

Alberta Environment and Parks (AEP)

Air.Reporting@gov.ab.ca

April 30, 2018

Subject: Monthly Report Submission for the PRAMP Reno AQM station

Peace River Area Monitoring Program Committee (PRAMP) is pleased to submit the ambient air monitoring monthly report for the PRAMP Reno AQM Station in the month of March 2018.

The air monitoring program consists of continuous air monitoring results for 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). All the air monitoring activities were conducted by Maxxam Analytics.

All data collected in March 2018 was compliant with the requirements outlined in the Air Monitoring Directive (Alberta Environment and Parks, 2016).

The operational time for all meteorological systems were above the 90% requirement.

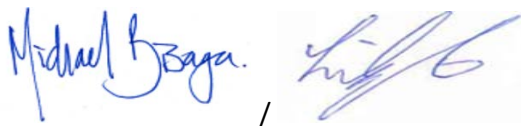
Canister System: A pressure sensor for the canister system was installed on March 13.

Canister event: A canister event was recorded on March 7 at 21:45, at 5-minute concentration of 0.42 ppm.

As the PRAMP Technical Program Managers, we have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. We also verify all air data that are required by the AMD to be electronically submitted to AEP and Alberta's Ambient Air Quality Data Warehouse have been submitted by the time of this report submission.

Should you have any questions, please don't hesitate to contact us.

Respectfully,



Michael Bisaga / Lily Lin
Technical Program Managers
Peace River Area Monitoring Program
780-266-7068 / 587-225-2248
prampatech@prampairshed.ca



MAXXAM ANALYTICS
#1 2080 39 Ave. NE, Calgary, AB
T2E 6P7

maxxam.ca
Toll Free 800-386-7247
Fax 403-219-3673

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

JOB #: 196-2018-03-93-C

March 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **April 20, 2018**

Prepared by:

A handwritten signature in blue ink, appearing to read "Wunmi Adekanmbi".

Wunmi Adekanmbi, M.Sc., EPT, PMP
Project Manager, Customer Service, Air Services

Reviewed by:

A handwritten signature in black ink, appearing to read "Cheri Sinclair".

Cheri Sinclair, B.Sc.
Supervisor, Customer Service, Air Services

SUMMARY

In March 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.

Canister System: A canister event was recorded on March 7 at 21:45, at an initial concentration of 0.42 ppm. A pressure sensor for the canister system was installed on March 13.

TRS: Three hours of downtime were recorded between March 11 and March 13, due to additional quality checks performed to address an instability in span response.

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, Reno Station.

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	3	10	1	4.2	SSW	1	9	100.0
TRS (ppb)	-	-	-	-	0.41	0.94	7	21	2.9	SSW	0.49	11	99.6
THC (ppm)	-	-	-	-	2.11	4.18	31	2	5.0	SW	2.53	31	100.0
CH ₄ (ppm)	-	-	-	-	2.11	4.18	31	2	5.0	SW	2.53	31	100.0
NMHC (ppm)	-	-	-	-	0.00	0.11	7	21	2.9	SSW	0.00	1	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	64	93	21	1	4.2	ENE	79	3	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	939	958	31	1	4.7	SW	953	30	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	-7.0	8.0	12	15	6.0	S	1.6	14	100.0
STATION TEMPERATURE (°C)	-	-	-	-	20.9	28.2	12	17	4.3	S	23.5	12	100.0
VECTOR WS (kph)	-	-	-	-	1.7	26.4	1	11	-	E	21.0	1	100.0
VECTOR WD (sec)	-	-	-	-	82 (E)	-	-	-	-	-	-	-	100.0

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	March

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO ₂	100.0	0.003 ppm		0	0.001 ppm	0
TRS	99.6	0.001 ppm		-	0.000 ppm	-
THC	100.0	4.18 ppm		-	2.53 ppm	-
CH ₄	100.0	4.18 ppm		-	2.53 ppm	-
NMHC	100.0	0.11 ppm		-	0.00 ppm	-
RH	100.0	93 %		-	79 %	-
BP	100.0	958 mb		-	953 mb	-
Ambient TPX	100.0	8.0 °C		-	1.6 °C	-
Station TPX	100.0	28.2 °C		-	23.5 °C	-
Wind Speed	100.0	26.4 kph		-	21.0 kph	-
Wind Direction	100.0	-		-	-	-

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
 1.0 Discussion	 8
.....	
2.0 Project Personnel	10
.....	
3.0 Plant Monthly Required AMD Summary	10
.....	
4.0 Calculations and Results	10
.....	
5.0 Methods and Procedures	11
.....	
Appendix I	14
.....	
Continuous Monitoring Data Results	14
.....	
Sulphur Dioxide	15
Total Reduced Sulphur	21
Total Hydrocarbon	27
Methane	33
Non-Methane Hydrocarbon	39
Wind Speed	45
Wind Direction	50
Relative Humidity	53
Barometric Pressure	56
Ambient Temperature	59
Station Temperature	62

Appendix II	Equipment Calibration Results	65
	Sulphur Dioxide	66
	Total Reduced Sulphur	69
	Total Hydrocarbon	72
	Wind System	76
	Calibrators	78
	Calibration Gases	81
Appendix III	Maximum Instantaneous Data	85
Appendix IV	Report Certification Form	98
Appendix V	Data Validation Certification Form	100

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 100%.
- The routine monthly calibration was performed on March 13.

TOTAL REDUCED SULPHUR (TRS)

- Operational time for the monitoring period was 99.6%, equivalent to three hours of downtime.
- Due to unstable station temperature, analyzer span response fluctuated between March 10 and March 12, with two instances where the analyzer spanned outside the upper acceptance limit. In both cases, the repeat zero-span checks conducted in the earlier hours of the following day were very close to the mean and did not show a drift. This prompted a site visit on March 13 where the routine monthly calibration was successfully completed. The air conditioning system was adjusted during this visit and no further issues were identified. As the monthly calibration met AMD requirements, no data was discarded due to this event. However, three hours of downtime were recorded due to the additional zero-span checks.

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

- Operational time for the monitoring period was 100%.
- The routine monthly calibration was performed on March 13.
- 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. A canister event was recorded on March 7 at 21:45, at an initial concentration of 0.42 ppm. A pressure sensor for the canister system was installed on March 13.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 100%.
- 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 100%.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.

STATION TEMPERATURE (StnTPX)

- Operational time for the monitoring period was 100%.

2.0 Project Personnel

Karla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technicians were Christopher Wesson and Limin Li.

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 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

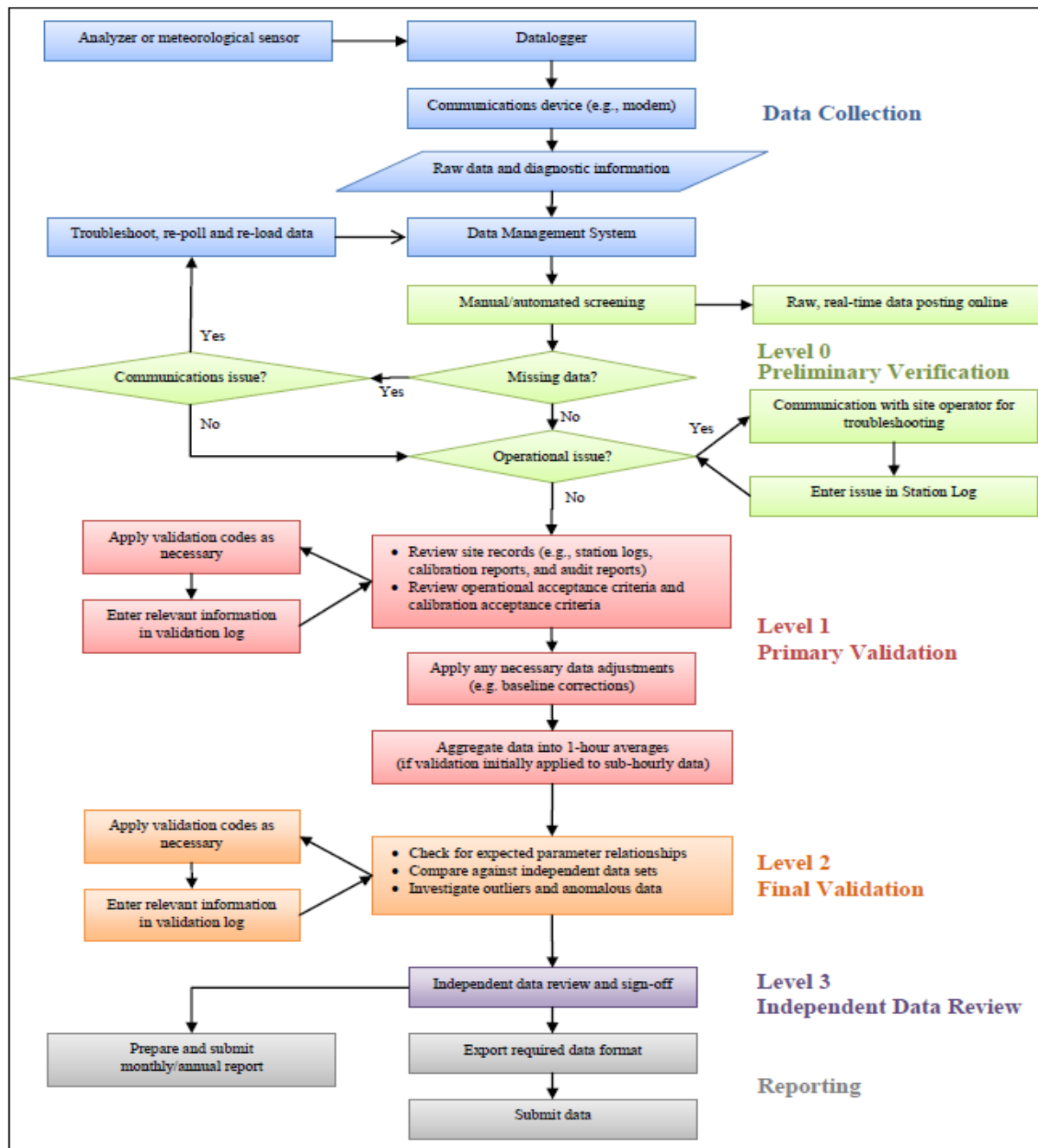
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	24	
2	1	1	1	1	S	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0	0	24
4	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	24
5	0	S	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	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	0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	S	0	0	0	1	0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	S	0	1	0	1	0	0	24
9	1	1	1	0	0	0	0	0	0	1	1	2	1	1	1	1	0	0	0	0	S	0	0	0	1	0	2	1	24
10	1	3	3	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	3	1	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	1	0	24
12	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	0	0	1	0	1	1	1	24
13	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	S	0	0	0	0	0	0	0	0	0	1	1	24
14	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	1	0	24
15	0	0	0	0	0	0	1	1	1	1	2	2	2	2	S	3	2	1	2	1	1	1	1	1	1	0	3	1	24
16	1	1	1	0	0	1	1	2	2	2	1	1	0	S	0	1	0	0	0	0	0	0	0	0	0	0	2	1	24
17	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	24
18	0	0	0	0	0	0	0	0	1	1	1	S	1	2	2	1	1	1	1	0	1	0	0	0	0	0	2	1	24
19	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	0	24
20	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	0	24
21	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	24	
22	1	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	1	0	24
23	0	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
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	0	24
25	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	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	0	24
27	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
28	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	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	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	0	24
31	0	0	0	0	0	0	0	1	1	1	2	2	2	1	1	0	0	0	0	0	1	S	1	2	0	2	1	24	
HOURLY MAX	1	3	3	1	1	1	1	2	2	2	2	2	2	2	2	3	2	1	2	1	1	1	1	2					
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

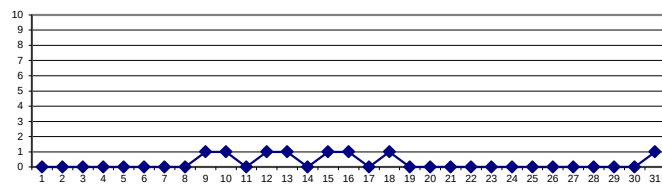
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 172 ppb 24-HR 48 ppb

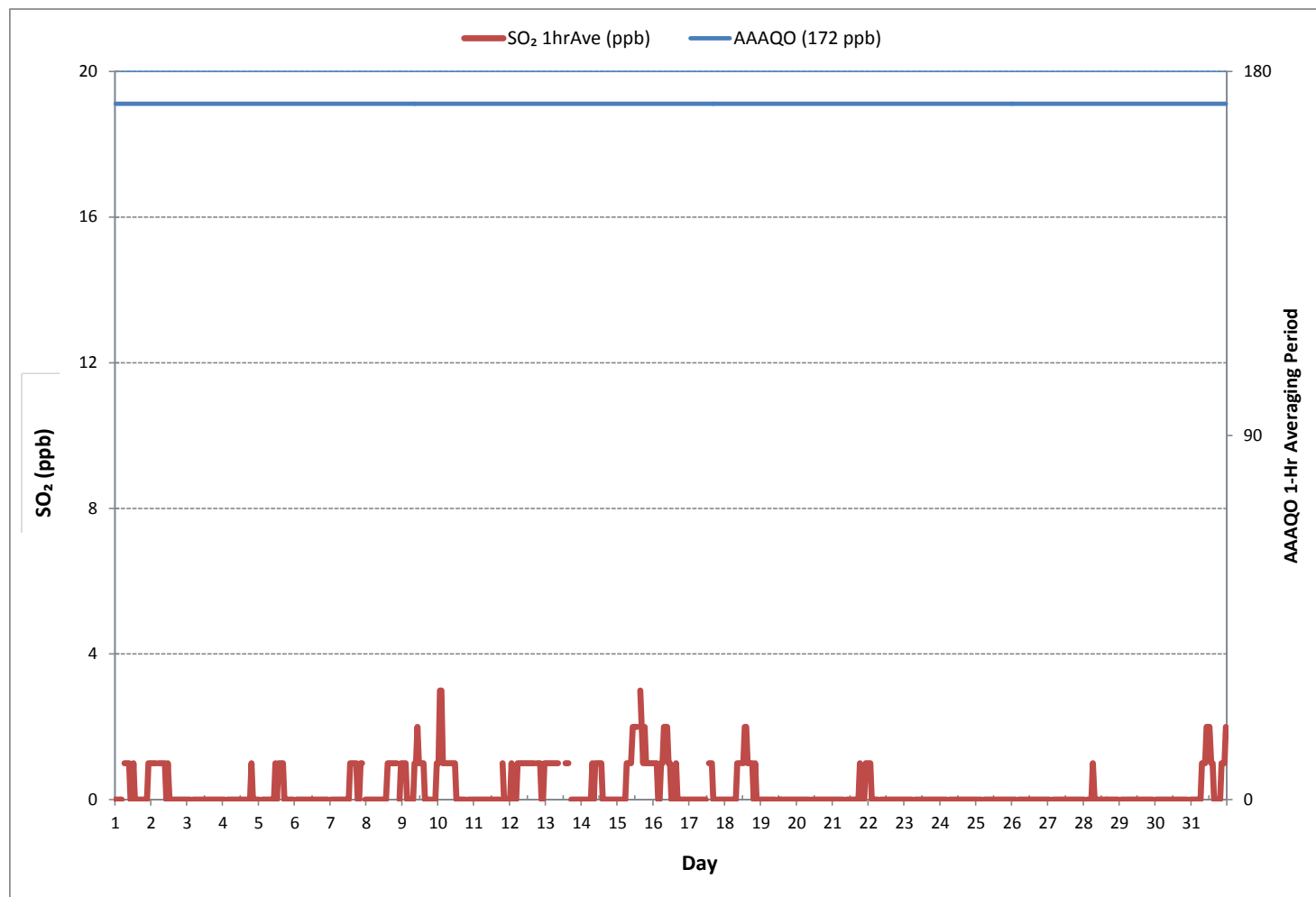
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	156
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	3 ppb @ HOUR 1 ON DAY 10
MAXIMUM 24-HR AVERAGE:	1 ppb ON DAY 9
IZS CALIBRATION TIME:	33 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	744 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	1
MONTHLY AVERAGE:	0 ppb

24 HR AVERAGES March 2018



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO₂[ppb]
Monthly: 18/03
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.80%

Calm Avg: 0.22 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	19.2	0.0	0.0	0.0	0.0	19.2
NE	5.4	0.0	0.0	0.0	0.0	5.4
E	18.8	0.0	0.0	0.0	0.0	18.8
SE	3.8	0.0	0.0	0.0	0.0	3.8
S	19.5	0.0	0.0	0.0	0.0	19.5
SW	15.3	0.0	0.0	0.0	0.0	15.3
W	9.2	0.0	0.0	0.0	0.0	9.2
NW	3.0	0.0	0.0	0.0	0.0	3.0
Summary	94.2	0.0	0.0	0.0	0.0	94.2

% Icon Classes (ppb)

94

0-3

0

3-10

0

10-85

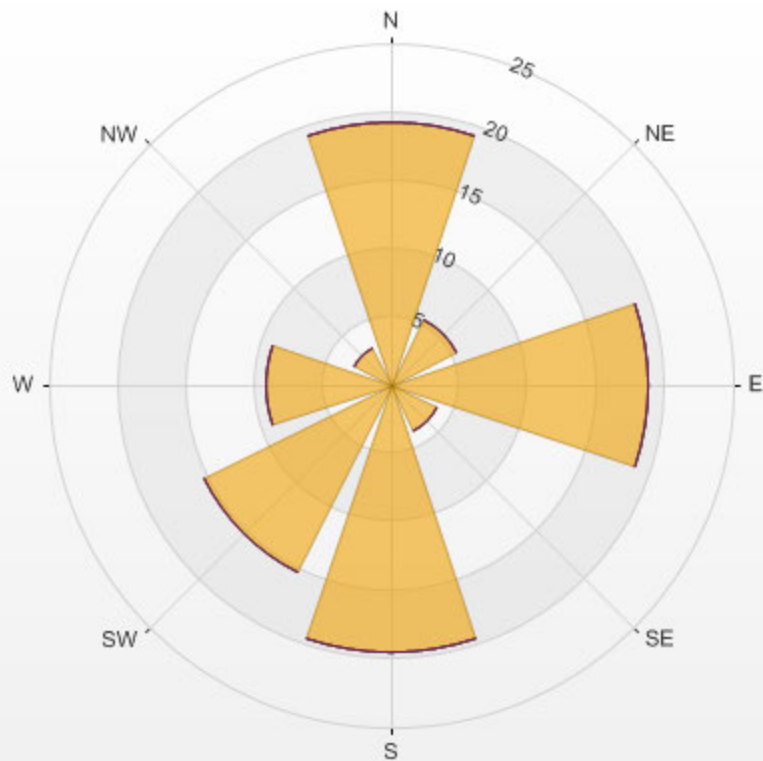
0

85-170

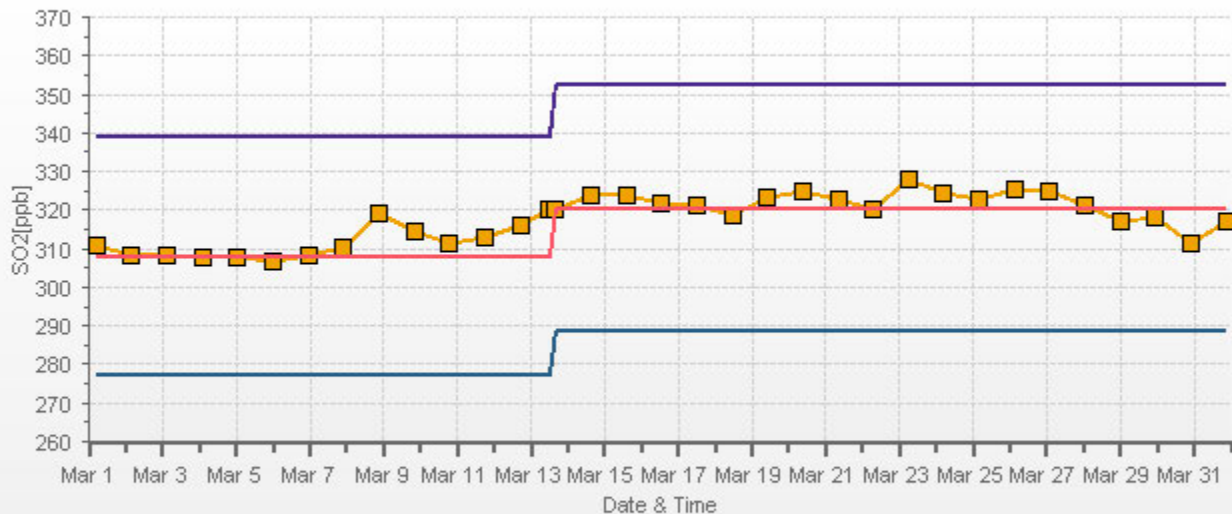
0

>170.0

PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 5.80% Calm Poll Avg: 0.22[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 18/03 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR

