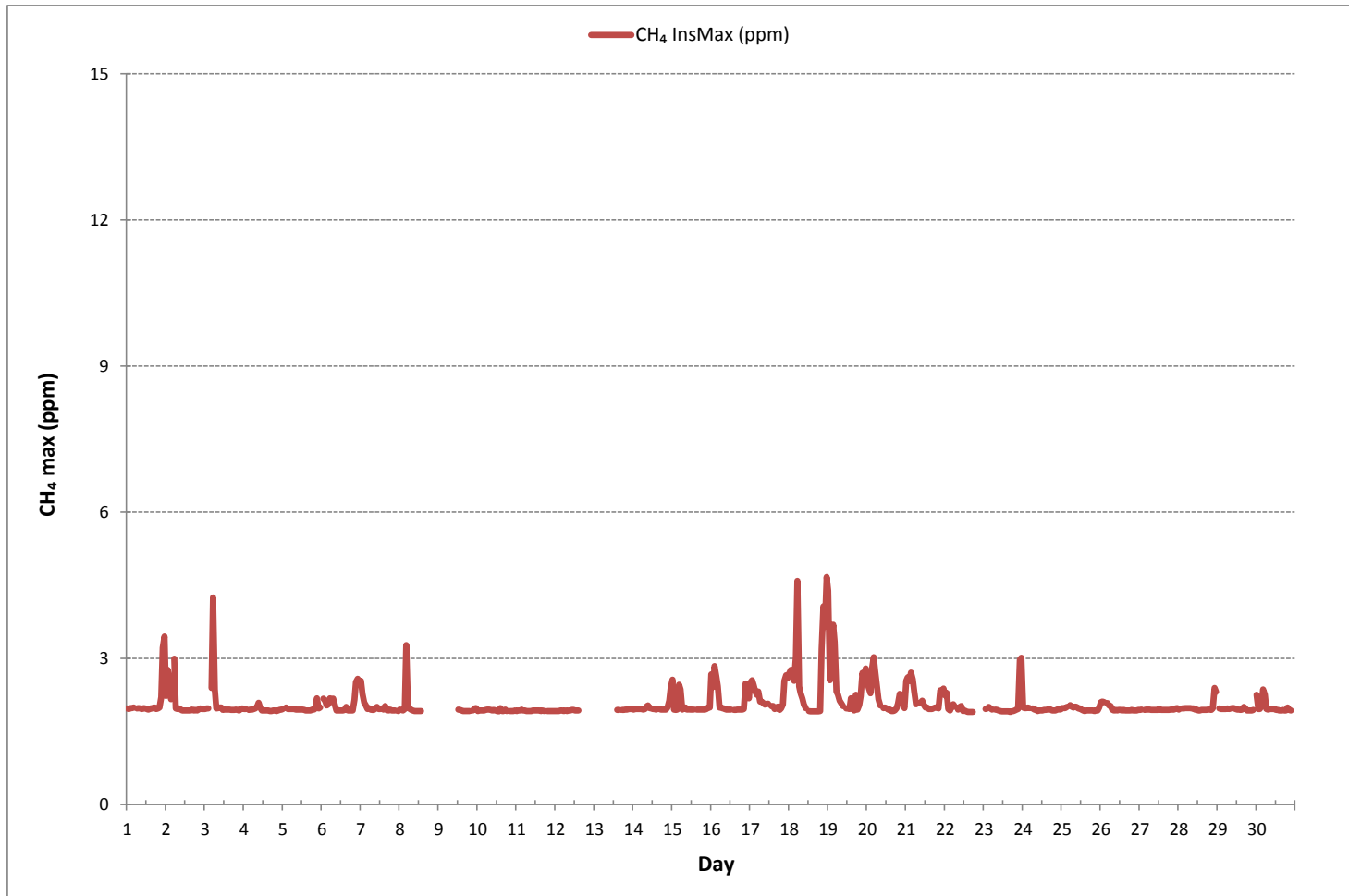
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	638
MAXIMUM INSTANTANEOUS VALUE:	4.67 ppm @ HOUR 23 ON DAY 18
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.32
OPERATIONAL TIME:	672 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY 1	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
2	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
3	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
4	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
5	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
6	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	14
9	X	X	X	X	X	X	X	X	X	X	S1	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	12
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	0.00	0.00	0.00	15
13	X	X	X	X	X	X	X	X	X	X	C	C	C	C	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.11	0.01	0.01	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.09	0.00	0.00	0.00	0.09	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02	0.11	0.00	0.11	0.01	0.01	24
19	0.08	0.00	0.05	0.07	0.00	0.00	0.06	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.08	0.01	0.01	24
20	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.10	0.01	0.01	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.06	0.00	0.00	0.07	0.01	0.01	24
22	0.10	0.00	0.00	0.00	0.00	0.00	0.08	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	P	P	P	P	0.00	0.10	0.01	18	
23	P	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	23
24	0.09	0.03	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.01	24
25	0.03	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	24
26	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.00	24
29	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.10	0.03	0.05	0.07	0.00	0.03	0.08	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.07	0.09	0.10	0.11					
HOURLY AVG	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01					