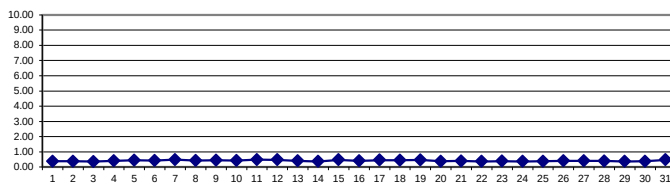
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.35	0.34	0.36	0.37	0.39	S	0.48	0.44	0.43	0.41	0.38	0.37	0.37	0.36	0.36	0.37	0.35	0.33	0.34	0.36	0.37	0.38	0.37	0.38	0.33	0.48	0.38	24	
2	0.38	0.39	0.38	0.39	S	0.45	0.41	0.40	0.39	0.39	0.37	0.35	0.35	0.36	0.36	0.36	0.37	0.35	0.36	0.36	0.36	0.38	0.37	0.38	0.35	0.45	0.38	24	
3	0.37	0.35	0.38	S	0.40	0.37	0.35	0.36	0.40	0.36	0.34	0.34	0.35	0.37	0.37	0.38	0.36	0.35	0.35	0.36	0.35	0.36	0.35	0.35	0.34	0.40	0.36	24	
4	0.36	0.37	S	0.39	0.35	0.35	0.36	0.36	0.35	0.34	0.32	0.34	0.39	0.41	0.35	0.37	0.35	0.35	0.38	0.70	0.59	0.48	0.56	0.56	0.32	0.70	0.41	24	
5	0.44	S	0.51	0.48	0.40	0.43	0.48	0.45	0.40	0.39	0.40	0.42	0.41	0.41	0.41	0.46	0.52	0.42	0.43	0.44	0.46	0.46	0.46	0.49	0.39	0.52	0.44	24	
6	S	0.54	0.48	0.41	0.38	0.37	0.39	0.39	0.44	0.41	0.41	0.45	0.41	0.44	0.38	0.42	0.37	0.37	0.46	0.52	0.47	0.47	0.50	S	0.37	0.54	0.43	24	
7	0.55	0.51	0.44	0.42	0.39	0.41	0.39	0.44	0.42	0.41	0.43	0.45	0.43	0.41	0.42	0.42	0.43	0.42	0.48	0.58	0.66	0.94	S	0.56	0.39	0.94	0.48	24	
8	0.54	0.54	0.55	0.54	0.51	0.46	0.48	0.44	0.41	0.41	0.39	0.38	0.39	0.40	0.37	0.37	0.37	0.39	0.40	0.42	0.40	S	0.44	0.41	0.37	0.55	0.44	24	
9	0.43	0.45	0.47	0.47	0.44	0.44	0.41	0.41	0.40	0.40	0.55	0.54	0.54	0.50	0.45	0.42	0.42	0.38	0.39	0.37	S	0.56	0.44	0.41	0.37	0.56	0.45	24	
10	0.40	0.52	0.58	0.52	0.49	0.43	0.45	0.47	0.41	0.39	0.38	0.38	0.37	0.35	0.36	0.35	0.34	0.33	0.33	S	0.45	0.55	0.55	0.49	0.33	0.58	0.43	24	
11	0.56	0.49	0.44	0.45	0.45	0.43	0.45	S1	0.51	0.46	0.41	0.46	0.42	0.41	0.44	0.42	0.43	0.44	S	0.74	0.70	0.47	0.60	0.52	0.41	0.74	0.49	23	
12	0.58	0.74	0.55	0.43	0.42	0.45	0.43	S1	0.50	0.41	0.40	0.38	0.37	0.40	0.38	0.43	0.44	S	0.58	0.60	0.65	0.46	0.45	0.44	0.37	0.74	0.48	23	
13	0.43	0.47	0.47	0.47	0.49	S1	0.50	0.44	0.47	C	C	C	C	C	C	0.40	0.36	S	0.38	0.35	0.33	0.32	0.31	0.32	0.33	0.31	0.50	0.40	23
14	0.31	0.32	0.35	0.33	0.34	0.35	0.37	0.37	0.38	0.40	0.40	0.39	0.39	0.40	0.39	S	0.37	0.38	0.38	0.38	0.35	0.33	0.37	0.39	0.31	0.40	0.37	24	
15	0.41	0.40	0.42	0.40	0.47	0.42	0.47	0.51	0.54	0.49	0.46	0.47	0.50	0.49	S	0.49	0.46	0.46	0.45	0.45	0.50	0.57	0.59	0.48	0.40	0.59	0.47	24	
16	0.48	0.47	0.46	0.44	0.45	0.39	0.40	0.40	0.40	0.39	0.39	0.35	0.38	S	0.39	0.41	0.39	0.35	0.33	0.35	0.41	0.41	0.39	0.42	0.33	0.48	0.40	24	
17	0.54	0.67	0.51	0.56	0.56	0.43	0.40	0.40	0.43	0.40	0.39	0.41	S	0.47	0.47	0.45	0.43	0.42	0.42	0.41	0.41	0.41	0.42	0.42	0.39	0.67	0.45	24	
18	0.41	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.43	0.41	0.43	S	0.45	0.45	0.43	0.41	0.42	0.42	0.42	0.42	0.59	0.58	0.57	0.47	0.40	0.59	0.44	24	
19	0.43	0.42	0.54	0.50	0.58	0.63	0.67	0.50	0.50	0.51	S	0.48	0.46	0.43	0.41	0.40	0.39	0.38	0.37	0.39	0.40	0.42	0.40	0.39	0.37	0.67	0.46	24	
20	0.38	0.42	0.43	0.42	0.43	0.40	0.39	0.38	0.40	S	0.42	0.39	0.38	0.36	0.35	0.33	0.35	0.34	0.33	0.36	0.36	0.37	0.39	0.38	0.33	0.43	0.38	24	
21	0.38	0.38	0.38	0.39	0.37	0.38	0.40	0.45	S	0.48	0.43	0.42	0.42	0.41	0.40	0.39	0.38	0.39	0.41	0.39	0.39	0.38	0.37	0.37	0.37	0.48	0.40	24	
22	0.38	0.40	0.39	0.37	0.39	0.37	0.36	S	0.40	0.36	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.37	0.36	0.35	0.37	0.36	0.34	0.35	0.34	0.40	0.37	24	
23	0.36	0.35	0.36	0.36	0.35	0.38	S	0.42	0.43	0.41	0.41	0.42	0.40	0.40	0.39	0.40	0.39	0.40	0.39	0.40	0.39	0.40	0.39	0.39	0.39	0.35	0.43	0.39	24
24	0.39	0.37	0.36	0.36	0.37	S	0.39	0.37	0.37	0.35	0.37	0.37	0.39	0.38	0.36	0.36	0.37	0.36	0.37	0.36	0.36	0.37	0.35	0.35	0.35	0.39	0.37	24	
25	0.38	0.46	0.40	0.40	S	0.42	0.35	0.37	0.37	0.37	0.41	0.39	0.36	0.36	0.36	0.36	0.36	0.34	0.36	0.37	0.37	0.38	0.36	0.37	0.34	0.46	0.38	24	
26	0.41	0.37	0.38	S	0.40	0.37	0.36	0.38	0.37	0.38	0.38	0.39	0.39	0.38	0.40	0.39	0.41	0.43	0.43	0.46	0.43	0.42	0.42	0.45	0.36	0.46	0.40	24	
27	0.49	0.42	S	0.47	0.47	0.47	0.45	0.44	0.41	0.39	0.40	0.40	0.41	0.39	0.39	0.38	0.38	0.40	0.39	0.38	0.37	0.38	0.39	0.43	0.37	0.49	0.41	24	
28	0.44	S	0.50	0.45	0.46	0.46	0.47	0.48	0.40	0.41	0.39	0.35	0.36	0.35	0.36	0.35	0.34	0.34	0.36	0.35	0.38	0.42	0.37	0.36	0.34	0.50	0.40	24	
29	S	0.39	0.37	0.37	0.36	0.37	0.37	0.37	0.38	0.38	0.38	0.37	0.35	0.37	0.36	0.36	0.38	0.37	0.36	0.35	0.35	0.36	0.36	S	0.35	0.39	0.37	24	
30	0.41	0.39	0.38	0.41	0.38	0.39	0.38	0.37	0.36	0.37	0.39	0.36	0.37	0.35	0.34	0.37	0.36	0.36	0.37	0.36	0.37	0.36	S	0.43	0.34	0.43	0.38	24	
31	0.39	0.61	0.50	0.45	0.45	0.45	0.59	0.61	0.45	0.44	0.43	0.43	0.40	0.39	0.38	0.37	0.37	0.39	0.37	0.41	0.47	S	0.72	0.90	0.37	0.90	0.48	24	
HOURLY MAX	0.58	0.74	0.58	0.56	0.58	0.63	0.67	0.61	0.54	0.51	0.55	0.54	0.54	0.50	0.47	0.49	0.52	0.46	0.58	0.74	0.70	0.94	0.72	0.90					
HOURLY AVG	0.43	0.45	0.44	0.43	0.43	0.42	0.43	0.42	0.42	0.40	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.38	0.39	0.42	0.44	0.44	0.43	0.44					

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

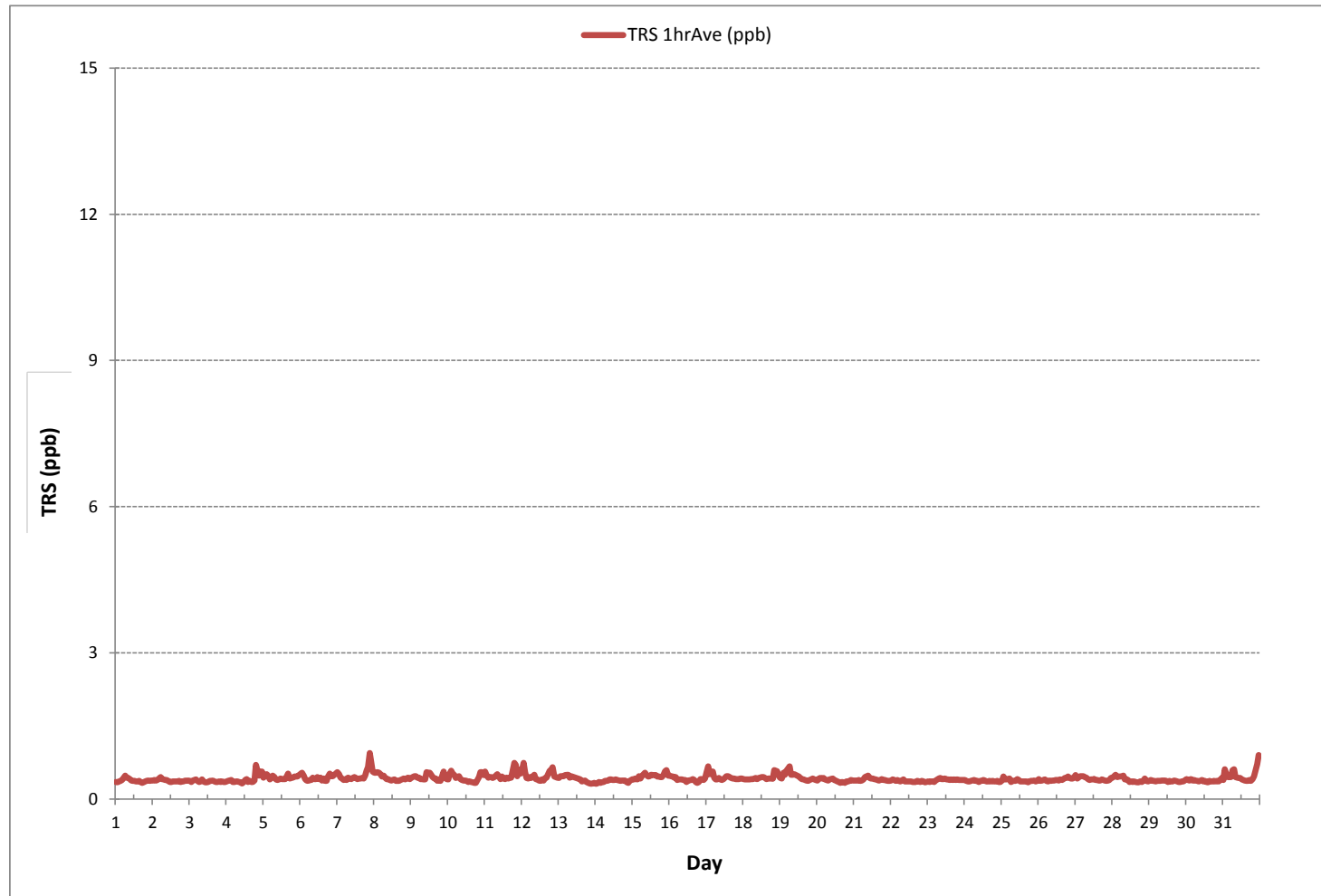
24 HR AVERAGES March 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703				
MINIMUM 1-HR AVERAGE:	0.31	ppb @ HOUR	21	ON DAY	13
MAXIMUM 1-HR AVERAGE:	0.94	ppb @ HOUR	21	ON DAY	7
MAXIMUM 24-HR AVERAGE:	0.49	ppb		ON DAY	11
IZS CALIBRATION TIME:	33	hrs	OPERATIONAL TIME:	741	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	0.07		MONTHLY AVERAGE:	0.41	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 18/03
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.83%

Calm Avg: 0.45 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	19.2	0.0	0.0	0.0	19.2
NE	5.4	0.0	0.0	0.0	5.4
E	18.9	0.0	0.0	0.0	18.9
SE	3.8	0.0	0.0	0.0	3.8
S	19.2	0.0	0.0	0.0	19.2
SW	15.4	0.0	0.0	0.0	15.4
W	9.3	0.0	0.0	0.0	9.3
NW	3.0	0.0	0.0	0.0	3.0
Summary	94.2	0.0	0.0	0.0	94.2

% Icon Classes (ppb)

94

0-1

0

1-3

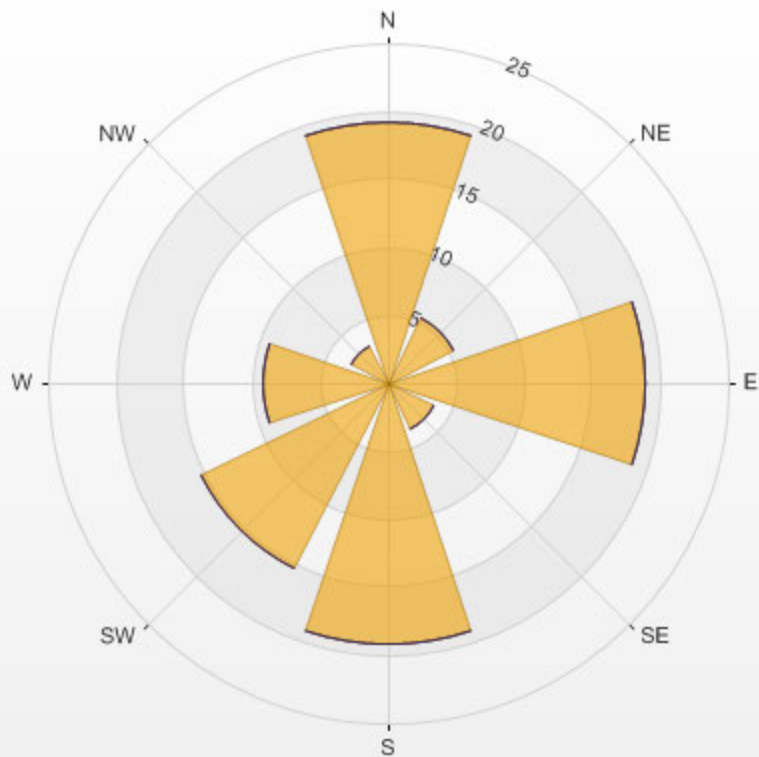
0

3-10

0

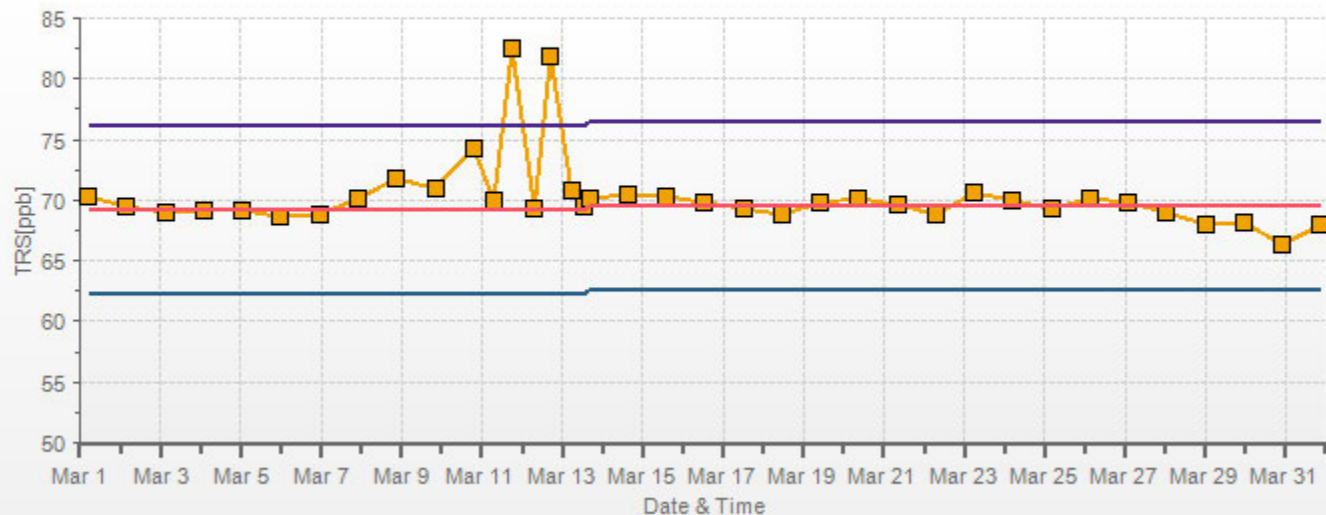
>10.0

PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 5.83% Calm Poll Avg: 0.45[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 18/03 Type: Span

Span Meas Span Ref Span Low Span High



TOTAL HYDROCARBON

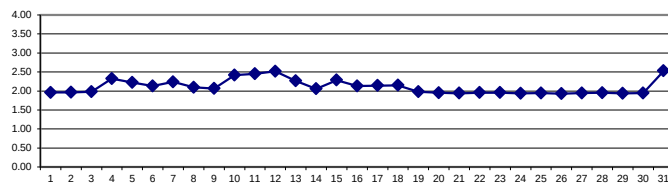
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.95	1.96	1.96	1.97	1.97	S	1.97	1.98	1.97	1.97	1.96	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.98	1.96	24	
2	1.97	1.97	1.97	1.97	S	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.98	1.96	1.98	1.97	24	
3	2.00	1.98	1.99	S	1.98	1.98	1.98	1.99	2.03	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	2.03	1.98	24	
4	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.99	1.99	1.99	2.00	2.03	3.09	3.74	3.80	2.56	3.48	3.06	1.97	3.80	2.32	24	
5	2.65	S	2.77	2.61	2.48	2.83	2.33	2.47	2.15	2.07	2.08	2.07	2.10	2.05	2.04	2.04	2.05	2.05	2.06	2.07	2.06	2.05	2.05	2.06	2.04	2.83	2.23	24	
6	S	2.09	2.09	2.04	2.02	1.99	2.38	2.03	1.99	1.97	1.97	1.96	1.95	1.95	1.96	1.95	1.95	1.95	2.29	2.91	2.45	2.51	2.41	S	1.95	2.91	2.13	24	
7	2.33	2.24	2.11	2.07	2.01	2.00	1.97	2.02	2.00	1.97	1.97	2.03	2.01	2.00	1.99	1.99	1.99	2.00	2.35	3.12	3.00	3.39	S	2.89	1.97	3.39	2.24	24	
8	2.58	2.57	2.37	2.39	2.26	2.16	2.24	2.07	1.97	1.94	1.95	1.95	1.94	1.95	1.94	1.94	1.97	2.01	2.02	1.99	S	2.00	1.99	1.94	2.58	2.09	24		
9	1.99	2.15	2.17	2.30	2.05	2.08	2.01	2.00	2.00	2.01	2.04	2.03	2.01	2.00	2.00	1.98	1.96	1.95	1.98	1.98	S	2.59	2.29	1.95	1.95	2.59	2.07	24	
10	1.99	3.23	3.19	3.20	2.88	2.28	2.67	2.36	2.15	1.94	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.95	S	2.34	3.50	3.66	2.78	1.93	3.66	2.42	24	
11	2.74	2.47	2.56	2.19	2.35	2.39	2.58	2.28	2.18	2.12	1.96	1.94	1.97	2.00	2.03	2.08	2.09	2.16	S	3.86	3.99	2.48	3.29	2.65	1.94	3.99	2.45	24	
12	3.54	3.67	3.12	2.28	2.20	2.31	2.18	2.01	2.08	2.03	1.98	2.10	2.02	2.06	2.09	2.24	2.18	S	2.74	3.99	3.68	2.51	2.41	2.47	1.98	3.99	2.52	24	
13	2.60	2.69	2.86	2.44	2.42	2.98	2.36	2.09	2.30	2.29	2.25	2.25	C	C	C	C	2.05	2.05	2.02	1.92	1.92	1.92	1.94	1.94	1.92	2.98	2.26	24	
14	1.94	1.96	2.02	2.01	2.03	2.09	2.14	2.11	2.11	2.12	2.10	2.10	2.09	2.10	2.09	S	2.06	2.05	2.03	2.05	2.04	2.01	2.02	2.06	1.94	2.14	2.06	24	
15	2.12	2.06	2.05	2.02	2.08	2.05	2.29	2.60	2.37	2.16	2.11	2.12	2.20	2.10	S	2.08	2.10	2.17	2.25	2.39	3.13	2.71	3.11	2.30	2.02	3.13	2.29	24	
16	2.31	2.33	2.35	2.29	2.36	2.17	2.07	2.08	2.10	2.11	2.07	2.04	2.04	S	2.03	2.04	2.03	2.02	2.03	2.03	2.03	2.13	2.06	2.29	2.02	2.36	2.13	24	
17	2.69	3.02	2.38	2.60	2.55	2.16	2.06	2.05	2.09	2.02	2.01	2.00	S	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.95	1.95	3.02	2.14	24	
18	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.94	1.95	1.95	S	1.96	1.96	1.95	1.95	1.95	1.95	1.95	3.98	3.32	2.67	2.40	1.94	3.98	2.15	24	
19	2.04	2.04	1.98	2.00	2.01	2.01	2.06	2.07	2.06	1.99	S	2.02	2.06	1.97	1.95	1.93	1.92	1.91	1.91	1.94	1.93	1.92	1.91	1.91	1.91	2.07	1.98	24	
20	1.90	2.30	2.03	1.91	1.91	1.91	1.92	1.92	1.94	S	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	2.00	1.96	1.99	2.01	1.98	1.90	2.30	1.95	24	
21	1.92	1.92	1.93	1.93	1.93	1.94	1.94	1.96	S	1.95	1.95	1.94	1.93	1.94	1.94	1.95	1.95	1.95	1.94	1.96	1.95	1.94	1.94	1.94	1.92	1.96	1.94	24	
22	1.94	1.94	1.95	1.95	1.96	1.95	1.96	S	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.94	1.96	1.96	24	
23	1.95	1.95	1.95	1.95	1.95	1.96	S	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.95	1.97	1.94	1.98	1.96	24	
24	1.96	1.94	1.94	1.94	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.96	1.93	24	
25	1.93	1.94	1.94	1.94	S	1.95	1.94	1.94	1.94	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.94	2.05	1.96	1.98	1.93	1.93	1.93	2.05	1.95	24	
26	1.93	1.92	1.93	S	1.93	1.93	1.93	1.92	1.92	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.96	1.92	1.96	1.93	24	
27	2.00	1.96	S	1.93	1.94	1.96	1.94	1.93	1.93	1.93	1.94	1.93	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.95	1.95	1.93	2.00	1.94	24	
28	2.02	S	2.03	1.96	1.96	1.97	1.98	1.98	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.92	1.92	1.92	1.93	1.93	1.93	1.93	1.92	2.03	1.95	24	
29	S	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	S	1.93	1.94	1.93	24	
30	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.93	1.94	1.93	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.95	S	1.95	1.93	1.96	1.94	24
31	2.01	3.23	4.18	3.57	2.99	2.94	2.96	2.73	2.02	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.95	2.00	2.23	2.86	S	3.76	2.97	1.95	4.18	2.53	24	
HOURLY MAX	3.54	3.67	4.18	3.57	2.99	2.98	2.96	2.73	2.37	2.29	2.25	2.25	2.20	2.10	2.09	2.24	2.18	2.17	3.09	3.99	3.99	3.50	3.76	3.06					
HOURLY AVG	2.17	2.25	2.26	2.18	2.14	2.13	2.12	2.08	2.03	2.00	1.99	1.99	1.98	1.97	1.97	1.98	1.98	1.98	2.06	2.25	2.35	2.24	2.29	2.18					

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

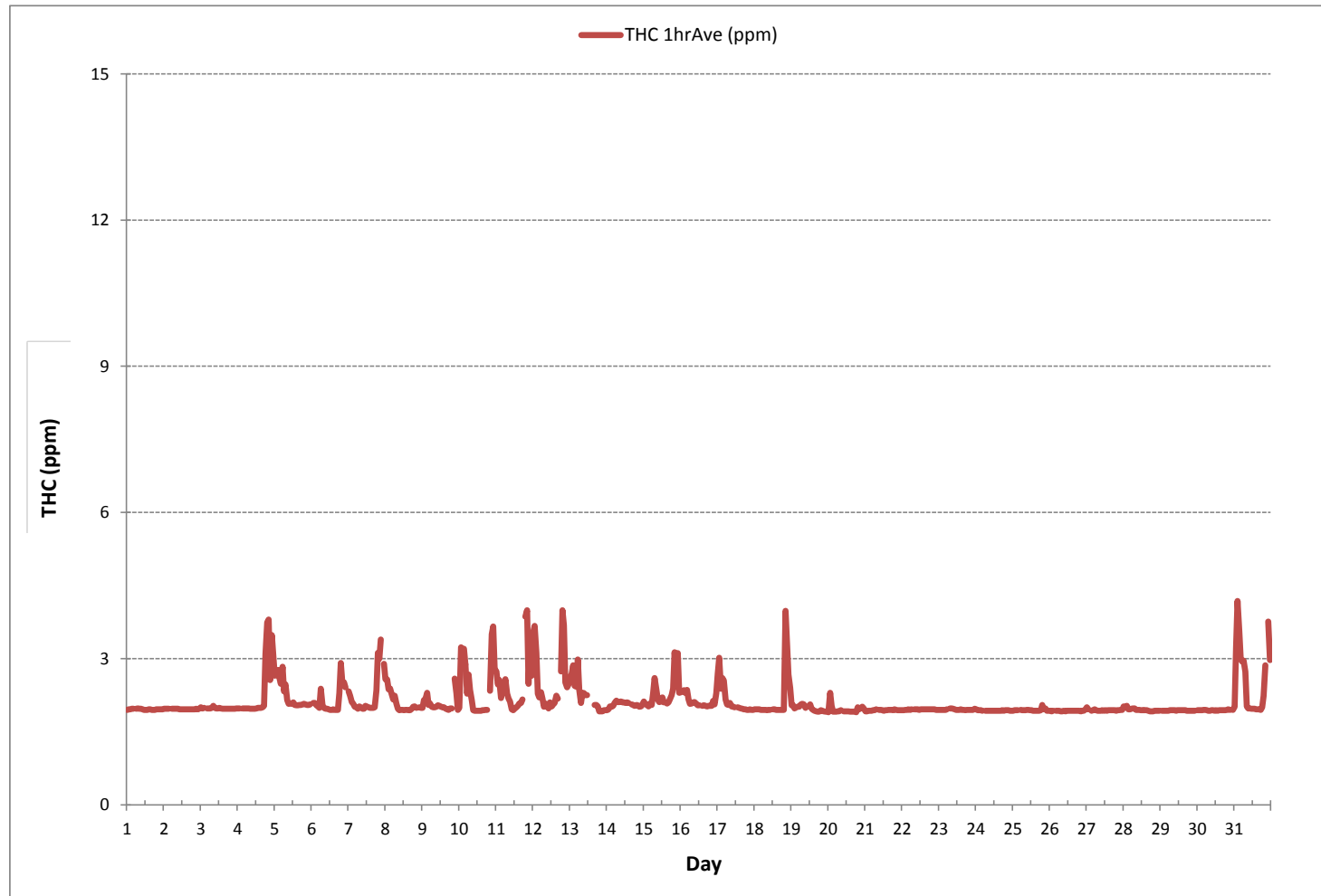
24 HR AVERAGES March 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.90	ppm @ HOUR	0	ON DAY 20
MAXIMUM 1-HR AVERAGE:	4.18	ppm @ HOUR	2	ON DAY 31
MAXIMUM 24-HR AVERAGE:	2.53	ppm		ON DAY 31
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.35		MONTHLY AVERAGE:	2.11 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC[ppm]
Monthly: 18/03
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.79%

Calm Avg: 2.34 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	17.0	2.0	0.0	0.0	0.0	18.9
NE	5.1	0.3	0.0	0.0	0.0	5.4
E	17.4	1.4	0.0	0.0	0.0	18.8
SE	1.4	2.4	0.0	0.0	0.0	3.8
S	2.5	14.8	2.5	0.0	0.0	19.9
SW	8.5	5.9	0.9	0.0	0.0	15.3
W	6.8	2.4	0.0	0.0	0.0	9.2
NW	2.5	0.4	0.0	0.0	0.0	3.0
Summary	61.1	29.7	3.4	0.0	0.0	94.2

% Icon Classes (ppm)

61



0-2

30



2-3

3



3-5

0



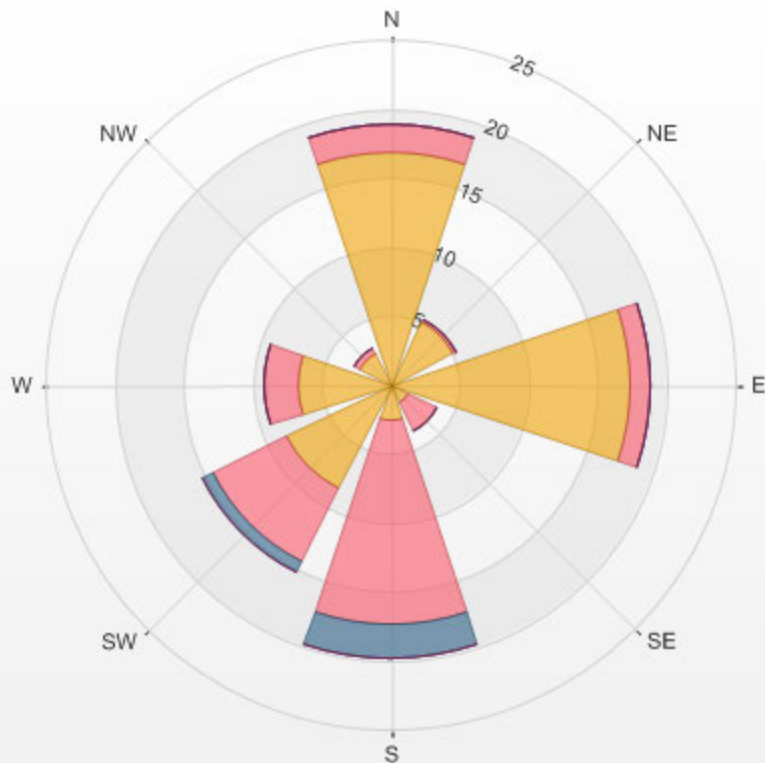
5-10

0



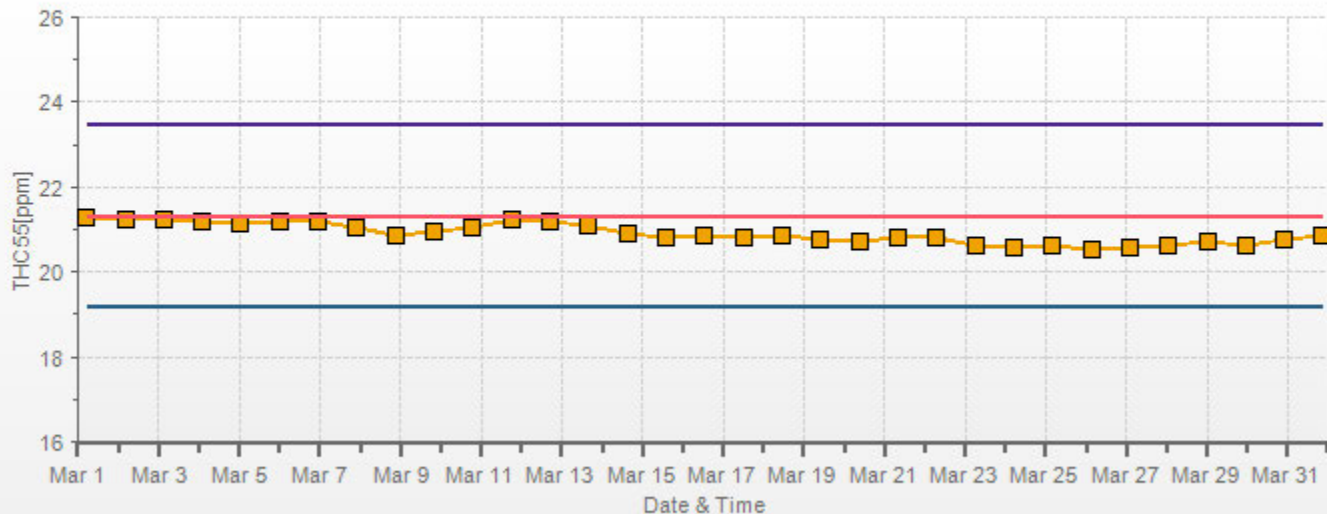
>10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 5.79% Calm Poll Avg: 2.34[ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 18/03 Type: Span

Span Meas Span Ref Span Low Span High



METHANE

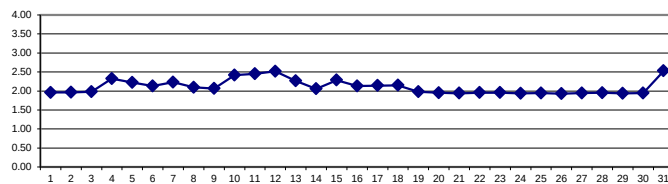
METHANE Hourly Averages (CH₄ ppm)

	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	1.95	1.96	1.96	1.97	1.97	S	1.97	1.98	1.97	1.97	1.96	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.98	1.96	24	
2	1.97	1.97	1.97	1.97	S	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.98	1.96	1.98	1.97	24	
3	2.00	1.98	1.99	S	1.98	1.98	1.98	1.99	2.03	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	2.03	1.98	24	
4	1.97	1.98	S	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.99	1.99	1.99	2.00	2.03	3.09	3.74	3.80	2.56	3.48	3.06	1.97	3.80	2.32	24	
5	2.65	S	2.77	2.61	2.48	2.83	2.33	2.47	2.15	2.07	2.08	2.07	2.10	2.05	2.04	2.04	2.05	2.05	2.06	2.07	2.06	2.05	2.05	2.06	2.04	2.83	2.23	24	
6	S	2.09	2.09	2.04	2.02	1.99	2.38	2.03	1.99	1.97	1.97	1.96	1.95	1.95	1.96	1.95	1.95	1.95	2.29	2.91	2.45	2.51	2.41	S	1.95	2.91	2.13	24	
7	2.33	2.24	2.11	2.07	2.01	2.00	1.97	2.02	2.00	1.97	1.97	2.03	2.01	2.00	1.99	1.99	1.99	2.00	2.35	3.12	3.00	3.28	S	2.89	1.97	3.28	2.23	24	
8	2.58	2.57	2.37	2.39	2.26	2.16	2.24	2.07	1.97	1.94	1.95	1.95	1.94	1.95	1.95	1.94	1.94	1.97	2.01	2.02	1.99	S	2.00	1.99	1.94	2.58	2.09	24	
9	1.99	2.15	2.17	2.30	2.05	2.08	2.01	2.00	2.00	2.01	2.04	2.03	2.01	2.00	2.00	1.98	1.96	1.95	1.98	1.98	S	2.59	2.29	1.95	1.95	2.59	2.07	24	
10	1.99	3.23	3.19	3.20	2.88	2.28	2.67	2.36	2.15	1.94	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.95	S	2.34	3.50	3.66	2.78	1.93	3.66	2.42	24	
11	2.74	2.47	2.56	2.19	2.35	2.39	2.58	2.28	2.18	2.12	1.96	1.94	1.97	2.00	2.03	2.08	2.08	2.16	S	3.86	3.99	2.48	3.29	2.65	1.94	3.99	2.45	24	
12	3.54	3.67	3.12	2.28	2.20	2.31	2.18	2.01	2.08	2.03	1.98	2.10	2.02	2.06	2.09	2.24	2.18	S	2.74	3.98	3.68	2.51	2.41	2.47	1.98	3.98	2.52	24	
13	2.60	2.69	2.86	2.44	2.42	2.98	2.36	2.09	2.30	2.29	2.25	2.25	C	C	C	C	2.05	2.05	2.02	1.92	1.92	1.92	1.94	1.94	1.92	2.98	2.26	24	
14	1.94	1.96	2.02	2.01	2.03	2.09	2.14	2.11	2.11	2.12	2.10	2.10	2.09	2.10	2.09	S	2.06	2.05	2.03	2.05	2.04	2.01	2.02	2.06	1.94	2.14	2.06	24	
15	2.12	2.06	2.05	2.02	2.08	2.05	2.29	2.60	2.37	2.15	2.11	2.12	2.19	2.10	S	2.08	2.10	2.17	2.25	2.39	3.13	2.71	3.11	2.30	2.02	3.13	2.28	24	
16	2.31	2.33	2.35	2.29	2.36	2.17	2.07	2.08	2.10	2.11	2.07	2.04	2.04	S	2.03	2.04	2.03	2.02	2.03	2.03	2.03	2.13	2.06	2.29	2.02	2.36	2.13	24	
17	2.69	3.02	2.38	2.59	2.55	2.16	2.06	2.05	2.09	2.02	2.01	2.00	S	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.96	1.95	1.95	1.95	3.02	2.14	24	
18	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.94	1.95	1.95	S	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	3.98	3.32	2.67	2.40	1.94	3.98	2.15	24
19	2.04	2.04	1.98	2.00	2.01	2.01	2.04	2.07	2.06	1.99	S	2.02	2.06	1.97	1.95	1.92	1.92	1.91	1.91	1.94	1.93	1.92	1.91	1.91	1.91	2.07	1.98	24	
20	1.90	2.30	2.03	1.91	1.91	1.91	1.92	1.92	1.94	S	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	2.00	1.96	1.99	2.01	1.98	1.90	2.30	1.95	24	
21	1.92	1.92	1.93	1.93	1.93	1.94	1.94	1.96	S	1.95	1.95	1.94	1.93	1.94	1.94	1.95	1.95	1.95	1.94	1.96	1.95	1.94	1.94	1.94	1.92	1.96	1.94	24	
22	1.94	1.94	1.95	1.95	1.96	1.95	1.96	S	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.94	1.96	1.96	24	
23	1.95	1.95	1.95	1.95	1.95	1.95	S	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.95	1.97	1.94	1.98	1.95	24	
24	1.96	1.94	1.94	1.94	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.96	1.93	24	
25	1.93	1.94	1.94	1.94	S	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.94	2.05	1.96	1.98	1.93	1.93	1.93	2.05	1.94	24	
26	1.93	1.92	1.93	S	1.93	1.93	1.93	1.92	1.92	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.96	1.92	1.96	1.93	24	
27	2.00	1.96	S	1.93	1.94	1.96	1.94	1.93	1.93	1.93	1.94	1.93	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.95	1.95	1.93	2.00	1.94	24	
28	2.02	S	2.03	1.96	1.96	1.97	1.98	1.98	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.92	1.92	1.92	1.93	1.93	1.93	1.93	1.92	2.03	1.95	24	
29	S	1.93	1.93	1.92	1.93	1.93	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	S	1.92	1.94	1.93	24	
30	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.93	1.94	1.94	1.93	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.95	S	1.95	1.93	1.96	1.94	24	
31	2.01	3.23	4.18	3.57	2.99	2.94	2.96	2.73	2.02	1.98	1.98	1.97	1.97	1.97	1.96	1.95	1.96	1.95	2.00	2.23	2.86	S	3.76	2.97	1.95	4.18	2.53	24	
HOURLY MAX	3.54	3.67	4.18	3.57	2.99	2.98	2.96	2.73	2.37	2.29	2.25	2.25	2.19	2.10	2.09	2.24	2.18	2.17	3.09	3.98	3.99	3.50	3.76	3.06					
HOURLY AVG	2.17	2.25	2.26	2.18	2.14	2.13	2.12	2.08	2.03	2.00	1.99	1.99	1.98	1.97	1.97	1.98	1.98	1.98	2.06	2.25	2.35	2.23	2.29	2.18					

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

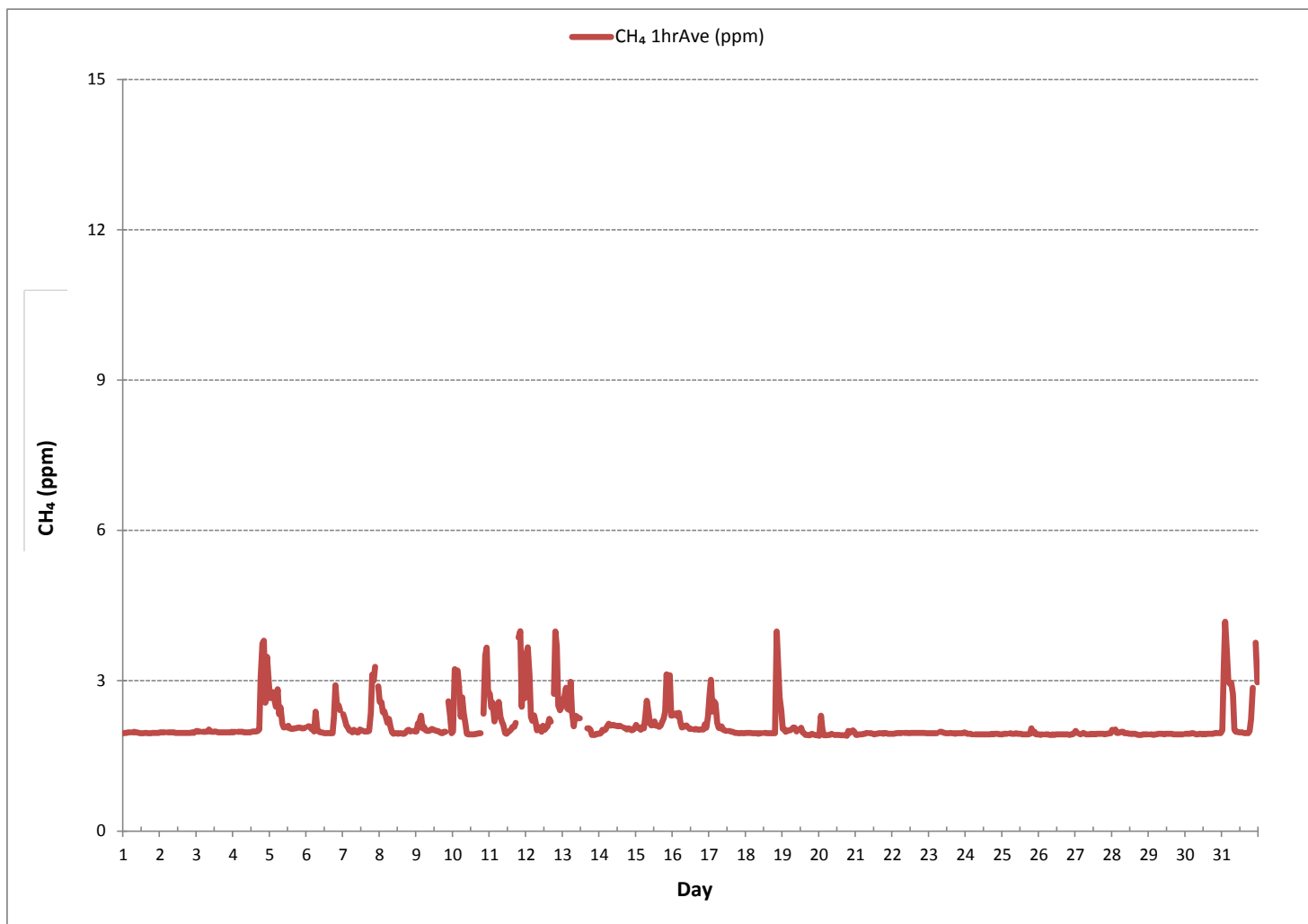
24 HR AVERAGES March 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.90	ppm @ HOUR	0	ON DAY 20
MAXIMUM 1-HR AVERAGE:	4.18	ppm @ HOUR	2	ON DAY 31
MAXIMUM 24-HR AVERAGE:	2.53	ppm		ON DAY 31
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.35		MONTHLY AVERAGE:	2.11 ppm

METHANE Hourly Averages (CH₄ ppm)



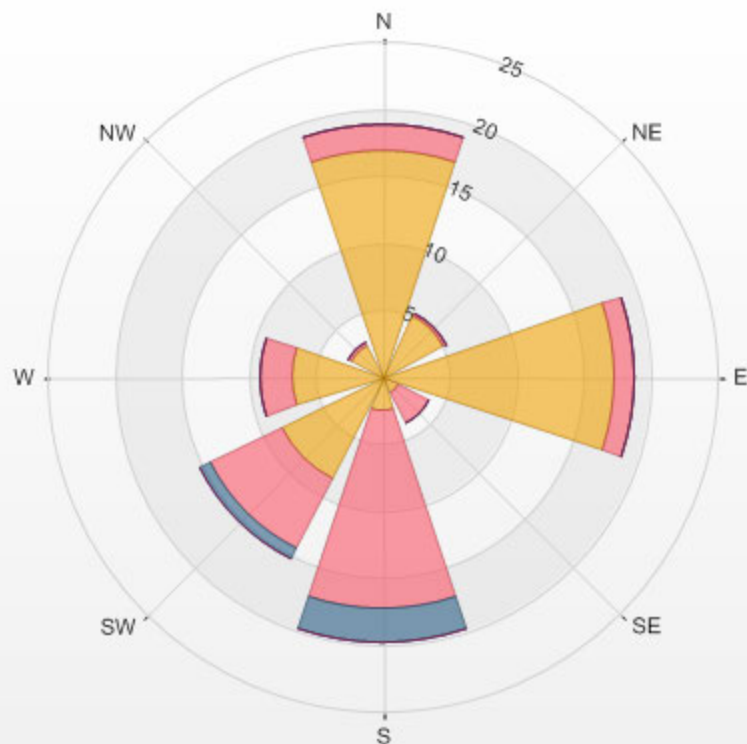
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-CH₄[ppm]
Monthly: 18/03
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.79%

Calm Avg: 2.34 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	17.0	2.0	0.0	0.0	0.0	18.9
NE	5.1	0.3	0.0	0.0	0.0	5.4
E	17.4	1.4	0.0	0.0	0.0	18.8
SE	1.4	2.4	0.0	0.0	0.0	3.8
S	2.5	14.8	2.5	0.0	0.0	19.9
SW	8.5	5.9	0.9	0.0	0.0	15.3
W	6.8	2.4	0.0	0.0	0.0	9.2
NW	2.5	0.4	0.0	0.0	0.0	3.0
Summary	61.1	29.7	3.4	0.0	0.0	94.2

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 5.79% Calm Poll Avg: 2.34[ppm]



CH₄[ppm] Calibration: PRAMP_RENO Monthly: 18/03 Type: Span

Span Meas Span Ref Span Low Span High



NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 2018

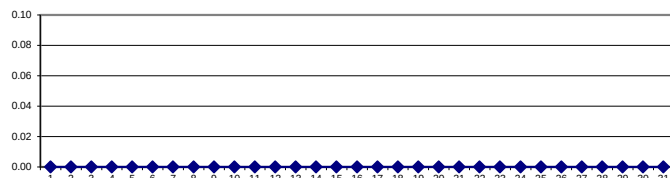
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.11	S	0.00	0.00	0.11	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	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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	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	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
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	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
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	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
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	0.02	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	0.02	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	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	24
23	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	0.00	0.00	24
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
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.11	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

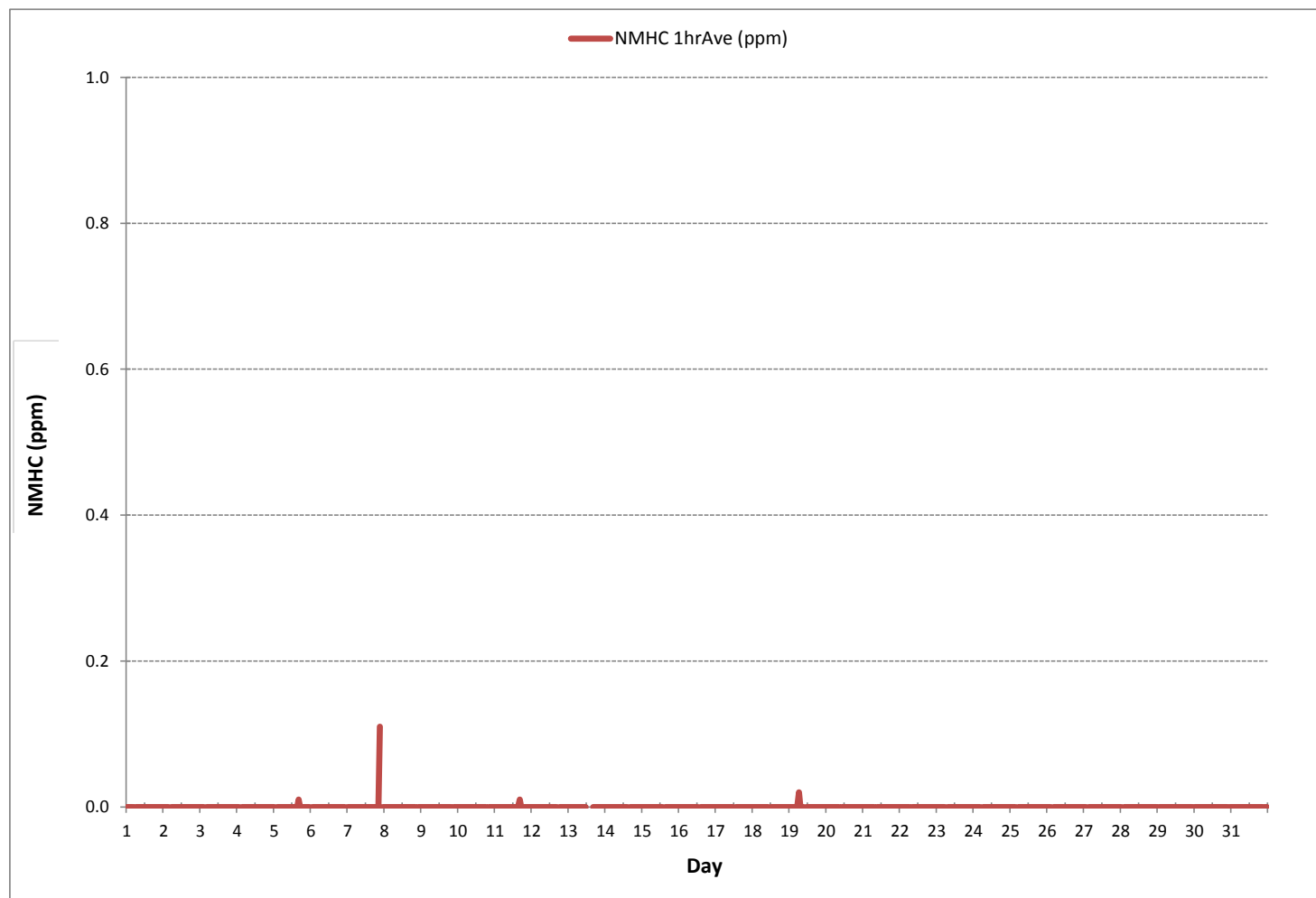
24 HR AVERAGES March 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	4				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.11	ppm	@ HOUR	21	ON DAY 7
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY 1
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
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: 18/03
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