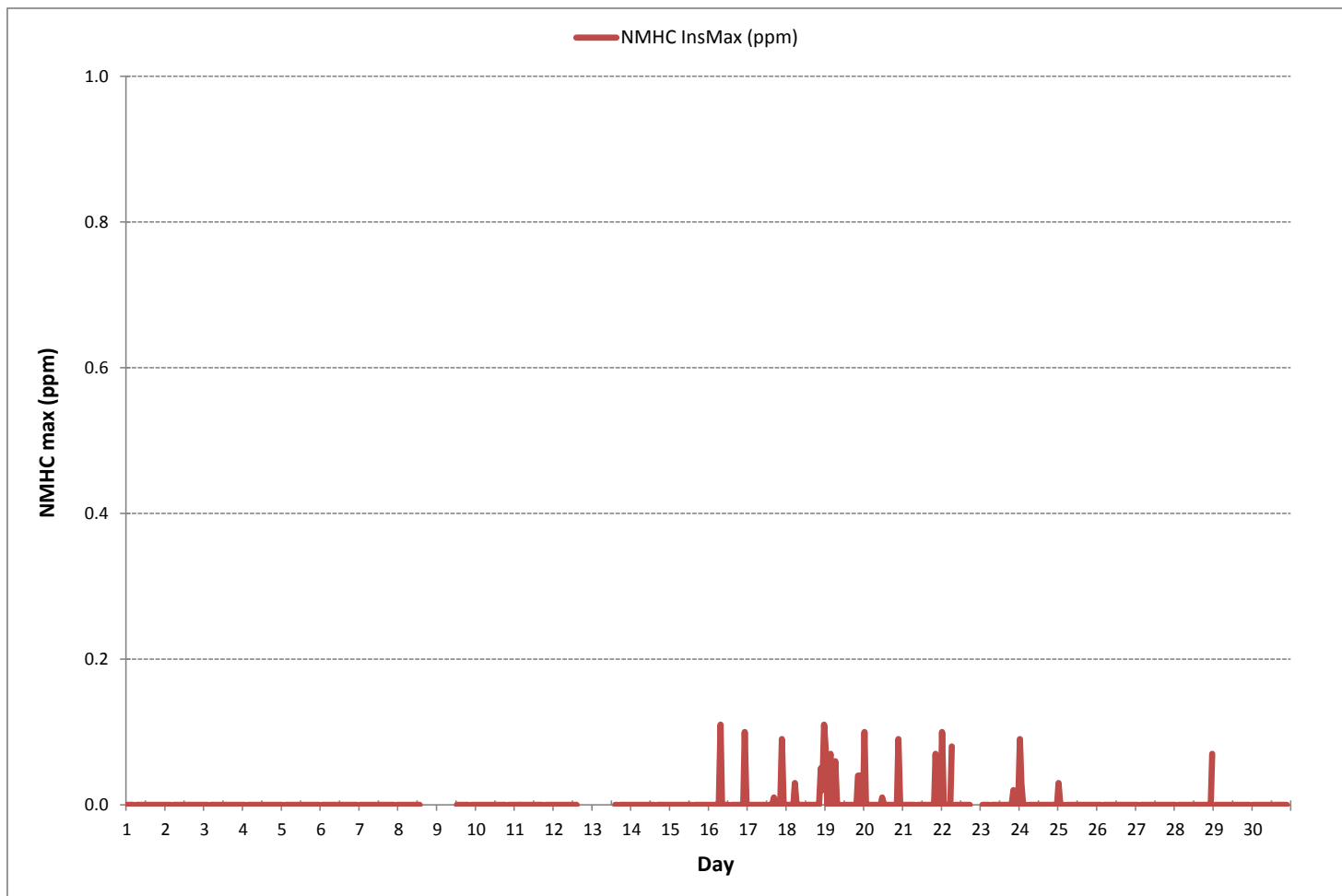
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	27
MAXIMUM INSTANTANEOUS VALUE:	0.11 ppm @ HOUR 7 ON DAY 16
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.01
OPERATIONAL TIME:	672 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Reno Station - June 2018