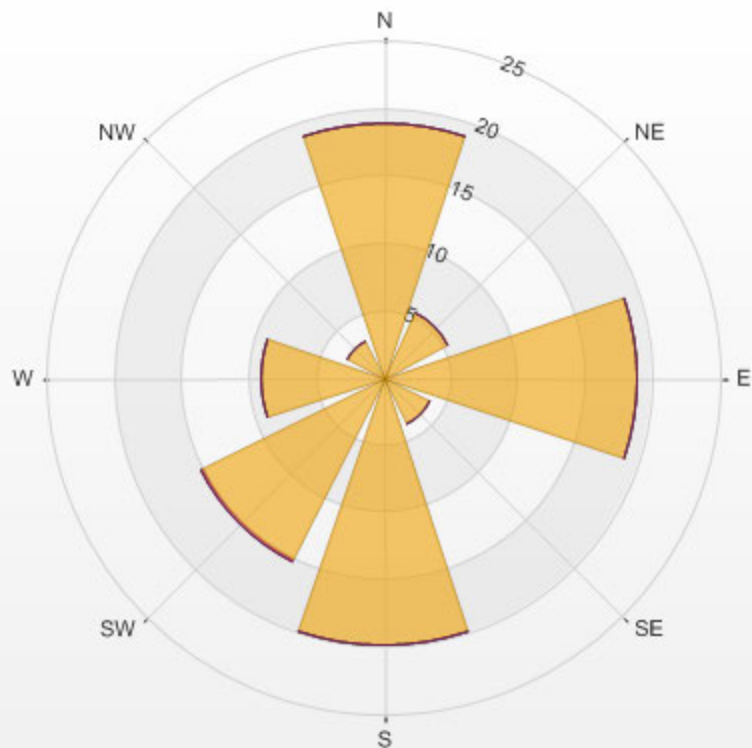
Calm: 5.79%

Calm Avg: 0.00 [ppm]

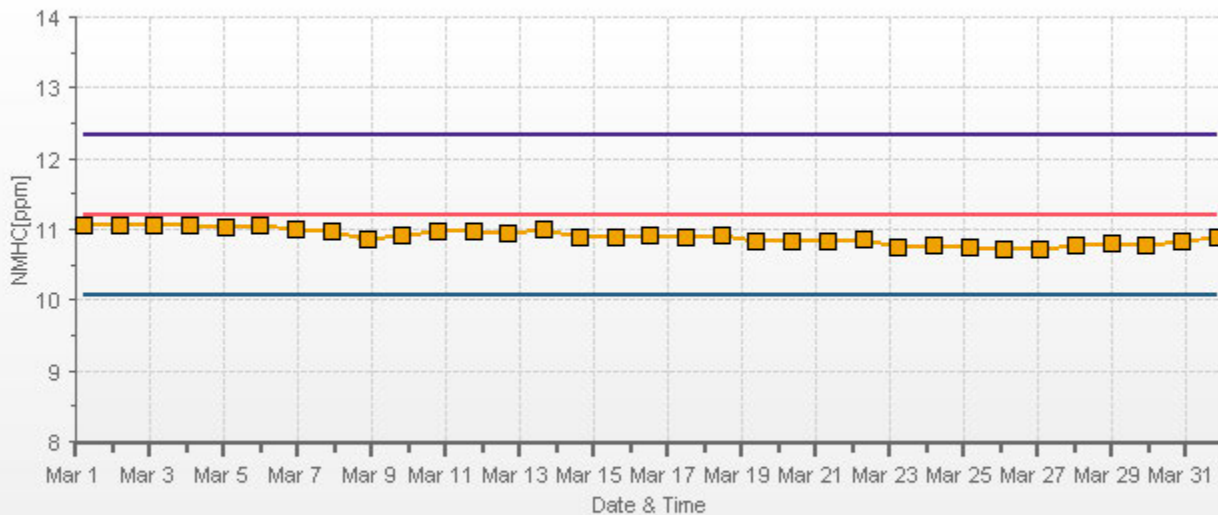
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	18.9	0.0	0.0	0.0	0.0	18.9
NE	5.4	0.0	0.0	0.0	0.0	5.4
E	18.8	0.0	0.0	0.0	0.0	18.8
SE	3.8	0.0	0.0	0.0	0.0	3.8
S	19.9	0.0	0.0	0.0	0.0	19.9
SW	15.1	0.1	0.0	0.0	0.0	15.3
W	9.2	0.0	0.0	0.0	0.0	9.2
NW	3.0	0.0	0.0	0.0	0.0	3.0
Summary	94.1	0.1	0.0	0.0	0.0	94.2

% Icon	Classes (ppm)	94	0	0	0	0	0
	0-0.1	0	0.1-0.3	0.3-1	1-2	>2.0	

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 5.79% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 18/03 Type: Span



Span Meas Span Ref Span Low Span High

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

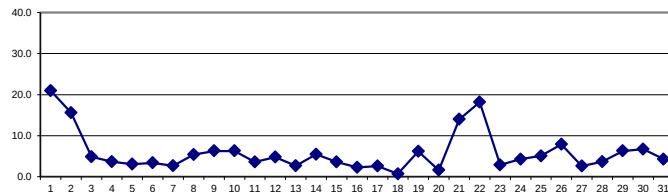
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	11.0	15.1	18.8	19.1	20.0	19.9	20.0	20.4	19.9	21.5	23.3	26.4	24.1	23.9	25.1	25.8	25.1	21.2	20.2	20.9	21.0	21.7	21.1	21.6	11.0	26.4	21.0	24
2	22.4	21.6	21.0	19.1	19.3	20.6	18.8	19.0	19.1	18.2	17.8	20.0	17.6	15.5	15.1	13.5	12.8	13.7	13.0	10.3	7.9	7.8	7.2	6.7	6.7	22.4	15.6	24
3	5.0	4.5	4.0	4.3	3.7	2.6	2.8	0.9	1.2	3.2	5.4	6.1	9.5	10.9	12.0	10.3	10.1	8.7	8.3	7.3	7.5	7.5	7.9	0.9	12.0	4.9	24	
4	8.2	7.9	7.2	7.5	7.7	6.8	6.9	5.8	5.9	7.0	7.7	6.6	5.4	2.1	5.2	3.5	4.1	2.1	1.1	1.6	2.1	2.4	1.3	1.2	1.1	8.2	3.7	24
5	1.7	1.3	0.6	2.1	2.3	2.7	2.5	3.3	3.3	2.9	3.4	3.5	3.7	7.0	4.9	3.7	4.0	4.8	3.5	2.9	3.9	4.5	5.0	3.7	0.6	7.0	3.1	24
6	4.1	2.1	1.7	3.2	3.1	4.4	4.3	4.9	5.2	6.3	6.9	4.6	4.6	4.3	5.2	4.8	3.7	2.5	1.5	2.6	2.6	2.5	2.2	2.3	1.5	6.9	3.4	24
7	1.8	3.0	3.5	3.5	4.5	4.7	5.2	4.1	3.6	3.4	2.9	3.9	4.3	4.3	4.6	3.8	3.6	3.5	1.2	2.6	3.0	2.9	3.4	3.1	1.2	5.2	2.7	24
8	1.6	1.7	2.0	2.3	3.2	3.3	1.4	4.1	6.6	6.6	8.0	9.8	10.3	11.1	10.4	12.0	11.5	11.9	7.0	3.6	4.3	5.5	4.9	4.3	1.4	12.0	5.4	24
9	4.3	4.1	3.9	3.4	2.8	5.8	6.5	6.8	9.7	10.9	11.2	11.6	9.7	10.6	10.7	8.5	6.9	6.6	5.2	4.2	4.7	5.4	6.2	7.8	2.8	11.6	6.3	24
10	7.4	4.2	5.7	6.3	5.3	5.3	4.2	4.8	6.2	7.7	10.3	9.9	10.4	13.6	11.3	11.7	11.3	9.2	5.5	1.3	1.7	3.5	3.3	3.8	1.3	13.6	6.3	24
11	3.7	3.6	3.4	4.8	4.0	4.6	2.3	2.8	2.9	3.7	5.4	5.8	5.8	8.0	6.7	3.3	4.1	2.5	1.4	2.8	3.3	0.7	3.2	2.0	0.7	8.0	3.6	24
12	1.5	3.1	4.3	5.0	5.2	5.8	6.0	6.9	7.0	7.3	5.7	5.1	4.2	4.8	6.4	6.0	5.5	4.3	3.5	2.9	3.5	4.7	3.8	3.2	1.5	7.3	4.8	24
13	4.0	4.2	5.4	3.9	1.1	3.0	6.2	5.5	4.4	3.3	3.4	4.5	2.8	5.6	4.7	6.2	4.6	2.8	4.1	10.1	13.6	10.5	10.5	10.3	1.1	13.6	2.7	24
14	9.5	9.8	11.4	8.8	8.2	8.4	6.9	8.2	6.1	6.1	8.2	3.9	2.9	2.5	7.0	5.7	6.1	3.4	5.0	10.7	11.2	10.1	8.4	6.2	2.5	11.4	5.5	24
15	6.8	7.7	6.9	5.7	5.5	5.2	5.1	4.3	6.5	7.4	4.8	5.5	3.5	2.5	1.6	5.1	1.9	3.1	1.4	0.8	2.3	2.0	2.0	2.5	0.8	7.7	3.6	24
16	2.6	2.9	0.3	0.7	0.6	2.7	4.7	5.9	3.8	5.0	7.5	8.0	7.4	7.1	5.5	6.2	5.2	4.3	3.7	3.9	3.5	3.8	3.3	2.9	0.3	8.0	2.3	24
17	2.5	2.2	2.2	1.7	1.0	3.3	5.1	5.0	2.5	6.8	6.1	4.3	4.8	7.4	7.7	8.6	8.3	7.2	3.6	2.4	2.5	2.2	1.8	2.7	1.0	8.6	2.6	24
18	3.2	1.1	0.6	3.2	2.4	4.2	4.6	4.0	5.4	3.5	3.0	2.3	4.8	5.6	4.3	3.9	1.3	3.8	1.0	0.3	2.5	2.3	3.1	5.3	0.3	5.6	0.7	24
19	5.1	5.0	5.9	7.2	7.9	8.8	10.1	10.4	8.2	7.0	6.6	6.4	8.0	8.8	9.3	8.5	7.6	7.5	8.7	6.7	5.1	3.3	3.7	4.4	3.3	10.4	6.2	24
20	4.5	3.4	4.7	8.1	8.4	4.0	4.3	4.7	3.4	5.5	4.2	5.8	6.2	6.9	5.9	4.4	6.3	7.6	4.2	1.2	0.8	0.2	0.3	2.5	0.2	8.4	1.6	24
21	1.7	4.2	5.9	7.6	8.6	11.0	9.9	12.4	12.6	14.1	15.1	16.8	13.6	16.4	18.1	20.1	17.7	20.5	17.2	19.0	18.4	20.7	20.1	16.4	1.7	20.7	14.0	24
22	17.0	15.7	11.6	10.8	15.1	16.6	16.3	14.8	16.1	17.3	17.2	18.7	16.9	20.7	21.1	22.2	21.6	22.0	22.8	22.0	22.2	21.8	21.6	20.1	10.8	22.8	18.2	24
23	21.0	18.0	14.5	14.4	13.7	12.8	8.9	7.7	7.1	13.8	15.4	15.5	16.6	11.8	15.3	14.4	12.0	7.7	5.1	3.5	6.5	5.6	2.5	3.0	2.5	21.0	2.9	24
24	4.7	5.7	5.5	5.8	6.9	7.3	7.8	8.5	8.5	8.7	9.0	7.1	8.6	7.2	6.3	6.6	4.4	2.8	2.5	0.6	2.4	3.0	3.5	4.8	0.6	9.0	4.3	24
25	5.4	5.1	4.5	5.8	6.0	7.5	6.7	5.9	6.8	7.3	7.5	8.2	7.7	7.6	7.6	8.2	7.2	3.3	1.5	4.8	7.5	8.1	4.3	8.0	1.5	8.2	5.1	24
26	5.6	7.2	7.4	7.0	8.7	10.1	8.8	9.8	11.2	10.7	11.4	11.6	11.6	11.3	10.2	9.1	9.4	8.0	7.3	6.5	5.3	2.9	2.6	2.7	2.6	11.6	7.9	24
27	5.6	9.4	11.1	11.2	11.9	10.0	9.5	8.3	6.5	6.6	9.9	10.8	10.5	10.2	11.3	8.3	8.3	5.5	3.1	2.4	4.1	6.7	5.8	4.8	2.4	11.9	2.6	24
28	4.8	6.0	3.8	3.6	4.6	5.7	3.3	3.0	6.0	5.7	5.8	7.9	8.6	8.5	8.3	6.1	6.9	5.5	5.3	7.0	6.9	7.6	6.2	7.0	3.0	8.6	3.7	24
29	5.8	3.8	4.4	2.1	1.0	1.7	0.9	3.2	5.2	3.6	6.0	7.9	7.6	9.9	9.9	10.5	10.0	9.2	7.7	9.2	8.3	9.7	10.9	11.5	0.9	11.5	6.3	24
30	9.9	10.2	11.3	12.9	12.0	11.5	8.2	8.6	9.2	10.4	10.4	11.2	10.7	11.2	10.0	9.4	6.4	4.8	4.7	4.0	4.6	4.4	5.4	5.3	4.0	12.9	6.7	24
31	5.2	4.7	5.0	5.1	5.5	5.8	4.7	4.9	7.5	6.7	5.2	6.3	8.2	5.6	6.2	5.4	4.9	3.3	2.2	1.4	2.3	2.2	2.2	3.1	1.4	8.2	4.3	24
HOURLY MAX	22.4	21.6	21.0	19.1	20.0	20.6	20.0	20.4	19.9	21.5	23.3	26.4	24.1	23.9	25.1	25.8	25.1	22.0	22.8	22.0	22.2	21.8	21.6	21.6				
HOURLY AVG																												

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 6, 2017
DECLINATION : MAGNETIC DECLINATION 15 DEGREE EAST

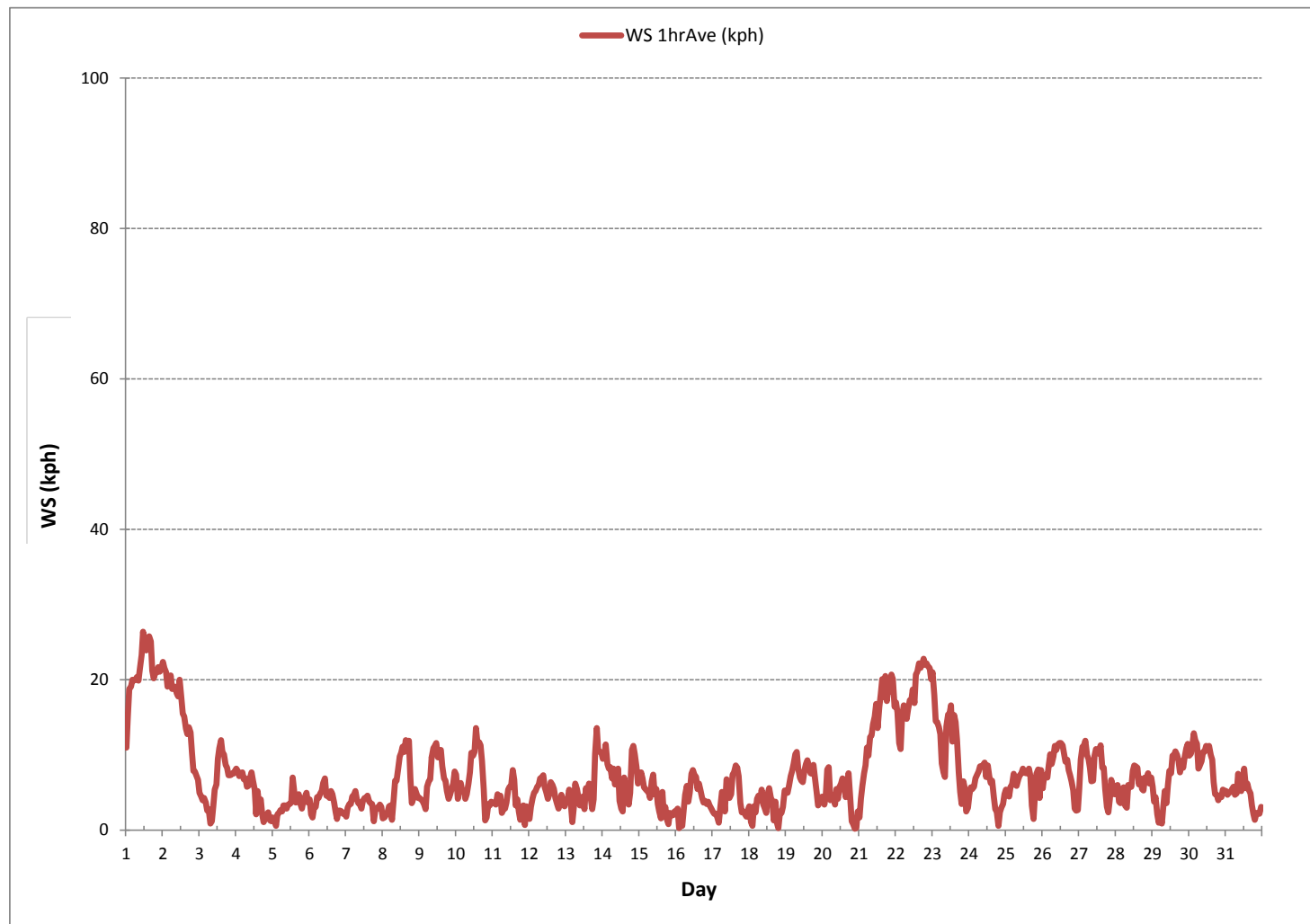
24 HR AVERAGES March 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744				
MINIMUM 1-HR AVERAGE	0.2	kph	@ HOUR	21	ON DAY 20
MAXIMUM 1-HR AVERAGE:	26.4	kph	@ HOUR	11	ON DAY 1
MAXIMUM 24-HR AVERAGE:	21.0	kph			ON DAY 1
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	5.2		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	1.7	kph

WIND SPEED Hourly Averages (WS kph)



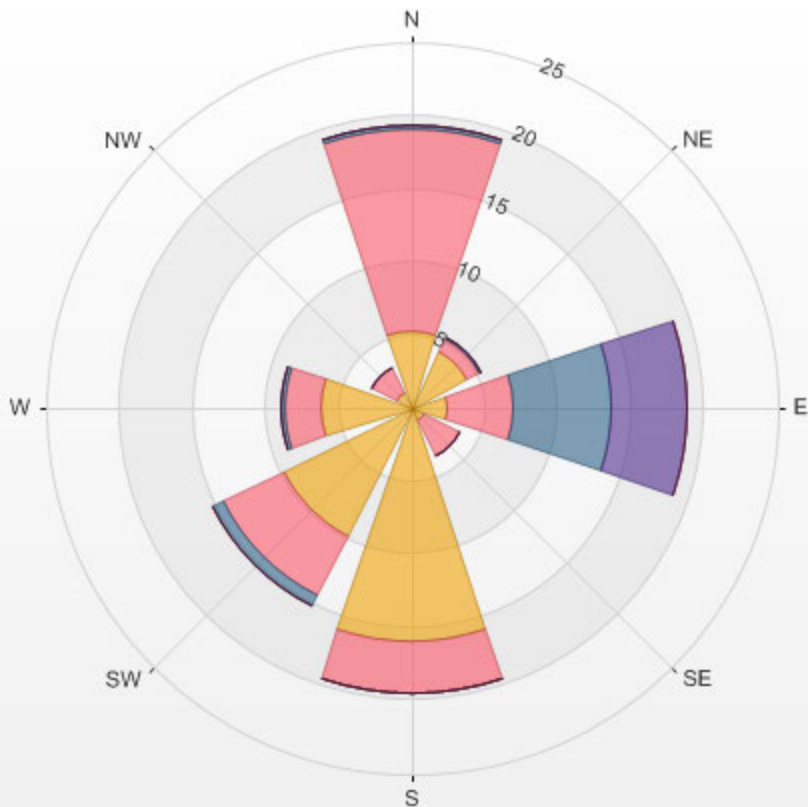
Wind: PRAMP_RENO
 Monitor: WSP [kph]
 Monthly: 18/03
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 6.05%

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	5.2	13.8	0.3	0.0	0.0	0.0	19.4
NE	4.3	0.9	0.1	0.0	0.0	0.0	5.4
E	2.4	4.6	6.7	5.1	0.0	0.0	18.8
SE	0.9	2.7	0.0	0.0	0.0	0.0	3.6
S	16.0	3.5	0.0	0.0	0.0	0.0	19.5
SW	9.8	4.6	0.8	0.0	0.0	0.0	15.2
W	6.2	2.6	0.3	0.0	0.0	0.0	9.0
NW	1.2	1.9	0.0	0.0	0.0	0.0	3.1
Summary	46.1	34.5	8.2	5.1	0.0	0.0	93.9

% Icon	Classes (kph)	46	35	8	5	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 2018/03/01 00:00 - 2018/03/31 23:00 Calm: 6.05% Calm Wind Avg Speed: 1.14(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 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	E	E	E	E	E	E	E	ENE	ENE	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	24
2	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	ESE	ESE	ESE	E	E	24
3	ESE	ESE	E	E	E	E	ENE	WNW	WNW	NE	NNE	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	24	
4	N	N	N	NNW	NNW	N	N	N	N	NNW	NNW	NNW	NNW	NE	W	WNW	W	W	SW	S	SSW	SSW	SSW	SSW	NNW	24	
5	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	SSW	S	SSW	SW	WSW	WSW	W	SW	SW	SW	SW	SW	WSW	SW	SW	24	
6	W	WNW	WNW	WNW	W	WSW	SW	SW	SW	WSW	WSW	WSW	W	SW	SSW	WSW	SW	WSW	SSW	S	SSW	SSW	SSW	SSW	WSW	24	
7	S	SSW	S	SSE	SSE	SSE	S	S	S	S	S	W	W	W	WNW	WSW	WSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	24	
8	S	SSW	S	S	SSW	SSW	SSW	SSE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	SE	SSE	SSE	SSE	SE	24		
9	S	S	S	S	S	SSW	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	24	
10	SSW	SSW	SSW	S	S	S	S	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	S	SSW	SSW	SSW	S	SW	24	
11	SSW	S	S	S	SSW	SSW	SSW	SSW	S	S	SSE	SSE	S	SSW	S	SSW	S	SSW	SSW	SSW	SSW	NW	SSW	SW	S	24	
12	SSW	SSW	S	S	S	S	S	S	S	S	S	S	SSE	S	S	S	S	S	S	SSW	SSW	S	SSW	SSW	S	24	
13	S	S	S	SSW	SSW	SSW	S	S	S	S	SSW	S	NE	NNE	NNE	N	N	NNE	ENE	E	E	E	E	E	ESE	24	
14	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	E	NE	NNE	N	NNW	NNW	N	E	ESE	ESE	SE	SE	SSE	ESE	24	
15	SSE	SSE	SSE	SSE	SSE	S	S	S	S	SSW	WSW	SW	SSW	W	NE	WSW	SSW	S	SSW	SSW	SSW	SSW	S	SSW	S	24	
16	S	SSW	S	ESE	NNW	N	NNW	NNW	N	N	N	NNW	NNW	NW	WNW	WSW	WSW	WSW	WSW	SW	SW	SSW	SW	SW	WNW	24	
17	SSW	S	S	SSW	SE	E	ESE	ESE	SSE	E	NE	N	NNE	N	N	NNE	NE	ENE	NE	NNE	NNE	NNE	N	N	NE	24	
18	NNE	N	ENE	ENE	NE	ENE	ENE	ENE	ENE	NE	NE	SW	WNW	W	WNW	WNW	NNE	NE	NE	ESE	S	SSE	SSE	SSE	NE	24	
19	S	S	S	S	S	S	S	S	S	S	S	S	SSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	24	
20	SW	SSW	SSW	SW	SW	SW	WSW	WSW	NW	N	NE	N	N	N	NNE	N	WSW	WSW	SW	SE	SE	SSE	S	ENE	W	24	
21	ENE	ENE	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	24	
22	E	E	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	E	E	E	E	E	E	E	E	ENE	ENE	ENE	24	
23	ENE	ENE	ENE	ENE	E	E	ESE	SE	SSW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	WSW	WSW	WNW	SSW	24	
24	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NW	WNW	WSW	W	W	WSW	WSW	NE	ENE	NNW	NNW	NNE	NNE	NE	NW	24	
25	NNE	NNE	NNE	N	N	N	N	N	NNW	NNW	N	N	N	N	N	N	N	N	NE	ESE	ESE	ESE	NE	ENE	NNE	24	
26	NE	N	N	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	N	N	NNW	N	NNW	N	N	N	NNE	NNE	NE	ENE	N	24	
27	ESE	E	E	E	E	ESE	E	E	ENE	NNE	N	N	NNW	NNW	NNW	NNW	NNW	NW	WSW	SW	SW	SSW	SSW	SSW	NE	24	
28	SSW	SSW	SSW	SSW	SW	WSW	WSW	NNW	N	N	NNE	N	N	N	N	N	N	N	N	NNW	NNW	N	NNE	NE	NNW	24	
29	NNE	NE	NE	NE	NNW	N	NNE	NE	ENE	NE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	24	
30	N	N	NNE	NNE	N	N	N	N	NNW	N	NNW	NNW	NNW	NW	NW	NW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	NNW	24	
31	WSW	SW	SW	SW	SW	SW	SSW	SSW	SW	SW	SSW	WSW	WSW	W	W	W	W	WSW	WSW	SW	SSW	SSW	SSW	SSW	SW	24	

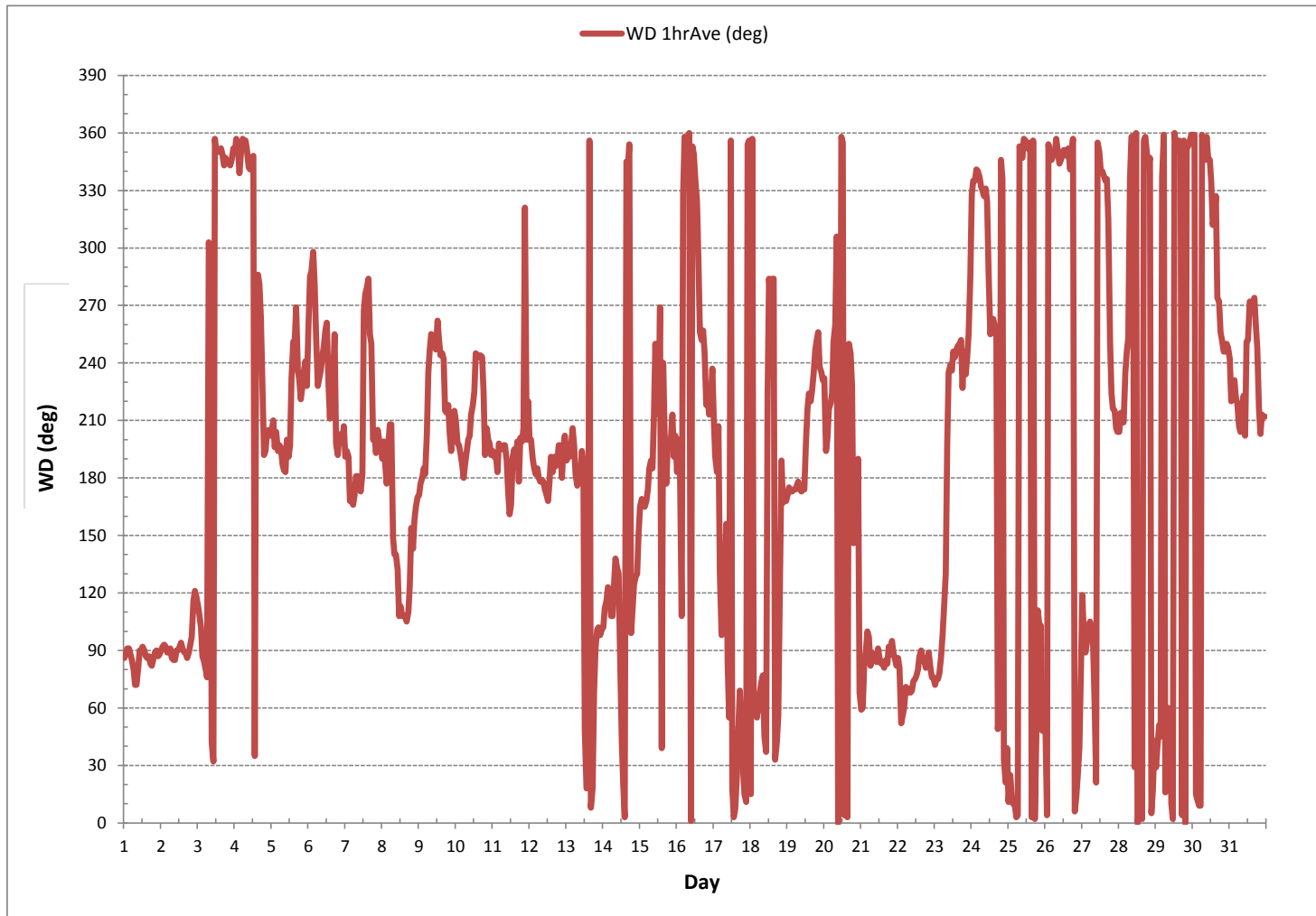
STATUS FLAG CODES

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 6, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	102		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	82 (E)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

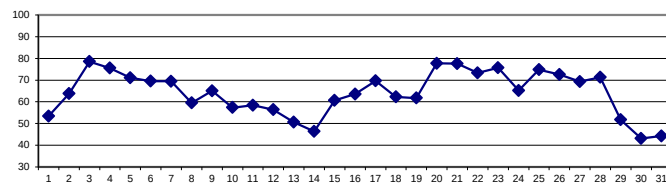
RELATIVE HUMIDITY Hourly Averages (RH %)

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

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

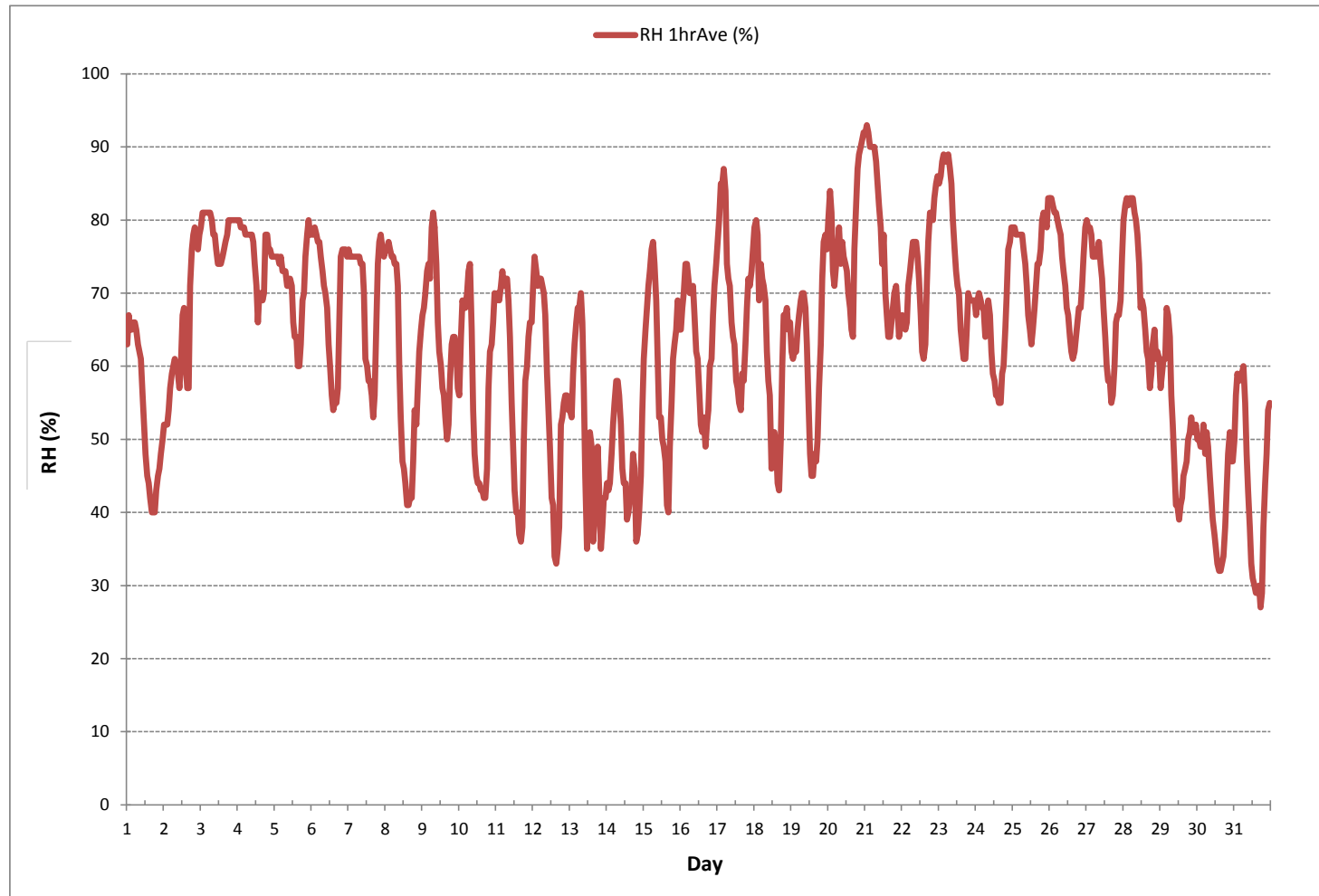
24 HR AVERAGES March 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	27	%	@ HOUR	17	ON DAY	31
MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR	1	ON DAY	21
MAXIMUM 24-HR AVERAGE:	79	%			ON DAY	3
OPERATIONAL TIME:						744 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	14		MONTHLY AVERAGE:			64 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 2018

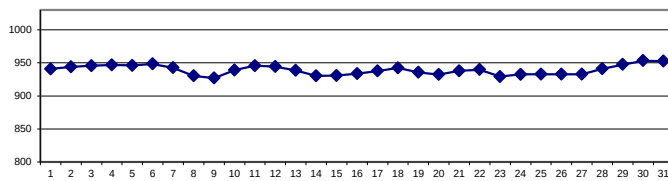
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	935	936	936	936	937	938	939	939	940	940	941	941	942	942	942	942	942	943	943	944	945	945	945	945	935	945	941	24
2	945	945	944	944	944	944	944	944	944	944	944	943	943	943	942	943	943	943	944	944	944	944	945	945	942	945	944	24
3	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	946	946	947	947	947	947	947	947	945	947	946	24
4	947	947	947	947	947	947	947	947	947	947	946	946	946	946	946	946	946	946	946	947	947	947	947	947	946	947	947	24
5	946	946	946	946	946	946	946	946	946	945	945	945	946	946	945	945	945	946	947	947	947	947	947	948	945	948	946	24
6	948	949	949	949	949	950	950	951	950	950	949	949	949	948	948	947	947	947	947	947	947	947	947	947	947	951	948	24
7	946	946	945	945	944	944	943	943	942	942	942	942	942	942	942	942	941	941	941	941	941	941	941	940	940	946	942	24
8	940	940	939	938	938	937	936	935	934	933	932	931	930	928	927	926	925	924	924	923	922	922	922	921	921	940	930	24
9	921	921	921	921	921	922	923	924	924	925	926	927	928	929	929	930	930	931	931	931	932	932	933	933	921	933	927	24
10	933	934	935	936	936	937	937	938	938	939	939	940	940	940	941	941	941	941	941	941	941	942	942	943	933	943	939	24
11	943	943	943	944	944	945	945	945	945	946	946	946	947	947	947	947	947	947	946	946	946	946	947	947	943	947	946	24
12	947	947	947	946	946	946	946	945	945	946	946	946	945	945	945	944	944	943	942	942	941	941	941	941	941	947	944	24
13	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	938	938	937	936	936	936	936	935	935	935	940	939	24
14	934	934	933	933	932	932	932	931	931	931	931	931	931	930	929	928	928	927	928	928	928	928	928	928	927	934	930	24
15	928	928	929	929	930	930	930	930	930	931	931	932	932	932	932	931	931	931	931	931	931	931	931	931	928	932	931	24
16	931	931	931	931	932	932	932	932	932	933	933	933	934	934	934	934	935	935	935	935	936	936	936	936	931	936	933	24
17	936	936	936	936	936	936	936	937	937	937	938	938	938	938	938	938	938	939	939	939	939	940	940	940	936	940	938	24
18	941	941	941	941	941	942	942	942	943	943	944	944	944	944	943	943	943	943	942	942	942	941	941	941	941	944	942	24
19	940	939	939	939	938	937	937	936	936	936	936	936	935	935	934	934	934	934	934	934	934	934	934	934	934	940	936	24
20	933	933	933	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	933	933	933	933	932	933	932	24
21	933	934	934	934	934	935	935	936	936	937	937	938	938	939	939	939	939	940	940	941	942	942	942	943	933	943	938	24
22	943	943	943	944	943	943	943	943	943	943	942	942	941	940	939	938	938	937	936	935	935	933	932	931	931	944	940	24
23	930	929	929	928	927	927	927	926	927	928	928	929	930	930	930	930	930	930	930	931	931	931	931	931	926	931	929	24
24	930	931	931	931	931	931	932	932	933	933	933	933	933	933	933	933	933	933	933	933	934	934	933	933	930	934	932	24
25	933	933	934	934	934	934	935	935	935	935	935	934	934	934	933	933	933	932	931	931	931	929	929	928	928	935	933	24
26	928	928	928	929	929	930	930	931	931	932	933	933	934	934	935	935	936	936	936	937	937	936	935	934	928	937	933	24
27	933	932	930	930	928	928	928	927	927	928	929	930	932	933	934	935	936	936	937	938	938	938	939	939	927	939	933	24
28	939	939	938	939	939	939	939	939	939	940	940	941	941	941	942	942	942	942	942	943	943	944	945	945	938	945	941	24
29	946	947	948	948	949	949	949	949	948	949	949	949	948	948	947	947	946	946	946	946	946	946	946	946	946	949	947	24
30	947	947	947	947	948	950	951	952	953	953	954	954	954	955	955	955	956	956	956	957	957	957	957	957	947	957	953	24
31	957	958	957	957	957	957	956	956	955	954	954	954	953	953	952	951	950	949	948	948	948	947	947	946	946	958	953	24
HOURLY MAX	957	958	957	957	957	957	956	956	955	954	954	954	954	955	955	955	956	956	956	957	957	957	957	957	946	958	953	24
HOURLY AVG	939	939	939	939	939	939	939	939	939	939	939	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	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

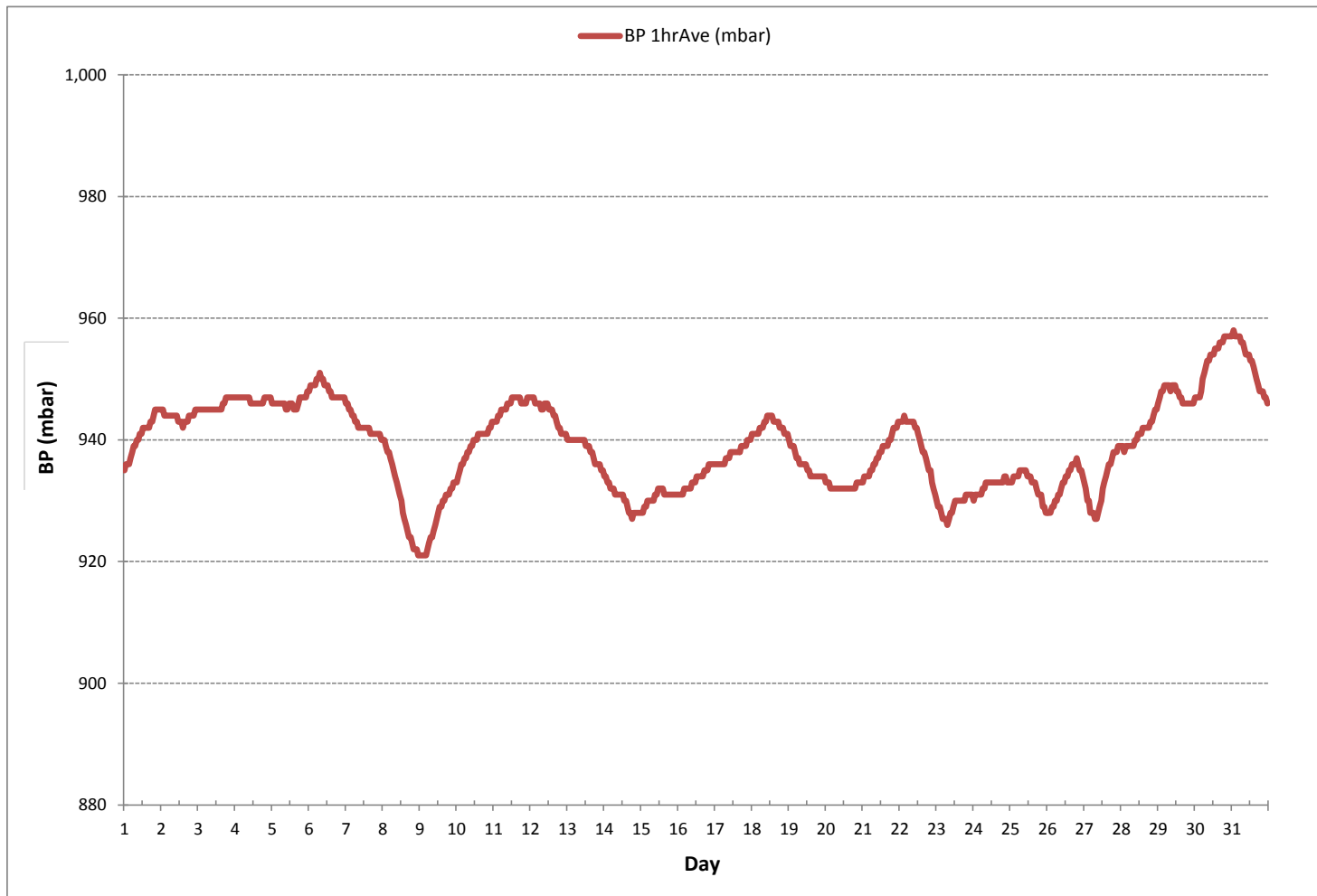
24 HR AVERAGES March 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	921	mbar	@ HOUR	23	ON DAY	8
MAXIMUM 1-HR AVERAGE:	958	mbar	@ HOUR	1	ON DAY	31
MAXIMUM 24-HR AVERAGE:	953	mbar			ON DAY	30
OPERATIONAL TIME:						744 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	7					MONTHLY AVERAGE: 939 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 2018

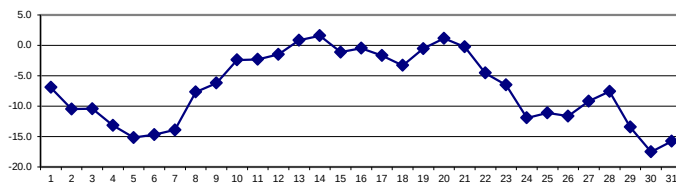
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	-7.4	-7.1	-5.9	-6.0	-7.0	-7.8	-8.3	-9.1	-9.2	-8.6	-6.8	-5.6	-5.0	-5.0	-5.2	-5.3	-5.4	-5.7	-6.2	-6.8	-7.4	-7.9	-8.5	-9.1	-9.2	-5.0	-6.9	24
2	-9.6	-10.0	-10.4	-10.9	-11.6	-12.2	-12.6	-12.9	-12.8	-12.5	-11.8	-11.0	-10.5	-10.0	-9.5	-9.0	-8.6	-9.5	-9.9	-9.8	-9.6	-9.0	-8.7	-8.9	-12.9	-8.6	-10.5	24
3	-9.0	-9.0	-9.3	-9.7	-10.0	-10.2	-10.2	-10.4	-11.8	-10.1	-9.6	-9.1	-9.2	-9.3	-10.0	-10.7	-10.9	-11.0	-11.1	-11.2	-11.7	-12.3	-12.2	-12.2	-12.3	-9.0	-10.4	24
4	-12.3	-12.6	-13.1	-13.3	-13.6	-13.7	-13.8	-14.0	-13.5	-12.8	-12.3	-11.7	-10.5	-9.0	-9.9	-9.8	-9.5	-10.0	-12.9	-15.4	-17.9	-18.2	-18.0	-18.2	-18.2	-9.0	-13.2	24
5	-18.0	-17.7	-17.5	-18.6	-17.9	-19.3	-19.6	-19.5	-18.8	-17.3	-14.3	-12.9	-10.9	-11.7	-11.8	-11.3	-11.4	-13.0	-14.7	-14.2	-13.6	-13.4	-12.9	-13.5	-19.6	-10.9	-15.2	24
6	-13.3	-13.3	-12.8	-13.2	-14.1	-16.1	-17.8	-18.7	-17.1	-15.1	-14.0	-12.9	-12.4	-11.3	-10.6	-10.6	-10.6	-10.8	-14.5	-17.6	-18.5	-19.3	-18.9	-18.9	-19.3	-10.6	-14.7	24
7	-18.1	-17.5	-18.6	-16.8	-16.4	-16.9	-16.5	-16.3	-15.6	-14.4	-11.9	-9.1	-8.7	-8.1	-8.4	-8.4	-7.2	-8.5	-11.9	-15.1	-16.1	-16.8	-17.9	-18.6	-18.6	-7.2	-13.9	24
8	-17.6	-17.3	-15.8	-15.6	-16.8	-17.4	-17.7	-17.3	-12.6	-8.7	-6.0	-3.0	-1.2	0.2	0.9	1.2	0.7	0.1	-1.0	-2.5	-2.2	-2.9	-5.3	-6.5	-17.7	1.2	-7.7	24
9	-7.3	-7.8	-8.6	-7.5	-6.7	-6.4	-7.9	-8.4	-7.9	-7.2	-6.9	-6.0	-5.2	-4.1	-3.1	-2.0	-1.6	-2.5	-5.0	-7.1	-7.8	-8.3	-7.4	-6.0	-8.6	-1.6	-6.2	24
10	-5.6	-8.2	-9.5	-8.2	-7.6	-8.1	-9.2	-9.6	-4.8	-0.8	1.6	2.8	3.7	3.9	4.5	4.6	4.6	4.4	2.7	-1.1	-2.6	-3.5	-5.2	-6.5	-9.6	4.6	-2.4	24
11	-5.6	-5.8	-5.3	-6.3	-6.3	-6.6	-6.0	-6.6	-5.6	-4.2	-1.2	1.3	3.5	3.8	3.8	5.2	5.0	4.2	-0.2	-2.6	-3.3	-5.2	-6.4	-5.1	-6.6	5.2	-2.3	24
12	-6.3	-7.7	-7.5	-7.2	-7.5	-7.9	-7.7	-6.9	-6.0	-2.9	-1.0	1.3	4.5	5.7	7.1	8.0	7.3	5.5	0.4	-0.5	-1.4	-1.9	-1.9	-1.6	-7.9	8.0	-1.5	24
13	-1.9	-1.7	-3.3	-3.6	-3.9	-4.6	-5.2	-5.6	-5.3	-2.1	2.1	5.7	4.2	1.7	2.6	5.6	5.3	4.5	2.0	4.1	6.6	5.3	3.7	3.2	-5.6	6.6	0.8	24
14	2.3	2.3	1.5	0.2	-1.1	-1.8	-2.7	-2.6	-2.0	-0.5	1.5	2.5	2.5	4.6	3.9	3.9	4.1	3.2	3.2	4.5	3.8	2.9	1.9	-0.3	-2.7	4.6	1.6	24
15	-1.5	-3.0	-4.1	-4.9	-6.2	-7.1	-7.4	-7.0	-5.4	-2.4	-0.2	0.1	1.9	2.6	3.3	4.3	6.0	4.6	2.0	0.4	-0.2	-0.8	-1.3	-0.9	-7.4	6.0	-1.1	24
16	-1.0	-2.2	-2.6	-3.8	-3.2	-2.9	-2.9	-2.6	-3.1	-2.2	-0.7	-0.2	1.0	2.4	2.9	2.7	3.9	3.1	2.6	1.6	1.1	-1.0	-1.6	-2.5	-3.8	3.9	-0.5	24
17	-3.8	-4.9	-5.5	-6.1	-6.8	-5.2	-4.2	-3.7	-3.0	-1.3	-0.7	-0.6	1.2	2.1	3.0	3.1	2.4	2.1	1.3	0.0	-1.5	-1.6	-2.6	-3.9	-6.8	3.1	-1.7	24
18	-5.3	-5.2	-5.4	-4.7	-6.1	-5.7	-5.6	-5.7	-4.2	-2.6	-2.2	1.2	0.2	0.2	0.8	1.4	1.6	-0.1	-1.9	-3.9	-5.4	-6.3	-6.7	-7.6	-7.6	1.6	-3.3	24
19	-6.9	-6.6	-6.9	-7.0	-6.8	-6.7	-7.0	-6.4	-5.1	-3.9	-1.1	2.2	4.8	5.9	6.2	5.8	5.9	5.2	3.9	3.1	2.5	2.0	1.8	2.0	-7.0	6.2	-0.5	24
20	2.0	0.8	-0.1	0.4	0.4	-0.6	-1.1	-1.4	0.2	0.9	1.4	2.1	2.7	3.2	3.6	4.0	4.0	2.4	1.4	0.7	0.2	0.3	0.1	0.1	-1.4	4.0	1.2	24
21	0.1	0.2	-0.7	-1.3	-1.1	-0.6	-0.4	-0.7	-0.8	-0.7	0.0	0.6	0.6	1.2	1.3	1.3	1.4	0.6	-0.1	-0.7	-1.0	-1.3	-1.6	-2.2	-2.2	1.4	-0.2	24
22	-2.5	-2.9	-5.0	-5.9	-6.4	-6.6	-7.2	-7.8	-7.7	-7.3	-6.6	-5.8	-4.7	-3.6	-2.9	-2.7	-3.3	-3.5	-3.4	-3.2	-2.6	-2.5	-2.6	-2.8	-7.8	-2.5	-4.6	24
23	-3.0	-3.0	-3.0	-2.9	-2.5	-2.1	-2.1	-1.9	-2.5	-6.8	-8.4	-8.0	-7.9	-7.4	-7.6	-7.4	-7.1	-7.6	-9.0	-10.9	-11.1	-11.1	-11.3	-11.6	-11.6	-1.9	-6.5	24
24	-10.5	-10.9	-11.1	-11.2	-11.6	-12.4	-13.0	-13.4	-13.3	-13.2	-12.7	-11.7	-11.4	-11.0	-11.0	-10.8	-10.8	-11.4	-11.8	-12.1	-12.3	-12.8	-13.1	-12.7	-13.4	-10.5	-11.9	24
25	-12.6	-12.8	-12.6	-12.8	-13.1	-13.3	-13.9	-14.7	-14.3	-13.5	-12.4	-11.2	-10.1	-9.5	-9.4	-9.4	-9.5	-9.2	-9.0	-8.5	-8.6	-8.7	-8.6	-8.8	-14.7	-8.5	-11.1	24
26	-8.7	-9.3	-10.6	-10.8	-11.4	-12.6	-13.0	-13.0	-13.5	-13.5	-13.3	-13.1	-12.7	-11.8	-10.7	-9.8	-9.8	-10.5	-11.2	-11.8	-12.0	-12.3	-12.4	-11.8	-13.5	-8.7	-11.7	24
27	-10.3	-10.5	-10.7	-10.6	-10.6	-10.6	-10.9	-10.7	-10.3	-9.4	-9.1	-8.6	-8.2	-7.5	-7.1	-7.2	-6.7	-6.8	-7.8	-9.3	-9.1	-8.8	-9.4	-10.1	-10.9	-6.7	-9.2	24
28	-10.7	-9.7	-9.7	-9.6	-9.1	-8.7	-8.6	-7.9	-7.6	-7.1	-6.6	-6.2	-6.0	-5.9	-5.6	-5.4	-5.4	-5.3	-5.7	-6.6	-7.3	-8.2	-9.4	-10.2	-10.7	-5.3	-7.6	24
29	-11.0	-13.2	-15.3	-17.0	-18.2	-18.8	-19.8	-17.5	-15.8	-13.4	-12.5	-12.1	-10.8	-10.4	-9.3	-9.4	-8.8	-9.1	-10.3	-11.7	-13.3	-13.9	-15.1	-16.1	-19.8	-8.8	-13.5	24
30	-16.5	-16.8	-17.2	-18.2	-19.3	-19.6	-20.9	-21.3	-21.1	-20.7	-19.2	-18.0	-16.7	-15.7	-14.8	-14.0	-13.4	-13.4	-14.5	-16.2	-17.8	-19.0	-17.9	-18.1	-21.3	-13.4	-17.5	24
31	-19.1	-22.0	-22.2	-21.6	-21.8	-22.0	-22.4	-21.0	-17.9	-16.2	-14.0	-11.9	-11.2	-9.8	-9.5	-8.7	-8.6	-8.5	-9.8	-12.9	-15.6	-16.5	-17.9	-17.4	-22.4	-8.5	-15.8	24
HOURLY MAX	2.3	2.3	1.5	0.4	0.4	-0.6	-0.4	-0.7	0.2	0.9	2.1	5.7	4.8	5.9	7.1	8.0	7.3	5.5	3.9	4.5	6.6	5.3	3.7	3.2				
HOURLY AVG	-8.1	-8.6	-9.0	-9.2	-9.5	-9.8	-10.2	-10.1	-9.3	-8.1	-6.7	-5.4	-4.6	-4.0	-3.6	-3.3	-3.1	-3.8	-5.2	-6.4	-7.0	-7.5	-8.0	-8.3				