WIND SPEED Instantaneous Maximum (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	17.2	16.8	15.7	19.8	15.8	13.7	16.8	20.7	25.4	24.0	26.9	30.8	35.2	34.2	31.2	28.2	21.4	32.5	21.4	10.6	8.7	6.4	3.7	12.9	3.7	35.2	20.4	24
2	11.1	4.7	7.5	4.5	5.3	16.3	26.3	24.7	12.4	20.9	27.3	27.9	32.2	36.4	48.6	27.6	42.8	44.6	27.5	31.5	25.9	14.5	8.2	7.8	4.5	48.6	22.4	24
3	9.6	7.1	7.5	10.6	8.5	8.7	8.7	12.1	8.8	9.7	14.9	17.0	14.3	19.7	25.1	22.1	18.6	24.2	19.0	19.3	20.4	33.1	34.0	33.9	7.1	34.0	17.0	24
4	29.0	44.5	43.7	39.0	43.6	37.1	39.8	24.0	17.1	20.1	39.3	47.9	45.1	40.8	51.6	44.0	39.3	37.1	30.2	23.2	27.8	16.5	9.6	8.0	8.0	51.6	33.3	24
5	6.5	7.6	9.6	15.0	19.0	19.3	28.2	29.5	37.6	31.7	33.2	29.2	25.1	25.4	24.5	22.5	20.4	14.2	10.0	10.4	8.0	9.7	10.2	10.5	6.5	37.6	19.1	24
6	15.8	16.1	15.2	13.0	11.4	22.5	15.4	10.0	17.2	28.7	37.2	35.1	28.4	35.2	34.2	36.8	22.2	20.2	21.5	11.9	2.1	4.6	5.9	6.9	2.1	37.2	19.5	24
7	9.1	8.4	14.3	11.9	16.9	20.3	22.4	22.5	22.1	23.2	15.4	19.8	16.9	24.2	25.6	25.5	17.2	13.0	43.6	31.0	11.1	10.7	14.4	7.3	7.3	43.6	18.6	24
8	8.9	12.5	5.7	3.1	20.1	21.0	21.7	20.5	24.2	23.3	21.5	21.0	33.5	23.9	15.4	15.2	14.1	14.0	19.4	15.8	6.3	17.5	24.3	25.2	3.1	33.5	17.8	24
9	22.6	13.6	11.9	6.9	9.2	7.2	15.9	16.2	14.9	13.0	19.4	20.7	19.5	25.1	25.4	22.8	23.4	24.1	20.3	18.9	14.5	9.4	5.4	8.0	5.4	25.4	16.2	24
10	12.5	22.7	24.0	18.2	23.1	22.8	21.4	20.4	18.8	16.3	17.3	18.3	19.6	24.3	28.3	24.7	19.9	21.4	33.5	20.1	29.5	23.9	14.1	28.5	12.5	33.5	21.8	24
11	38.4	40.0	54.4	32.1	40.5	30.2	30.1	31.8	29.6	36.9	46.5	40.1	45.3	52.0	46.0	56.1	54.4	43.6	48.4	53.1	32.9	32.3	32.5	31.7	29.6	56.1	40.8	24
12	69.4	44.8	47.3	44.9	44.2	32.8	32.5	35.8	41.8	40.2	39.8	38.5	45.2	36.1	41.9	25.8	20.7	21.5	14.0	16.5	22.8	16.8	6.1	6.8	6.1	69.4	32.8	24
13	9.7	11.0	15.3	13.4	11.4	15.7	9.4	24.9	19.3	18.3	16.3	14.5	19.5	22.3	21.4	23.0	24.8	15.3	15.9	11.0	10.6	4.5	4.7	11.3	4.5	24.9	15.1	24
14	12.6	14.4	11.1	10.3	5.7	6.3	7.6	9.6	6.8	6.2	9.9	9.9	13.1	19.2	19.9	16.8	17.4	18.3	16.5	12.5	6.8	2.4	7.7	4.0	2.4	19.9	11.0	24
15	13.8	8.7	9.0	8.5	4.9	6.7	10.0	10.8	10.2	16.8	18.7	19.5	23.9	22.2	23.8	20.7	26.3	24.3	23.3	26.3	18.7	10.4	7.8	7.0	4.9	26.3	15.5	24
16	8.3	7.4	6.0	7.1	9.2	12.8	11.5	9.5	14.5	16.0	22.1	19.7	21.9	19.9	21.4	17.2	17.6	18.7	14.1	14.5	9.5	6.3	9.0	7.5	6.0	22.1	13.4	24