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

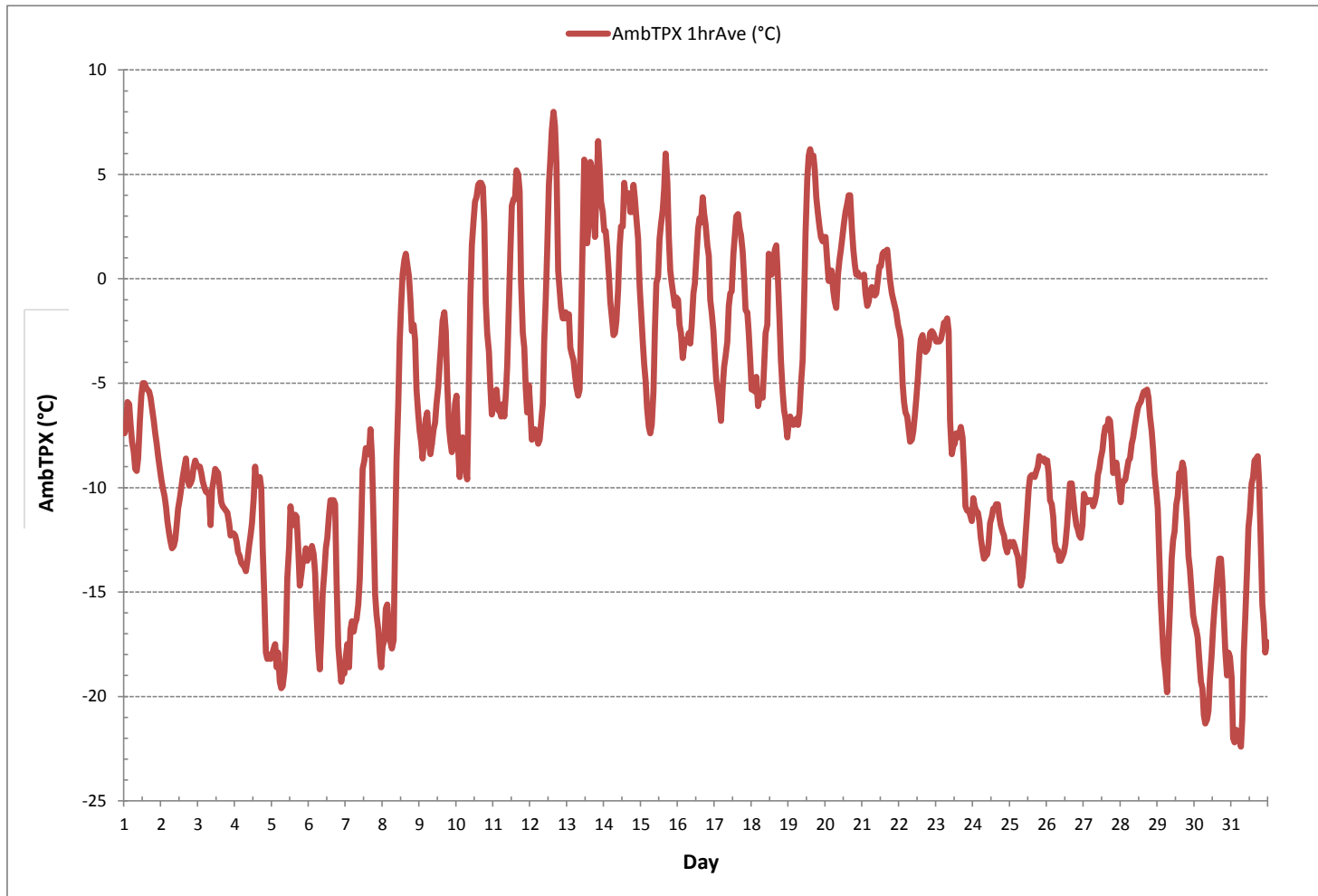
24 HR AVERAGES March 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-22.4	°C	@ HOUR	6	ON DAY	31
MAXIMUM 1-HR AVERAGE:	8.0	°C	@ HOUR	15	ON DAY	12
MAXIMUM 24-HR AVERAGE:	1.6	°C			ON DAY	14
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	6.6		MONTHLY AVERAGE:		-7.0	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

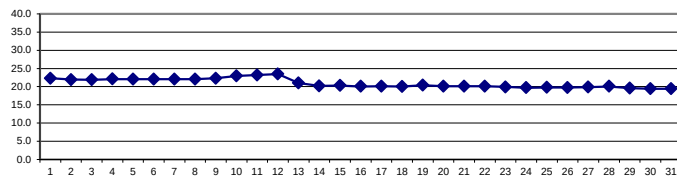
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	22.4	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.5	22.5	22.0	21.9	22.1	22.3	22.5	22.4	22.3	22.2	22.0	21.7	22.0	21.9	21.9	21.7	22.6	22.3	24
2	22.0	22.0	22.1	22.0	22.1	22.1	22.1	22.1	22.1	22.0	21.9	22.1	21.9	21.8	21.9	21.8	21.8	21.6	22.0	21.7	21.9	21.7	22.0	21.6	22.1	21.9	24	
3	21.7	21.7	21.6	21.8	21.8	21.8	21.8	21.8	21.7	21.8	21.9	22.1	22.2	22.2	22.2	22.1	21.9	21.7	21.8	21.6	22.0	21.9	21.9	21.9	21.6	22.2	21.9	24
4	22.0	22.0	21.9	21.9	21.9	22.1	21.9	21.9	22.1	21.9	21.6	22.0	22.0	22.3	22.3	22.4	22.3	22.4	22.7	22.5	21.9	22.1	22.1	22.1	21.6	22.7	22.1	24
5	22.1	22.1	22.1	22.1	22.2	22.1	22.2	22.1	22.2	21.8	21.8	21.6	22.0	22.1	22.1	22.2	22.3	22.4	22.2	21.9	21.8	21.8	22.0	21.6	22.4	22.1	24	
6	21.9	21.9	21.8	22.0	21.9	22.1	22.0	22.3	22.1	21.8	21.8	21.5	21.7	22.1	22.3	22.2	22.2	22.4	22.4	22.1	21.9	22.1	22.1	22.2	21.5	22.4	22.0	24
7	22.1	22.1	22.2	22.2	22.1	22.1	22.1	22.1	22.1	22.0	21.7	21.9	22.2	22.1	22.0	21.3	21.8	22.0	22.4	22.3	21.8	22.0	22.1	22.0	21.3	22.4	22.0	24
8	22.0	22.2	22.0	22.1	22.1	22.1	22.0	22.2	22.0	21.2	22.1	22.0	21.9	21.9	21.9	21.9	22.0	22.2	22.1	22.3	22.2	22.3	22.3	22.4	21.2	22.4	22.1	24
9	22.4	22.4	22.4	22.4	22.4	22.3	22.5	22.4	22.2	22.5	22.4	22.1	21.9	21.9	22.0	21.9	22.3	22.4	22.2	22.3	22.5	22.5	22.5	22.5	21.9	22.5	22.3	24
10	22.5	22.5	22.4	22.6	22.5	22.6	22.4	22.5	22.4	22.0	21.8	22.2	22.8	23.2	23.6	24.3	24.9	25.2	24.7	23.2	22.3	22.4	22.4	22.5	21.8	25.2	22.9	24
11	22.5	22.5	22.4	22.4	22.4	22.4	22.5	22.5	22.4	22.1	21.9	21.8	22.5	23.4	24.4	25.5	26.6	27.0	26.2	24.1	22.3	22.4	22.5	22.3	21.8	27.0	23.2	24
12	22.4	22.5	22.5	22.5	22.4	22.5	22.5	22.5	22.3	22.0	21.8	21.9	22.7	23.8	25.2	26.5	27.6	28.2	27.2	25.2	23.4	22.1	22.1	22.1	21.8	28.2	23.5	24
13	22.2	22.1	22.2	22.1	22.2	22.2	22.2	19.0	19.4	18.6	19.0	20.7	21.7	21.2	21.4	22.0	22.4	22.0	20.4	20.4	20.1	20.0	20.0	20.1	18.6	22.4	21.0	24
14	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.0	19.8	19.7	19.6	19.5	20.1	20.8	21.4	21.4	21.0	20.1	20.0	20.1	20.1	20.1	20.1	19.5	21.4	20.2	24
15	20.1	20.2	20.2	20.2	20.1	20.1	20.2	20.2	20.1	19.9	19.8	19.7	19.5	19.6	20.2	21.1	21.9	22.3	21.6	20.4	20.1	20.2	20.2	20.1	19.5	22.3	20.3	24
16	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.3	20.2	20.1	20.2	20.0	19.9	19.9	19.9	19.9	20.1	20.0	20.1	20.1	20.1	20.1	20.1	20.1	19.9	20.3	20.1	24
17	20.1	20.1	20.1	20.2	20.2	20.2	20.2	20.1	20.2	20.1	20.1	20.1	19.9	19.9	19.9	20.0	20.0	20.0	20.1	20.1	20.1	20.2	20.1	20.1	19.9	20.2	20.1	24
18	20.2	20.2	20.2	20.2	20.1	20.2	20.2	20.1	20.1	19.9	19.7	19.6	19.5	19.6	19.6	20.0	20.5	20.4	20.1	20.2	20.2	20.1	20.2	20.2	19.5	20.5	20.1	24
19	20.1	20.2	20.2	20.3	20.3	20.3	20.4	20.4	20.2	20.1	20.0	19.7	20.1	20.8	21.5	21.8	21.5	21.3	20.5	20.1	20.1	20.1	20.1	20.1	19.7	21.8	20.4	24
20	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.0	20.0	19.7	20.0	19.7	20.0	20.4	20.7	20.7	20.2	20.1	20.1	20.1	20.1	20.1	20.1	19.7	20.7	20.1	24
21	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.1	24
22	20.0	20.1	20.3	20.2	20.3	20.2	20.2	20.2	20.1	20.1	20.2	20.2	20.2	20.1	20.1	20.0	20.1	20.0	20.1	20.1	20.1	20.1	20.2	20.1	20.0	20.3	20.1	24
23	20.2	20.1	20.1	20.1	20.1	20.1	20.1	20.2	20.1	19.9	19.5	19.3	19.3	19.7	19.8	19.9	19.9	20.1	20.1	20.1	20.0	19.7	19.8	19.8	19.3	20.2	19.9	24
24	19.6	19.5	19.3	19.3	19.2	19.6	19.3	19.3	19.3	19.5	19.4	19.4	19.7	19.8	19.8	19.9	19.9	20.1	20.1	20.1	20.2	20.2	20.2	20.1	19.2	20.2	19.7	24
25	19.8	19.6	19.5	19.4	19.3	19.4	19.6	19.3	19.3	19.2	19.5	19.7	19.9	19.9	20.1	20.2	20.2	20.0	20.1	20.1	20.1	20.1	20.2	20.3	19.2	20.3	19.8	24
26	20.1	20.0	19.6	19.4	19.4	19.6	19.5	19.5	19.5	19.4	19.3	19.4	19.3	19.4	19.6	20.0	20.0	20.1	20.3	20.3	20.2	20.2	20.2	20.1	19.3	20.3	19.8	24
27	20.3	20.1	20.1	19.9	19.6	19.5	19.4	19.4	19.6	19.8	19.7	19.7	19.8	19.8	19.9	19.8	20.0	20.0	20.0	20.1	20.1	20.0	20.1	20.1	19.4	20.3	19.9	24
28	20.1	20.1	20.1	20.0	20.1	20.0	20.0	20.1	20.2	20.1	20.1	20.0	20.0	20.1	20.1	20.0	20.1	20.0	20.1	20.1	20.2	20.0	20.0	20.2	20.0	20.2	20.1	24
29	20.1	20.0	19.7	19.2	19.2	19.3	19.2	19.3	19.2	19.2	19.2	19.3	19.6	19.8	19.9	19.8	20.1	20.2	20.1	19.8	19.5	19.4	19.5	19.7	19.2	20.2	19.6	24
30	19.5	19.6	19.6	19.6	19.7	19.7	19.4	19.5	19.4	19.4	19.2	19.1	18.8	18.9	19.2	19.3	19.8	19.9	20.1	19.8	19.4	19.1	19.3	19.2	18.8	20.1	19.4	24
31	19.2	19.2	19.3	19.2	19.2	19.3	19.2	19.2	19.0	18.7	19.4	19.5	19.4	19.5	19.6	19.7	19.9	20.0	20.0	20.1	20.0	19.6	19.3	19.3	18.7	20.1	19.5	24
HOURLY MAX	22.5	22.5	22.5	22.6	22.5	22.6	22.5	22.6	22.6	22.5	22.5	22.2	22.8	23.8	25.2	26.5	27.6	28.2	27.2	25.2	23.4	22.5	22.5	22.5				
HOURLY AVG	20.9	20.9	20.9	20.8	20.8	20.9	20.8	20.8	20.7	20.6	20.5	20.6	20.7	20.9	21.1	21.3	21.5	21.5	21.4	21.1	20.9	20.8	20.8	20.8				

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

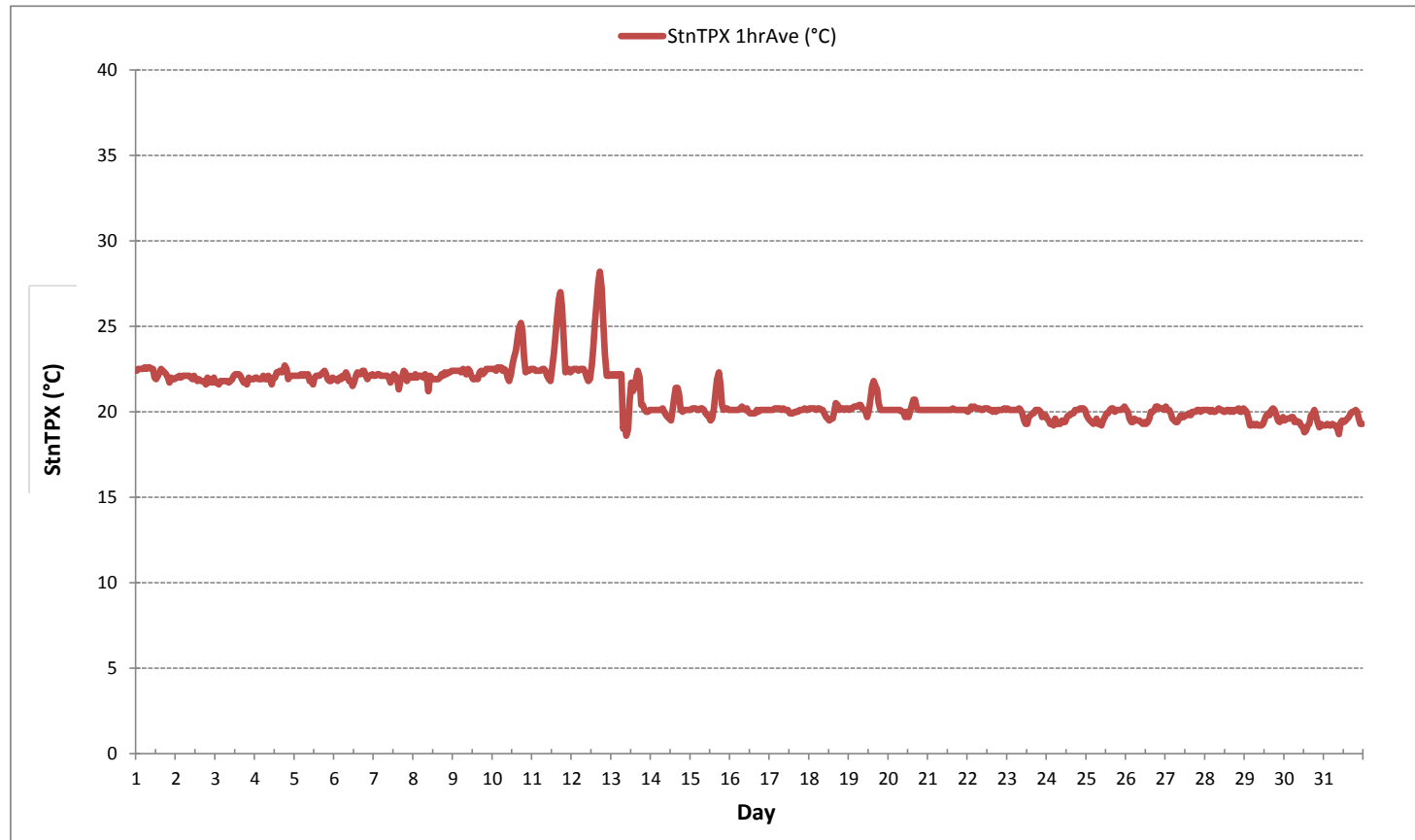
24 HR AVERAGES March 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	18.6	°C	@ HOUR	9	ON DAY	13
MAXIMUM 1-HR AVERAGE:	28.2	°C	@ HOUR	17	ON DAY	12
MAXIMUM 24-HR AVERAGE:	23.5	°C			ON DAY	12
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	1.4				MONTHLY AVERAGE:	20.9 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100A Sulphur Dioxide Analyzer Calibration

Date:	March 13, 2018	Barometer/B.P./units:	Brunton 05535 expires December 15, 2018	27.75	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	21.3	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	9:00	Performed By/Reviewer:	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	13:00	Cal Gas Expiry Date:	December 2, 2019		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		

Analyzer:	ID# or Serial Number:	841	Range ppb:	500
	Last Calibration Date:	February 22, 2018	As Found C.F.:	1.042
	Previous C.F.:	1.000	New C.F.:	1.000

Calibration Standards:	Standard Calibration Points for Ranges	
Low Flow Meter ID/Expiry Date: Defender Low 156151 expires October 2, 2018	Point	ppb
High Flow Meter ID/Expiry Date: Defender High 156312 expires December 13, 2018	High	380
Calibrator ID/Expiry Date: Sabio id# 17200415 expires May 16, 2018	Mid	180
Cal Gas Cylinder I.D. #: LL119329	Low	90
Cal Gas Conc. (ppm): 50.1		

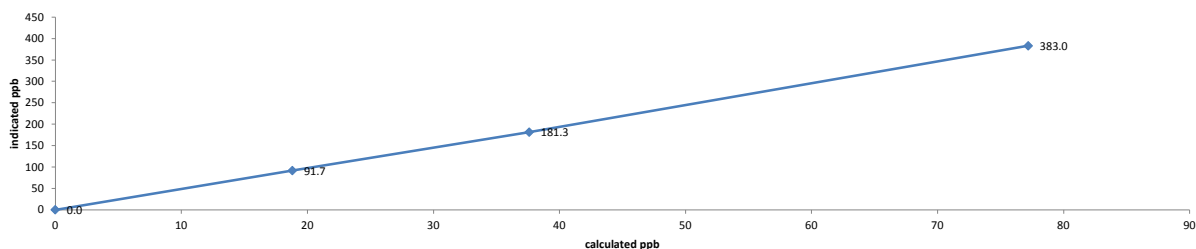
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	5914	0.00	5914	0.0	0.5	n/a
as found high	5869	45.20	5914	382.9	368.0	1.042
adjusted zero	5914	0.00	5914	0.0	0.0	n/a
adjusted high	5869	45.20	5914	382.9	383.0	1.000
mid	5895	21.47	5916	181.8	181.3	1.003
low	5902	10.92	5913	92.5	91.7	1.009
calibrator zero	5914	0.00	5914	0.0	0.2	n/a
Average C.F.=						1.004

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)=	0.09%		± 3% F.S.
% change in C.F. from last cal=	-4.19%		± 10%

API 100A Sulphur Dioxide Analyzer Calibration



As found:		As left:	
Slope:	1.166	Slope:	1.211
Offset:	40.5 MV	Offset:	41.4 MV
Hvps:	763 V	Hvps:	763 V
Dcps:	2560 MV	Dcps:	2550 MV
Rcell Temp:	50.8 °C	Rcell Temp:	50.5 °C
Box Temp:	29.1 °C	Box Temp:	31.5 °C
Pmt Temp:	7.1 °C	Pmt Temp:	7.1 °C
Izs Temp:	45.2 °C	Izs Temp:	45.2 °C
Converter Temp:	n/a	Converter Temp:	n/a
Pres:	24.9 IN-HG-A	Pres:	24.6 IN-HG-A
Samp Fl:	679 CC/M	Samp Fl:	679 CC/M
Pmt:	65.0 MV	Pmt:	65.6 MV
Uv Lamp:	2057 MV	Uv Lamp:	1987 MV
Lamp Ratio:	110.0 %	Lamp Ratio:	105.7 %
Str Lgt:	27.0 PPB	Str Lgt:	25.0 PPB
Drk Pmt:	25.7 MV	Drk Pmt:	24.8 MV
Drk Lmp:	-17.2 MV	Drk Lmp:	-17.3 MV
Expected Value:	307.9	Expected Value:	320.4

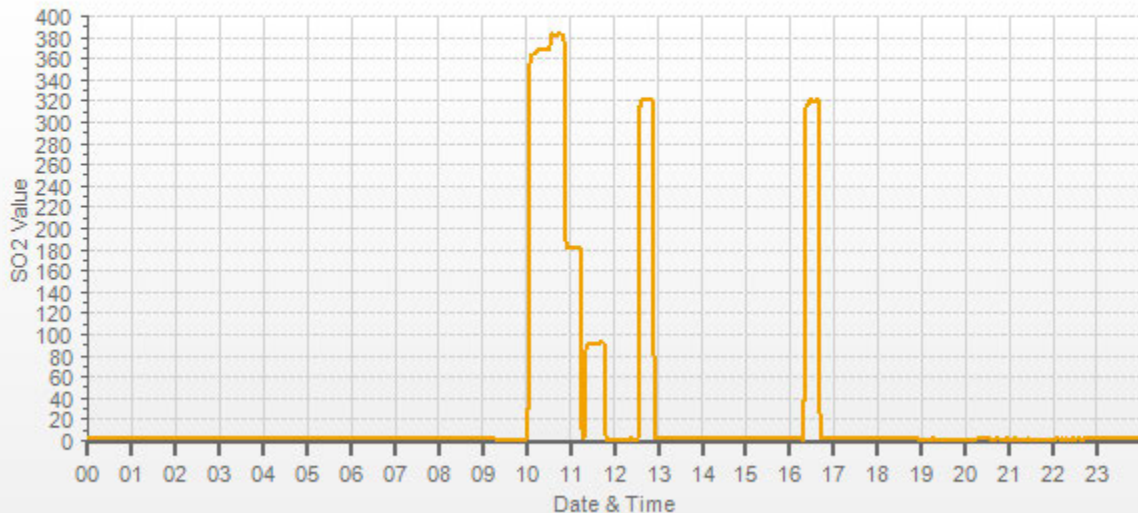
Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

SO2[ppb] Station: PRAMP_RENO Daily: 18/03/13 Type: AVG 1 Min. [1 Min.]

— SO2[ppb]



TOTAL REDUCED SULPHUR



Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	March 13, 2018	Barometer/B.P./units:	Brunton 05535 expires December 15, 2018	27.75	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	21.3	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	9:00	Performed By/Reviewer:	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	13:45	Cal Gas Expiry Date:	August 23, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA-CDN 101#534		

Analyzer:	ID# or Serial Number:	1162460022	Range ppb:	100
	Last Calibration Date:	February 22, 2018	As Found C.F.:	0.987
	Previous C.F.:	1.000	New C.F.:	1.000

Calibration Standards:	Standard Calibration Points for Ranges	SO2 Scrubber Check (10 minutes):	
Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018	Start/End Time 24 hr.:	09:50/10:00
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018	SO2 Analyzer Range:	500
Calibrator ID/Expiry Date:	Sabio id# 17100415 expires May 16, 2018	Target Concentration (ppb):	380
Cal Gas Cylinder I.D. #:	LL119500	As Found Zero:	0.0
Cal Gas Conc. (ppm):	9.8	Analyzer Response: (ppb):	0.0
		Zero Corrected Result (ppb):	0.0

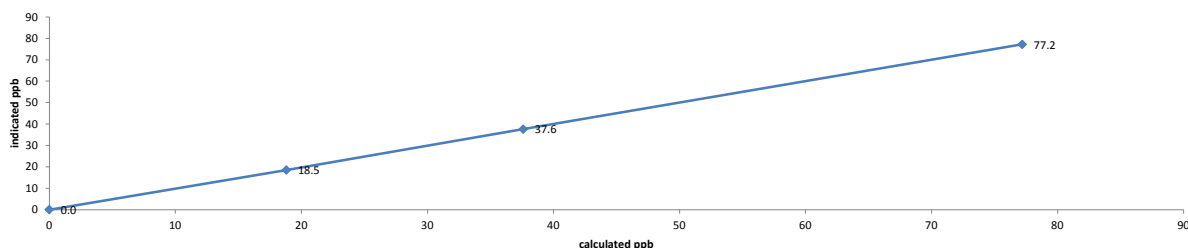
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7553	0.00	7553	0.0	0.0	n/a
as found high	7495	59.52	7555	77.2	78.2	0.987
adjusted zero	7553	0.00	7553	0.0	0.0	n/a
adjusted high	7495	59.52	7555	77.2	77.2	1.000
mid	7521	28.97	7550	37.6	37.6	1.000
low	7530	14.48	7544	18.8	18.5	1.017
calibrator zero	7553	0.00	7553	0.0	0.0	n/a
Average C.F.=						1.006

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)=	0.12%	± 3% F.S.	
% change in C.F. from last cal=	1.27%	± 10%	

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	2.30	Bkg:	2.25
Coef:	0.951	Coef:	0.942
Pmt:	-706.3 V	Pmt:	-706.3 V
Flash:	1014 V	Flash:	1007 V
Internal:	28.4 °C	Internal:	30.3 °C
Chamber:	44.9 °C	Chamber:	45.1 °C
Perm Oven Gas:	35.0 °C	Perm Oven Gas:	35.1 °C
Perm Oven Heater:	34.11 °C	Perm Oven Heater:	34.14 °C
Pressure:	640.1 mmHg	Pressure:	648.9 mmHg
Sample Flow:	0.410 L/Min	Sample Flow:	0.412 L/Min
Lamp Intensity:	84 %	Lamp Intensity:	82 %
Converter:	825 °C	Converter:	825 °C
Converter Set:	825 °C	Converter Set:	825 °C
Averaging Time:	120 Sec	Averaging Time:	120 Sec
Expected Value:	69.2	Expected Value:	69.4

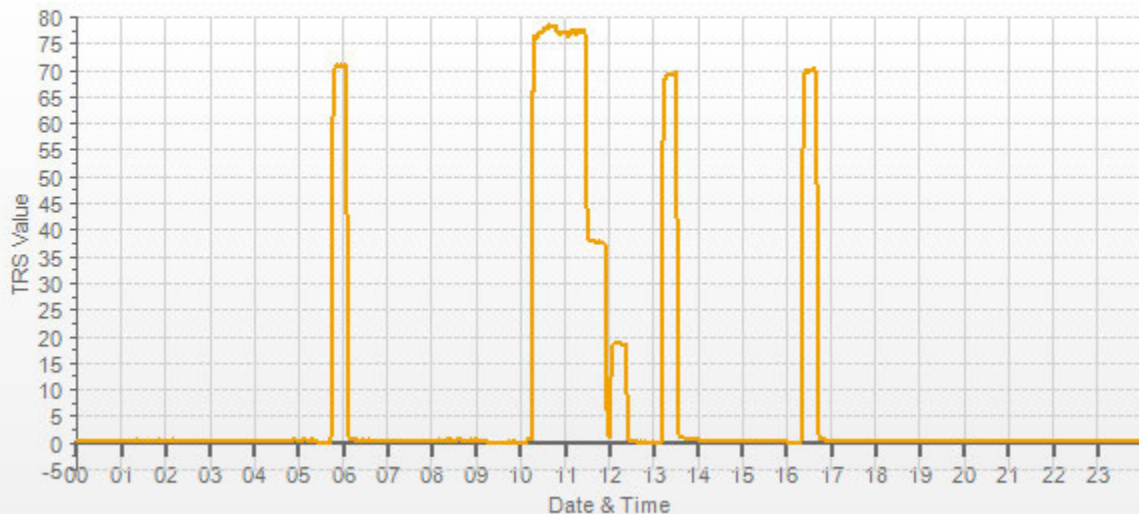
Comments:

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

No zero adjustment was required/made. The "as found" zero value was copied to the adjusted zero value field for linearity calculation purposes.

TRS[ppb] Station: PRAMP_RENO Daily: 18/03/13 Type: AVG 1 Min. [1 Min.]

— TRS[ppb]



TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	March 13, 2018	Barometer/B.P./units:	Brunton 05535 expires December 15, 2018	27.75	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	21.3	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	12:08/16:05	Performed By/Reviewer:	Limin Li	Rob Fisher	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	October 18, 2025		

Analyzer:		Correction Factors:			
ID# or Serial Number:	1314057759	Previous C.F.:	As Found C.F.:	New C.F.:	
Measured Flow:	1270 SCCM	CH ₄ =	1.003	1.007	0.997
Last Calibration Date:	February 22, 2018	NMHC =	1.004	1.007	0.996
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC =	1.003	1.007	0.996

Calibration Standards:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018	Point	CH ₄	NMHC	THC
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018	High	13.00	13.00	26.00
Calibrator ID/Expiry Date:	Sabio id# 17200415 expires May 16, 2018	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL168404	Low	3.00	3.00	6.00
CH ₄ Cylinder Conc. =	597.0				
	206.0				
	=C ₃ H ₈ Cylinder Conc.				
CH ₄ expressed as C ₃ H ₈ =	566.5				
	1163.5				
	=total CH ₄ equivalent				

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015												
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
as found zero	2464	0.00	2464	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2413	57.24	2470	13.83	13.13	26.96	13.74	13.04	26.78	1.007	1.007	1.007
adjusted zero	2464	0.00	2464	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2413	57.24	2470	13.83	13.13	26.96	13.88	13.18	27.06	0.997	0.996	0.996
mid	2437	29.95	2467	7.25	6.88	14.13	7.25	6.88	14.13	1.000	1.000	1.000
low	2449	15.05	2464	3.65	3.46	7.11	3.64	3.46	7.10	1.002	1.000	1.001
calibrator zero	2464	0.00	2464	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =									0.999	0.999	0.999	

Linear Regression/Calibration Results:				LIMITS		
Correlation Coefficient =	CH ₄	NMHC	THC	> or = 0.995		
Slope =	1.000	1.000	1.000	0.95-1.05		
b (Intercept as % of full scale) =	1.003	1.004	1.004	± 3% F.S.		
% change in C.F. from last cal =	-0.06%	-0.05%	-0.05%	± 10%		
	-0.39%	-0.27%	-0.38%			

As Left Instrument Diagnostics:											
Interface Board Voltages:	Bias Supply:	-285.9 V	Calibration History cnt'd:	NM Peak Area:	88160						
Temperatures:	Detector Oven:	175.1 °C	Crucial Settings:	Methane Start:	8						
	Filter:	175.0 °C		Methane End:	16						
	Column Oven:	75.1 °C		Backflush:	18						
	Internal:	32.8 °C		NMNV Start:	26						
Cylinder Pressures/reg.:	Carrier:	700	50	NMHC End:	56						
	Fuel:	1250	50	Date:	13MAR18						
	Span Gas:	1450	18	Time:	11:54						
	Zero Air Generator:	48 psi		CH ₄ PK HT:	3021						
Internal Pressures:	Carrier:	31.3 psi		CH ₄ RT:	11.8						
	Fuel:	41.6 psi		CH ₄ Baseline:	2106						
	Air:	25.9 psi		CH ₄ LOD:	61						
FID Status:	Status:	LIT		CH ₄ SD:	20						
	Counts:	25087		CH ₄ CONC:	2.32						
	Flame:	405.0 °C		NM PK HT:	0						
	Det Base:	175.0 °C		NM Peak Area:	0						
Flame and Power Stats:	Last Power On:	20DEC2017 14:06		NM CONC:	0.00						
	Flameouts:	2		NM Base Start:	2067						
	Det Oven at Start:	106.8		NM Base End:	2066						
	Col Oven at Start:	59.7		NM LOD:	10						
Calibration History:	Time:	22FEB2018 14:35		NM Start IDX:	17						
	Type:	SPAN		NM End IDX:	60						
	Status:	GOOD		NM Max Slope:	5.6e-01						
	Check/Adjust:	ADJUST		NM Min Slope:	-9.3e-01						
	CH ₄ Span Conc:	14.79		NM PT Count:	0						
	CH ₄ SP Ratio:	0.00077		Previous CH ₄ :	10.06						
	CH ₄ RT:	11.6		Previous NMHC:	11.2						
	CH ₄ PK IDX:	18		Previous THC:	21.3						
	CH ₄ PK HT:	19219		New CH ₄ :	10.06						
	NM Span Conc:	14.04		New NMHC:	11.20						
	NM SP Ratio:	0.000159		New THC:	21.30						

Comments:
The analyzer sample inlet filter was changed.

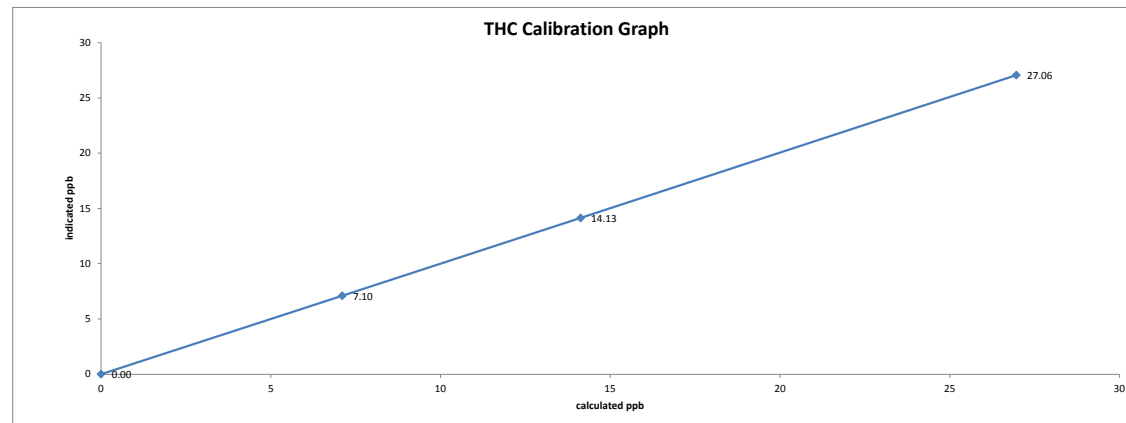
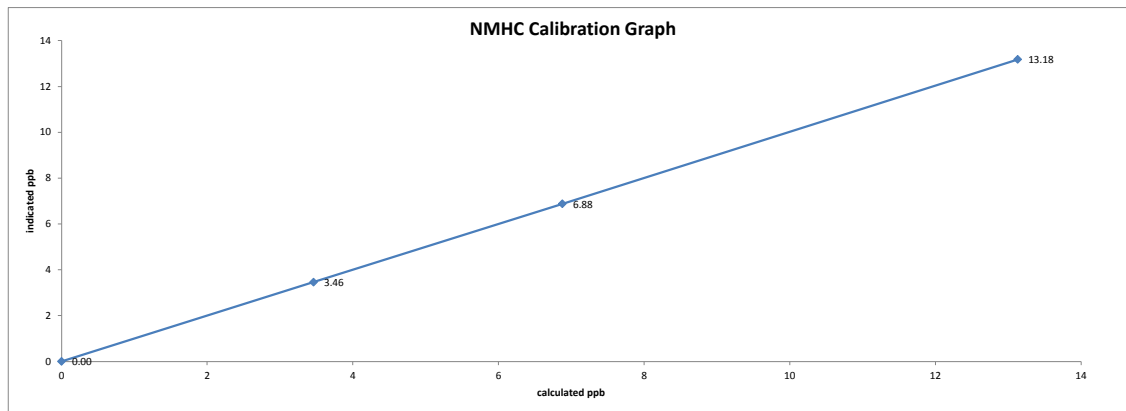
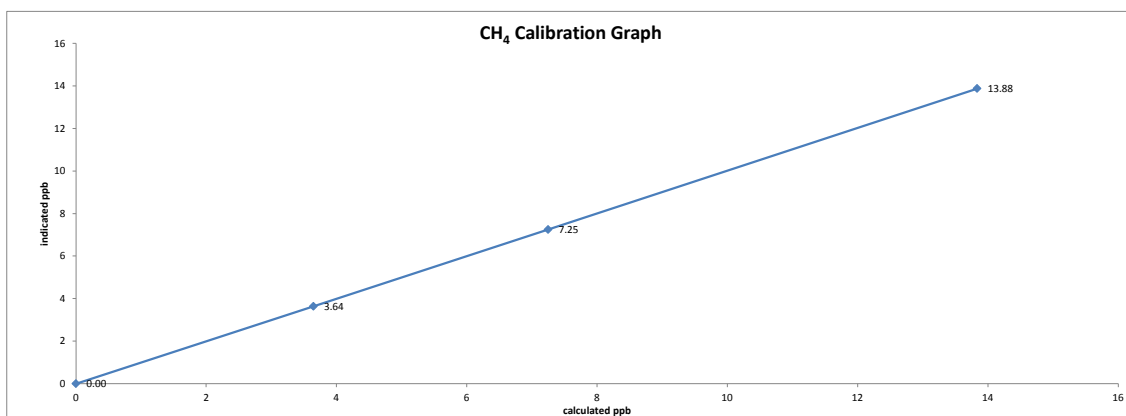
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

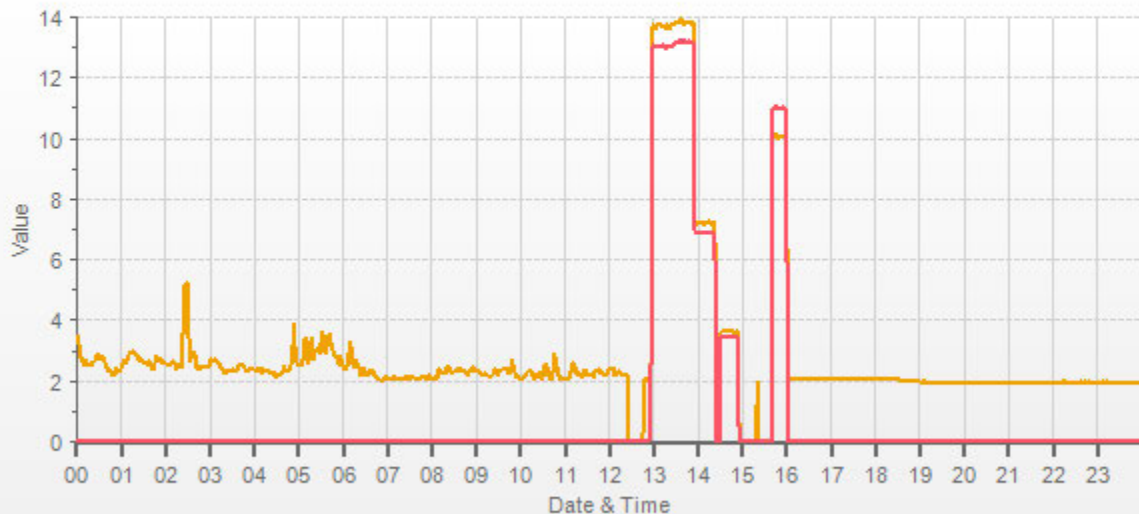
Date: March 13, 2018
Company/Airshed: PRAMP
Location/Station Name: RENO

Start/End Time 24 hr. (mst): 12:08/16:05
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution



Station: PRAMP_RENO Daily: 18/03/13 Type: AVG 1 Min. [1 Min.]

CH4[ppm] NMHC[ppm]



WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP
Audit Location: Reno
Audit Date: April 6, 2017

Performed By: Limin Li
Reviewed By: Trina Whitsitt
Start /EndTime (mst): 15:20/16:50

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1 V
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200 km/h
Serial #:	149769	Direction Voltage Output Range:	0-1 V
Previous Cal/Audit Date:	February 16, 2017	Direction Unit Output Range:	0-360 degrees

Wind Calibrator Information

Calibrator Make/ Model: RM Young 18802
Maxxam Unit ID #: 13-3357
Serial #: CA 0309
Certification Date: October 6, 2016

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	18.4	0.999
2000	36.9	36.8	36.8	1.003
3000	55.3	55.1	55.1	1.003
4000	73.7	73.5	73.5	1.002
5000	92.2	92.0	92.0	1.003
6000	110.6	110.4	110.4	1.002
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.9	165.9	1.000
10000	184.3	184.4	184.4	0.999
The audit meets AMD requirements.			Average Correction Factor=	1.001

Wind Direction Audit Data ****+/- 5° 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	1.7	0.9
30	330	30	328	0.4	2.1	1.3
60	300	61	299	-0.8	1.2	1.0
90	270	91	269	-1.1	0.9	1.0
120	240	121	240	-1.3	0.2	0.7
150	210	151	211	-1.2	-0.7	0.9
180	180	181	181	-1.3	-1.2	1.3
210	150	211	151	-0.7	-1.4	1.1
240	120	240	121	0.0	-1.4	0.7
270	90	270	91	0.5	-1.1	0.8
300	60	299	61	1.3	-0.9	1.1
330	30	328	30	2.2	0.3	1.3
355	0	353	0	1.7	0.2	0.9
The audit meets AMD requirements.			Average Absolute Degrees Difference=			1.0

Comments: Wind speed gain adjusted before calibration.

CALIBRATORS

Company Maxxam		Operator: Micheal Espiritu	
Calibrator:		Flow Measurement Device:	
Make/Model	Sabio 2010	Make/Model	Mesa Defender 530
Serial Number	17200415	Serial Number	L-152019 H-148944
Last Verification Date	May 2016	Temperature (°C)	25.0 C
NO Cylinder S/N	EY0000597	Barometric Pressure	697 mmhg
NO [PPM]	49.0	NOx [PPM]	49.0
Expiry Date	December 2019		

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5028	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4930	78.7	0.783	0.783	0.809	-0.012	0.797	3%	2%
4936	38.6	0.383	0.383	0.396	-0.006	0.390	3%	2%
4935	19.4	0.193	0.193	0.199	-0.003	0.196	3%	2%
Absolute Average Percent Difference							3%	2%

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

NO	LIMITS	NOx
Correlation= 1.0000	≥ 0.990	Correlation= 1.0000
m (Slope)= 1.0334	0.90-1.10	m (Slope)= 1.0181
b (Intercept % of FS)= -0.0105	± 3% F.S.	b (Intercept % of FS)= -0.0148

Flow	O ₂ Conc (LC)	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4930	0.000	0.000	0.806	-0.013	0.795	NO ₂	% Diff. Limit
4930	1.425	0.523	0.283	0.511	0.794	0%	± 10%
4930	0.825	0.278	0.528	0.266	0.795	0%	± 10%
4930	0.386	0.095	0.711	0.085	0.796	3%	± 10%
Absolute Average Percent Difference						1%	± 10%

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

NO₂	LIMITS
Correlation= 1.0000	≥ 0.995
m (Slope)= 0.9998	0.90-1.10
b (Intercept % of FS)= -1.1702	± 3% F.S.