17	5.1	8.2	4.9	9.9	9.0	11.1	15.8	17.2	14.2	16.1	19.1	17.2	17.2	22.5	16.7	16.6	17.3	13.8	10.0	6.6	5.6	4.5	3.1	4.4	3.1	22.5	11.9	24
18	3.4	4.8	5.0	6.1	3.6	6.3	6.3	6.0	5.5	7.5	8.4	11.7	12.6	20.1	18.8	14.8	18.4	12.6	8.2	8.1	3.9	7.6	4.4	5.9	3.4	20.1	8.8	24
19	7.9	5.8	5.2	3.2	4.4	6.3	11.0	9.2	12.2	10.2	17.1	18.2	16.7	15.0	17.8	14.9	18.0	14.7	13.8	6.7	2.8	7.1	5.0	7.6	2.8	18.2	10.5	24
20	10.5	11.9	8.5	7.4	7.5	6.6	7.7	11.2	12.0	12.3	9.8	12.5	13.7	13.9	13.7	13.2	10.0	19.1	12.5	12.8	9.4	6.5	11.1	16.6	6.5	19.1	11.3	24
21	12.5	6.4	9.5	8.3	12.1	13.3	18.4	13.2	9.9	6.9	8.3	12.1	11.4	13.5	11.4	18.8	17.6	13.5	9.3	11.1	10.6	6.1	6.0	7.2	6.0	18.8	11.1	24
22	14.8	26.7	19.6	20.7	15.1	6.4	14.9	16.9	18.7	17.1	19.2	21.7	28.9	28.9	26.1	25.3	20.2	17.5	P	P	P	P	P	P	6.4	28.9	19.9	18
23	P	13.9	13.0	8.4	11.1	9.8	15.8	11.1	13.0	20.0	22.5	24.9	24.4	22.5	29.3	22.2	19.4	20.5	20.8	16.4	11.1	4.9	4.4	4.3	4.3	29.3	15.8	23
24	10.9	10.1	11.3	8.1	8.9	11.5	14.8	16.0	26.3	22.8	22.7	28.1	30.3	21.4	19.1	14.2	15.3	8.9	9.7	17.1	11.7	15.0	25.8	33.8	8.1	33.8	17.2	24
25	30.0	30.0	22.3	24.3	13.5	11.9	21.1	22.2	18.4	24.8	28.8	30.4	40.5	54.6	43.2	49.1	49.1	39.4	40.1	26.0	33.9	28.0	32.1	20.3	11.9	54.6	30.6	24
26	27.4	14.0	20.6	19.6	17.7	23.7	25.2	48.7	39.1	44.6	44.8	51.5	40.4	51.0	43.2	43.1	42.2	39.6	30.6	25.9	26.7	31.7	39.0	35.0	14.0	51.5	34.4	24
27	33.7	36.1	38.2	38.2	34.0	35.9	31.9	33.2	34.0	31.3	42.2	38.9	42.8	40.7	36.7	43.1	37.0	29.8	26.2	19.4	19.7	13.4	6.7	10.4	6.7	43.1	31.4	24
28	12.4	16.0	15.4	15.8	14.1	16.2	15.2	16.5	17.7	21.2	23.6	27.3	26.3	31.6	44.6	27.0	31.2	20.0	9.4	6.8	4.9	2.6	5.7	10.7	2.6	44.6	18.0	24
29	12.3	14.8	16.3	12.5	11.1	15.9	15.4	17.8	20.6	15.2	20.8	19.3	20.5	17.1	20.1	27.8	26.6	24.2	14.5	21.8	7.9	12.6	13.1	6.3	6.3	27.8	16.9	24
30	8.6	9.3	12.0	9.5	5.0	11.9	18.5	21.3	25.0	28.7	27.8	39.6	33.9	28.1	31.4	35.1	34.5	30.9	8.0	11.3	9.4	22.5	20.8	5.0	39.6	21.6	24	
HOURLY MAX	69.4	44.8	54.4	44.9	44.2	37.1	39.8	48.7	41.8	44.6	46.5	51.5	45.3	54.6	51.6	56.1	54.4	44.6	48.4	53.1	33.9	33.1	39.0	35.0				
HOURLY AVG	16.7	16.3	16.7	15.0	15.2	16.0	18.3	19.5	19.6	20.8	24.0	25.4	26.6	28.1	28.5	26.5	25.3	23.2	21.2	17.7	14.3	12.7	13.0	13.8				

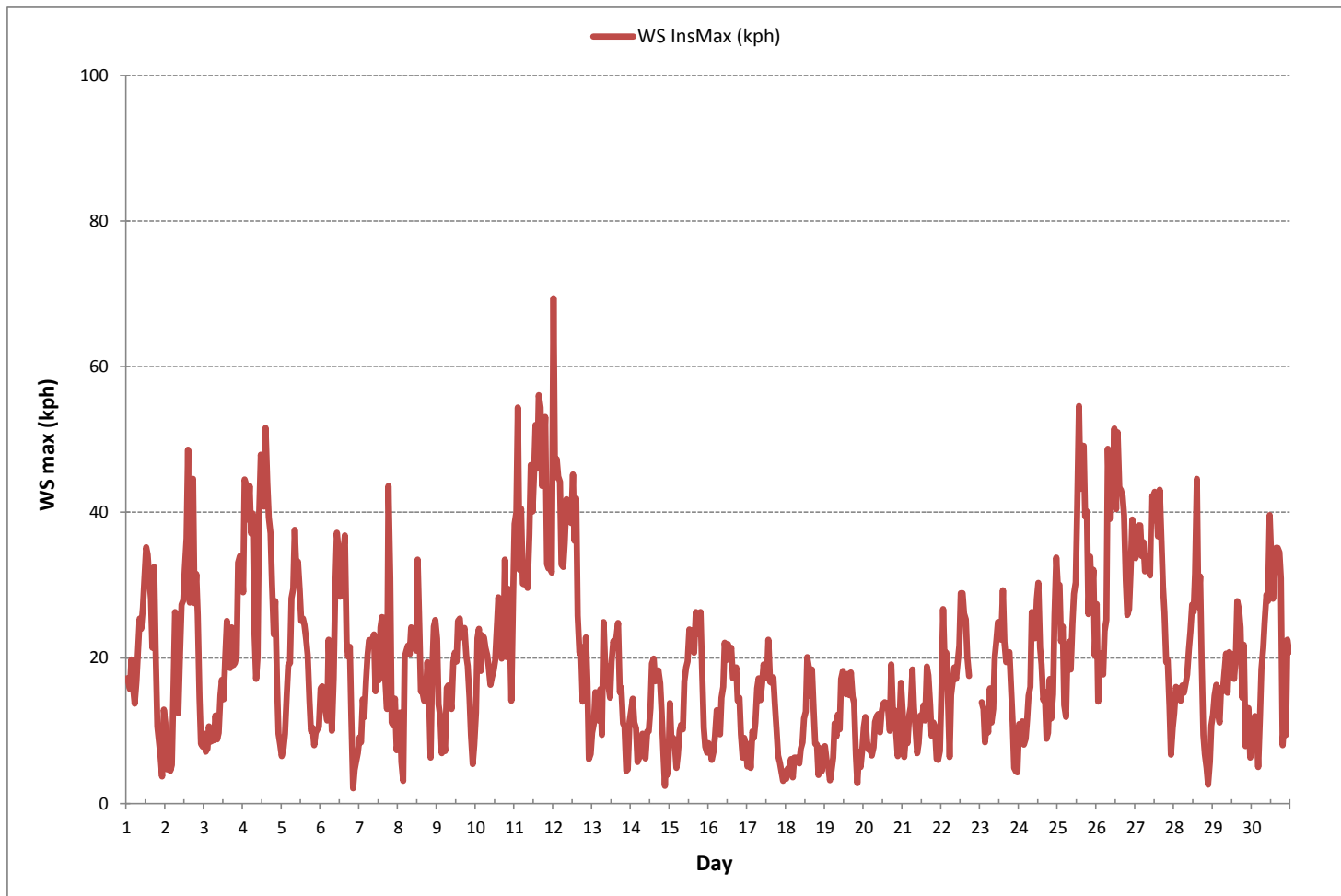
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	69.4	kph	@ HOUR	0	ON DAY	12	
OPERATIONAL TIME:						713	hrs

WIND SPEED Instantaneous Maximum (WS kph)

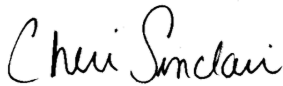


***APPENDIX IV
REPORT CERTIFICATION FORM***

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
YES	NA
Company Name (if applicable)	Industrial Operation Name (if applicable)
Peace River Area Monitoring Program Committee	Reno Station
Name of the Representative of the Person Responsible	Position / Title of the Representative of the Person Responsible
Mike Bisaga / Lily Lin	Technical Program Managers
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Name of External Person Certifying the Report	Position / Title of External Person Certifying the Report
Cheri Sinclair	Supervisor, Customer Service, Air Services
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
Maxxam Analytics, A Bureau Veritas Group Company	B.Sc.

Maxxam Analytics is the designated contractor conducting monitoring and reporting activities. I certify that the submitted data has been (a) reviewed and validated as per the AMD Chapter 6: Ambient Data Quality. I certify that the submitted report (b) accurately reflects the monitoring results and reporting timeframe and (c) meets the specified analysis, summarization and reporting requirements as per the AMD Chapter 9: Reporting.



Signature of the External Person Certifying the Report

16-July-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u>	Project #: <u>196-2018-06-93-C</u>
Site: <u>Reno Station</u>	Contact: <u>Karla Reesor</u>

Level 0 Preliminary Verification	<hr style="width: 100%;"/>	Date <u>13-July-2018</u>
Level 1 Primary Validation	<hr style="width: 100%;"/>	Date <u>13-July-2018</u>
Level 2 Final Validation	<hr style="width: 100%;"/>	Date <u>16-July-2018</u>
Level 3 Independent Data Review	<hr style="width: 100%;"/>	Date <u>16-July-2018</u>
Post-Final Validation	<u>NA</u>	Date <u>NA</u>

Notes
The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. This validation is performed on an annual basis.