AENV Standards		NO_x Analyzer	
Audit Calibrator			
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	CAL018101	Last Calibration Date	May 16, 2017
Cylinder Conc. (ppm)	48.79	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	March 2019

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature: 

Date: May 16, 2017
Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Micheal Espiritu</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>Mesa Defender 530</u>
Serial Number	<u>17100415</u>	Serial Number	<u>L-152019 H-148944</u>
Last Verification Date	<u>May 2016</u>	Temperature (°C)	<u>25.0 C</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>697 mmhg</u>
NO [PPM]	<u>49.0</u>	NOx [PPM]	<u>49.0</u>
Expiry Date	<u>December 2019</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
4996	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5029	80.3	0.784	0.783	0.808	-0.013	0.794	3%	1%
5054	38.8	0.376	0.376	0.392	-0.006	0.386	4%	3%
5051	19.5	0.189	0.189	0.196	-0.003	0.193	4%	2%
Absolute Average Percent Difference							4%	2%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO		LIMITS		NOx			
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000		
m (Slope)=	1.0311	0.90-1.10		m (Slope)=	1.0140		
b (Intercept % of FS)=	0.1350	± 3% F.S.		b (Intercept % of FS)=	0.1531		

Flow	O ₂ Conc (LC)	NO Decrease	NO	NO ₂	NOx	% Diff. Vs Audit gas	
5029	0.000	0.000	0.803	-0.013	0.790	NO ₂	% Diff. Limit
5029	1.508	0.568	0.235	0.552	0.787	-1%	± 10%
5029	0.882	0.312	0.491	0.298	0.789	0%	± 10%
5029	0.390	0.108	0.695	0.095	0.789	0%	± 10%
Absolute Average Percent Difference						0%	± 10%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO₂		LIMITS					
Correlation=	1.0000	≥ 0.995					
m (Slope)=	0.9945	0.90-1.10					
b (Intercept % of FS)=	-1.2646	± 3% F.S.					

AENV Standards		NOx Analyzer	
Audit Calibrator			
Make/Model	<u>Teco 146i</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 1809</u>	Serial/AMU Number	<u>AMU 1868</u>
SRM Gas Cylinder No.	<u>CAL018101</u>	Last Calibration Date	<u>May 16, 2017</u>
Cylinder Conc. (ppm)	<u>48.79</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>March 2019</u>

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature: *[Signature]*

Date: May 16, 2017
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-111CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: LL119329 Concentration PPM: 50.1 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: Thermo146i
Serial Number: 1809
Last Verification Date: February 2, 2016
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625

Flow Measurement Device:

Make/Model: Bios DC-2
Serial Number: Bios D
Temp.°C: 24.5
B.P. 702mmHg

Reference Analyzer:

Make/Model: Thermo 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
Last Calibration: Date: 1-Feb-16 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
4960	0.0	0.000			
4959	79.09	0.791	0.01595	62.701	49.6
4950	39.44	0.394	0.00797	125.507	49.4
4942	19.44	0.194	0.00393	254.218	49.3
Average Cylinder Concentration:					49.5

Previous Stated Concentration PPM: 50.1

Percent variance from Stated: 1.3

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: SO2/NO blend 50.3ppm NO
<=5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: February 2, 2016
Location: McIntyre Center Edmonton



Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Tel:(323)585-2154 Fax:(714)542-6689
PGVP ID: F22017

DocNumber: 000113684

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

PRAXAIR PKG EDMONTON PLT 80206
9501 34TH ST
EDMONTON AB T6B 2X6

Praxair Order Number: 41300919
Customer PO Number: 582-112
Customer Reference Number:

Fill Date: 8/11/2017
Part Number: NI HS10ME-AO
Lot Number: 70086722303
Cylinder Style and Outlet: AO CGA 330
Cylinder Pressure and Volume: 2200 psig 84 cu. ft.

Certified Concentration:

Expiration Date:	08/23/2020	NIST Traceable
Cylinder Number:	LL119500	Expanded Uncertainty:
9.8 ppm	HYDROGEN SULFIDE	± 1.3 %
Balance	NITROGEN	

Certification Information: Certification Date : 8/23/2017 Term : 36 Months Expiration Date : 08/23/2020

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.
Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component:

HYDROGEN SULFIDE

Requested Concentration: 10 ppm
Certified Concentration: 9.8 ppm
Instrument Used: INTERSCAN RM-17 S/N 715726
Analytical Method: ELECTROLYTIC CELL
Last Multipoint Calibration: 08/21/2017

Reference Standard Type: GMIS
Ref. Std. Cylinder #: ND04683
Ref. Std. Conc: 20.19 PPM
Ref. Std. traceable to SRM #: 2730
SRM Sample #: 66-E-70
SRM Cylinder #: CAL015447

First Analysis Data:		Date: 08/15/2017	
Z:	0	R:	44.43
R:	44.45	Z:	0
Z:	0	C:	21.64
UOM:	ppm	R:	44.45
		Conc:	9.83
		Conc:	9.83
		Conc:	9.83
		Mean Test Assay:	9.83 ppm

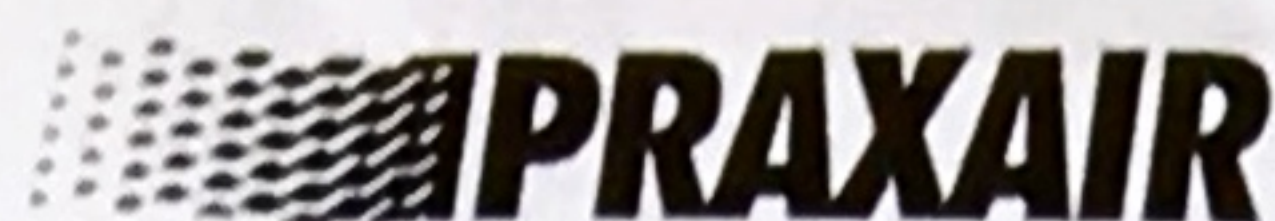
Second Analysis Data:		Date: 08/23/2017	
Z:	0	R:	44.02
R:	44.01	Z:	0
Z:	0	C:	21.32
UOM:	ppm	R:	44.01
		Conc:	9.77
		Conc:	9.78
		Conc:	9.78
		Mean Test Assay:	9.78 ppm

Analyzed by:

Pupongmontre Pete

Certified by:

Ying Yu



Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Tel: (323) 585-2154 Fax: (714) 542-6689
PGVPID: F22017

DocNumber: 000116092

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

MAXXAM ANALYTICS INC
500 1919 MINNESOTA CRT
MISSISSAUGA ON L5N 0C

Praxair Order Number: 44723832
Customer P. O. Number: PO0000001677
Customer Reference Number:

Fill Date: 10/13/2017
Part Number: NI ME600P2E-AQ
Lot Number: 70086728604
Cylinder Style & Outlet: AQ CGA 350
Cylinder Pressure & Volume: 2200 psig 82 cu. ft.

Certified Concentration:

Expiration Date:	10/18/2025	NIST Traceable
Cylinder Number:	LL168404	Analytical Uncertainty:
206 ppm	PROPANE	± 0.6 %
597 ppm	METHANE	± 0.3 %
Balance	NITROGEN	

Certification Information: Certification Date: 10/18/2017 Term: 96 Months Expiration Date: 10/18/2025

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: PROPANE

Requested Concentration: 200 ppm
Certified Concentration: 206 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: Fourier Transform Infrared
Last Multipoint Calibration: 10/15/2017

First Analysis Data:	Date:	10/17/2017
Z: 0 R: 246.85 C: 198.95 Conc: 205.96		
R: 246.89 Z: 0 C: 198.95 Conc: 205.96		
Z: 0 C: 198.76 R: 246.96 Conc: 205.77		
UOM: ppm	Mean Test Assay:	205.9 ppm

Reference Standard Type: GMIS
Ref. Std. Cylinder #: CC113142
Ref. Std. Conc: 255.6 ppm
Ref. Std. Traceable to SRM #: 2644a
SRM Sample #: 101-C-45
SRM Cylinder #: XF003829B

Second Analysis Data:	Date:	
Z: 0 R: 0 C: 0 Conc: 0		
R: 0 Z: 0 C: 0 Conc: 0		
Z: 0 C: 0 R: 0 Conc: 0		
UOM: ppm	Mean Test Assay:	0 ppm

2. Component: METHANE

Requested Concentration: 600 ppm
Certified Concentration: 597 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: Fourier Transform Infrared
Last Multipoint Calibration: 9/27/2017

First Analysis Data:	Date:	10/17/2017
Z: 0 R: 934.60 C: 561.46 Conc: 595.43		
R: 934.66 Z: 0 C: 564.32 Conc: 598.46		
Z: 0 C: 562.42 R: 931.33 Conc: 596.44		
UOM: ppm	Mean Test Assay:	596.78 ppm

Reference Standard Type: GMIS
Ref. Std. Cylinder #: DT0010335
Ref. Std. Conc: 990 ppm
Ref. Std. Traceable to SRM #: RGM#DT00
SRM Sample #: N/A
SRM Cylinder #: DT0007710

Second Analysis Data:	Date:	
Z: 0 R: 0 C: 0 Conc: 0		
R: 0 Z: 0 C: 0 Conc: 0		
Z: 0 C: 0 R: 0 Conc: 0		
UOM: ppm	Mean Test Assay:	0 ppm

Analyzed by:

Jenna Lockman

Certified by:

Jose Vasquez

APPENDIX III
MAXIMUM INSTANTANEOUS DATA



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 2018

SULPHUR DIOXIDE Instantaneous Maximum (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	1	1	1	1	1	S	2	2	3	2	2	2	2	2	1	1	2	1	1	1	1	2	2	2	1	3	2	24
2	2	2	3	3	S	3	2	2	2	3	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	24
3	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
4	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	1	3	1	24
5	1	S	1	1	1	1	2	2	2	1	2	2	2	3	3	4	3	2	2	2	2	2	2	2	1	4	2	24
6	S	1	1	1	1	1	1	1	2	2	1	2	1	2	1	2	2	1	2	2	1	1	1	S	1	2	1	24
7	1	1	1	1	1	1	2	1	2	1	2	2	2	3	3	3	3	3	2	2	4	4	S	2	1	4	2	24
8	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	3	3	3	3	3	3	S	2	3	2	3	2	24
9	3	3	3	2	2	2	2	2	3	3	4	3	3	3	2	2	2	2	2	2	S	2	2	3	2	4	2	24
10	3	5	5	3	3	3	2	3	3	2	2	2	2	1	1	1	1	1	1	S	1	2	2	1	1	5	2	24
11	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	S	3	3	2	2	1	1	3	1	24
12	2	3	2	1	1	2	3	2	2	3	2	3	3	3	2	3	3	S	3	3	3	1	2	2	1	3	2	24
13	2	2	2	2	2	2	2	2	2	C	C	C	C	2	1	2	S	2	1	1	1	1	1	1	1	2	2	24
14	1	1	1	2	1	1	2	2	2	2	3	3	2	3	2	S	2	2	2	1	1	1	1	1	1	3	2	24
15	1	1	1	1	1	1	2	3	3	3	3	3	4	4	S	4	4	3	3	2	2	3	3	2	1	4	2	24
16	2	2	2	1	1	2	2	2	2	2	2	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1	24
17	1	2	1	2	1	1	1	1	1	1	1	1	S	3	3	2	2	2	2	1	1	1	0	1	0	3	1	24
18	1	1	1	1	1	1	1	1	1	2	2	S	2	3	3	2	2	2	3	2	2	2	2	1	1	3	2	24
19	1	0	1	1	1	2	2	2	2	1	S	2	1	1	1	1	2	1	1	1	1	1	1	1	0	2	1	24
20	1	1	1	1	1	1	2	2	1	S	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	24
21	1	1	1	1	1	1	1	2	S	2	2	1	1	1	1	1	1	2	2	2	1	2	2	2	1	2	1	24
22	2	2	2	1	2	1	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
23	1	1	1	1	1	1	S	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
24	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
25	1	1	1	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
26	1	1	1	S	1	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
27	1	1	S	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	0	1	1	1	0	2	1	24
28	1	S	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1	24
29	S	0	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	S	0	1	0	24
30	1	1	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	24
31	0	1	1	1	1	1	2	2	2	2	5	4	4	3	1	1	1	1	1	1	2	S	3	4	0	5	2	24
HOURLY MAX	3	5	5	3	3	3	3	3	3	3	5	4	4	4	3	4	4	3	3	3	4	4	3	4				
HOURLY AVG	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1				

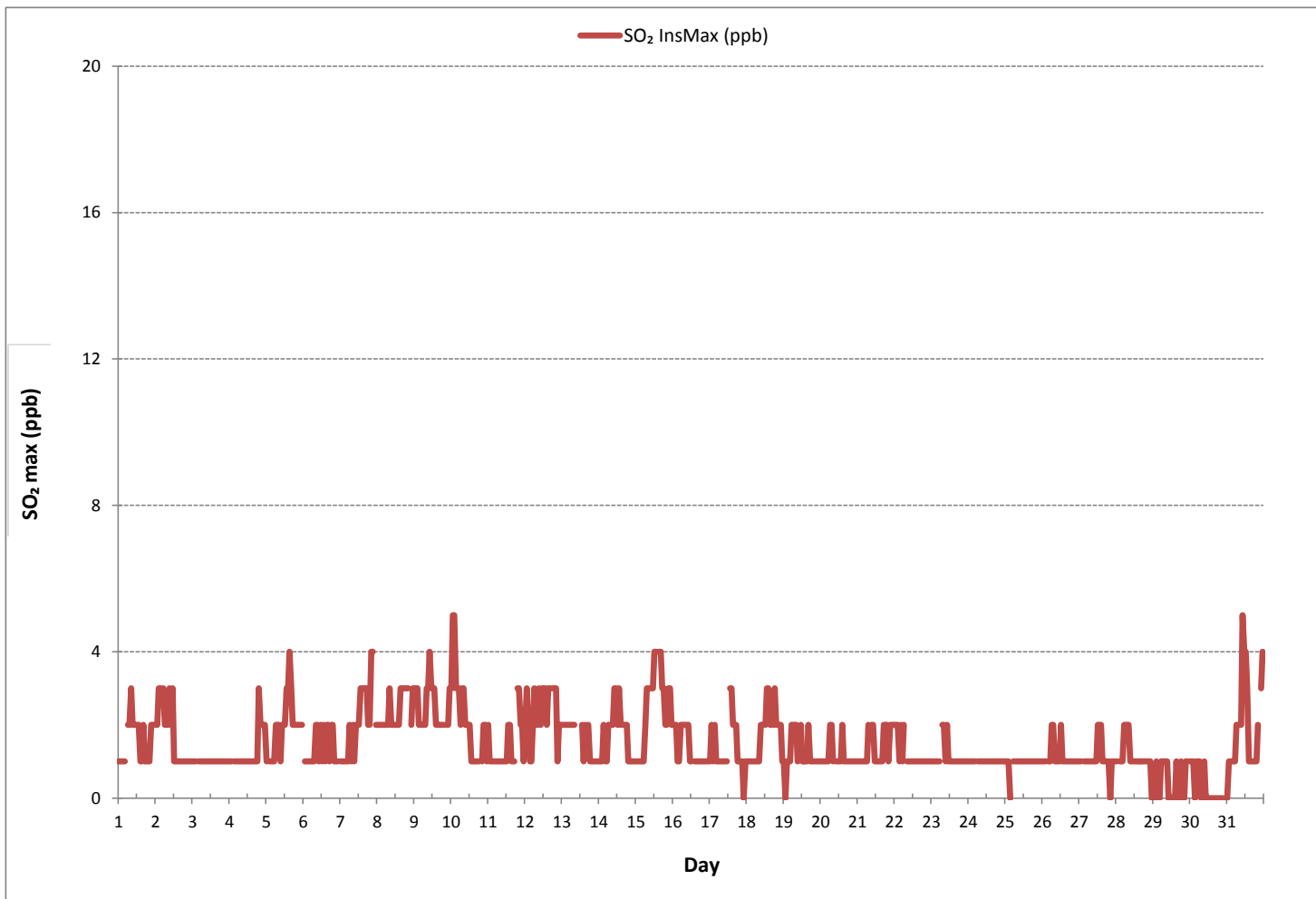
STATUS FLAG CODES

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:	673
MAXIMUM INSTANTANEOUS VALUE:	5 ppb @ HOUR 1 ON DAY 10
IZS CALIBRATION TIME:	33 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	744 hrs
STANDARD DEVIATION:	1

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



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	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	0.40	0.43	0.43	0.45	0.47	\$	0.60	0.50	0.50	0.50	0.45	0.50	0.47	0.43	0.43	0.50	0.43	0.40	0.43	0.45	0.47	0.47	0.45	0.47	0.40	0.60	0.46	24	
2	0.47	0.47	0.47	0.47	\$	0.58	0.52	0.50	0.47	0.47	0.47	0.45	0.43	0.45	0.44	0.45	0.43	0.45	0.45	0.47	0.43	0.47	0.47	0.50	0.43	0.58	0.47	24	
3	0.45	0.43	0.45	\$	0.50	0.47	0.45	0.45	0.50	0.47	0.43	0.43	0.44	0.45	0.47	0.45	0.45	0.47	0.47	0.47	0.45	0.45	0.45	0.47	0.43	0.50	0.46	24	
4	0.47	0.49	\$	0.50	0.47	0.50	0.45	0.44	0.50	0.47	0.43	0.44	0.52	0.52	0.50	0.47	0.47	0.47	0.63	1.28	0.97	0.73	0.78	1.02	0.43	1.28	0.59	24	
5	0.58	\$	0.65	0.65	0.55	0.65	0.84	0.81	0.60	0.50	0.55	0.68	0.52	0.52	0.55	0.89	0.86	0.52	0.55	0.52	0.55	0.55	0.55	0.55	0.50	0.89	0.62	24	
6	\$	0.71	0.58	0.50	0.47	0.43	0.52	0.45	1.02	0.97	0.52	0.76	0.58	1.18	0.45	1.44	0.47	0.44	0.78	0.76	0.68	0.57	0.58	\$	0.43	1.44	0.68	24	
7	0.63	0.60	0.52	0.47	0.50	0.47	0.47	0.52	0.50	0.47	0.50	0.52	0.50	0.47	0.47	0.49	0.50	0.50	0.89	0.78	1.70	1.67	\$	0.73	0.47	1.70	0.65	24	
8	0.73	0.65	0.71	0.71	0.60	0.52	0.55	0.58	0.47	0.47	0.47	0.43	0.44	0.45	0.43	0.43	0.44	0.45	0.47	0.50	0.44	\$	0.52	0.52	0.43	0.73	0.52	24	
9	0.50	0.63	0.60	0.58	0.52	0.60	0.45	0.50	0.50	0.47	0.62	0.60	0.63	0.58	0.50	0.47	0.47	0.44	0.45	0.40	\$	0.71	0.65	0.47	0.40	0.71	0.54	24	
10	0.47	0.71	0.91	0.73	0.60	0.50	0.55	0.76	0.63	0.47	0.47	0.45	0.45	0.42	0.47	0.44	0.42	0.47	0.42	\$	0.65	0.91	1.02	0.58	0.42	1.02	0.59	24	
11	0.78	0.60	0.52	0.52	0.52	0.49	0.52	\$1	0.60	0.55	0.50	0.50	0.49	0.47	0.52	0.50	0.50	0.55	\$	1.08	1.57	0.94	1.07	0.68	0.47	1.57	0.66	23	
12	0.84	1.85	0.81	0.52	0.58	0.50	0.52	\$1	\$1	0.52	0.52	0.45	0.43	0.47	0.47	0.52	0.58	\$	1.00	0.95	1.13	0.55	0.50	0.47	0.43	1.85	0.68	22	
13	0.45	0.52	0.50	0.52	0.84	\$1	\$1	0.48	0.55	C	C	C	C	C	C	0.65	0.45	\$	0.48	0.42	0.42	0.37	0.37	0.37	0.40	0.37	0.84	0.49	22
14	0.35	0.37	0.40	0.40	0.37	0.40	0.40	0.45	0.42	0.43	0.45	0.43	0.42	0.43	0.45	\$	0.48	0.42	0.45	0.40	0.37	0.35	0.40	0.40	0.35	0.48	0.41	24	
15	0.45	0.42	0.48	0.42	0.55	0.48	0.60	0.58	0.63	0.53	0.50	0.48	0.53	0.53	\$	0.53	0.48	0.52	0.48	0.48	0.55	0.79	1.08	0.53	0.42	1.08	0.55	24	
16	0.53	0.50	0.50	0.55	0.48	0.43	0.42	0.42	0.42	0.45	0.42	0.40	0.45	\$	0.45	0.42	0.45	0.37	0.37	0.40	0.45	0.45	0.42	0.45	0.37	0.55	0.44	24	
17	0.68	1.05	0.58	1.15	0.68	0.50	0.40	0.42	0.45	0.40	0.40	0.45	\$	0.50	0.48	0.45	0.48	0.40	0.42	0.42	0.40	0.42	0.42	0.40	0.40	1.15	0.52	24	
18	0.42	0.37	0.42	0.37	0.37	0.40	0.40	0.40	0.37	0.37	0.42	\$	0.43	0.45	0.40	0.42	0.37	0.40	0.40	0.42	0.71	0.60	0.71	0.50	0.37	0.71	0.44	24	
19	0.40	0.42	0.63	0.48	0.60	0.65	0.73	0.50	0.53	0.53	\$	0.48	0.48	0.43	0.40	0.40	0.37	0.37	0.45	0.40	0.42	0.42	0.40	0.40	0.37	0.73	0.47	24	
20	0.40	0.48	0.43	0.48	0.50	0.40	0.42	0.40	0.42	\$	0.42	0.40	0.42	0.35	0.37	0.35	0.35	0.35	0.35	0.40	0.37	0.37	0.40	0.40	0.35	0.50	0.40	24	
21	0.40	0.40	0.35	0.42	0.35	0.37	0.40	0.48	\$	0.48	0.42	0.42	0.42	0.43	0.42	0.42	0.37	0.40	0.42	0.40	0.37	0.37	0.37	0.37	0.35	0.48	0.40	24	
22	0.40	0.40	0.40	0.40	0.37	0.40	0.40	\$	0.40	0.40	0.37	0.35	0.37	0.37	0.35	0.37	0.35	0.37	0.37	0.37	0.37	0.40	0.37	0.37	0.35	0.40	0.38	24	
23	0.37	0.37	0.35	0.35	0.35	0.37	\$	0.42	0.43	0.40	0.40	0.42	0.42	0.37	0.37	0.40	0.40	0.37	0.37	0.40	0.40	0.42	0.37	0.40	0.35	0.43	0.39	24	
24	0.40	0.40	0.40	0.37	0.42	\$	0.45	0.40	0.40	0.37	0.40	0.42	0.40	0.40	0.37	0.40	0.42	0.37	0.40	0.40	0.40	0.40	0.37	0.37	0.37	0.45	0.40	24	
25	0.40	0.53	0.45	0.45	\$	0.53	0.40	0.42	0.42	0.40	0.45	0.45	0.42	0.42	0.40	0.42	0.40	0.37	0.40	0.40	0.42	0.42	0.42	0.42	0.37	0.53	0.43	24	
26	0.43	0.43	0.45	\$	0.45	0.40	0.45	0.42	0.40	0.40	0.40	0.40	0.42	0.37	0.48	0.42	0.42	0.45	0.42	0.48	0.42	0.40	0.37	0.50	0.37	0.50	0.43	24	
27	0.53	0.40	\$	0.50	0.48	0.45	0.45	0.48	0.42	0.40	0.42	0.45	0.42	0.43	0.42	0.48	0.42	0.48	0.45	0.48	0.45	0.42	0.48	0.50	0.40	0.53	0.45	24	
28	0.53	\$	0.60	0.50	0.55	0.53	0.58	0.58	0.50	0.50	0.43	0.42	0.42	0.40	0.45	0.42	0.42	0.40	0.42	0.40	0.48	0.50	0.42	0.42	0.40	0.60	0.47	24	
29	\$	0.48	0.45	0.45	0.48	0.42	0.43	0.43	0.45	0.48	0.43	0.48	0.40	0.43	0.42	0.45	0.45	0.45	0.42	0.42	0.40	0.42	0.42	\$	0.40	0.48	0.44	24	
30	0.53	0.50	0.45	0.53	0.45	0.48	0.48	0.45	0.42	0.48	0.50	0.42	0.48	0.42	0.43	0.45	0.45	0.45	0.45	0.48	0.48	0.50	\$	0.56	0.42	0.56	0.47	24	
31	0.58	0.97	0.71	0.55	0.58	0.53	0.89	0.84	0.58	0.51	0.53	0.55	0.48	0.45	0.48	0.45	0.42	0.45	0.45	0.53	0.84	\$	1.39	1.81	0.42	1.81	0.68	24	
HOURLY MAX	0.84	1.85	0.91	1.15	0.84	0.65	0.89	0.84	1.02	0.97	0.62	0.76	0.63	1.18	0.65	1.44	0.86	0.55	1.00	1.28	1.70	1.67	1.39	1.81					
HOURLY AVG	0.50	0.57	0.52	0.52	0.51	0.48	0.51	0.50	0.50	0.48	0.46	0.47	0.46	0.47	0.45	0.49	0.45	0.43	0.48	0.53	0.59	0.55	0.56	0.54					

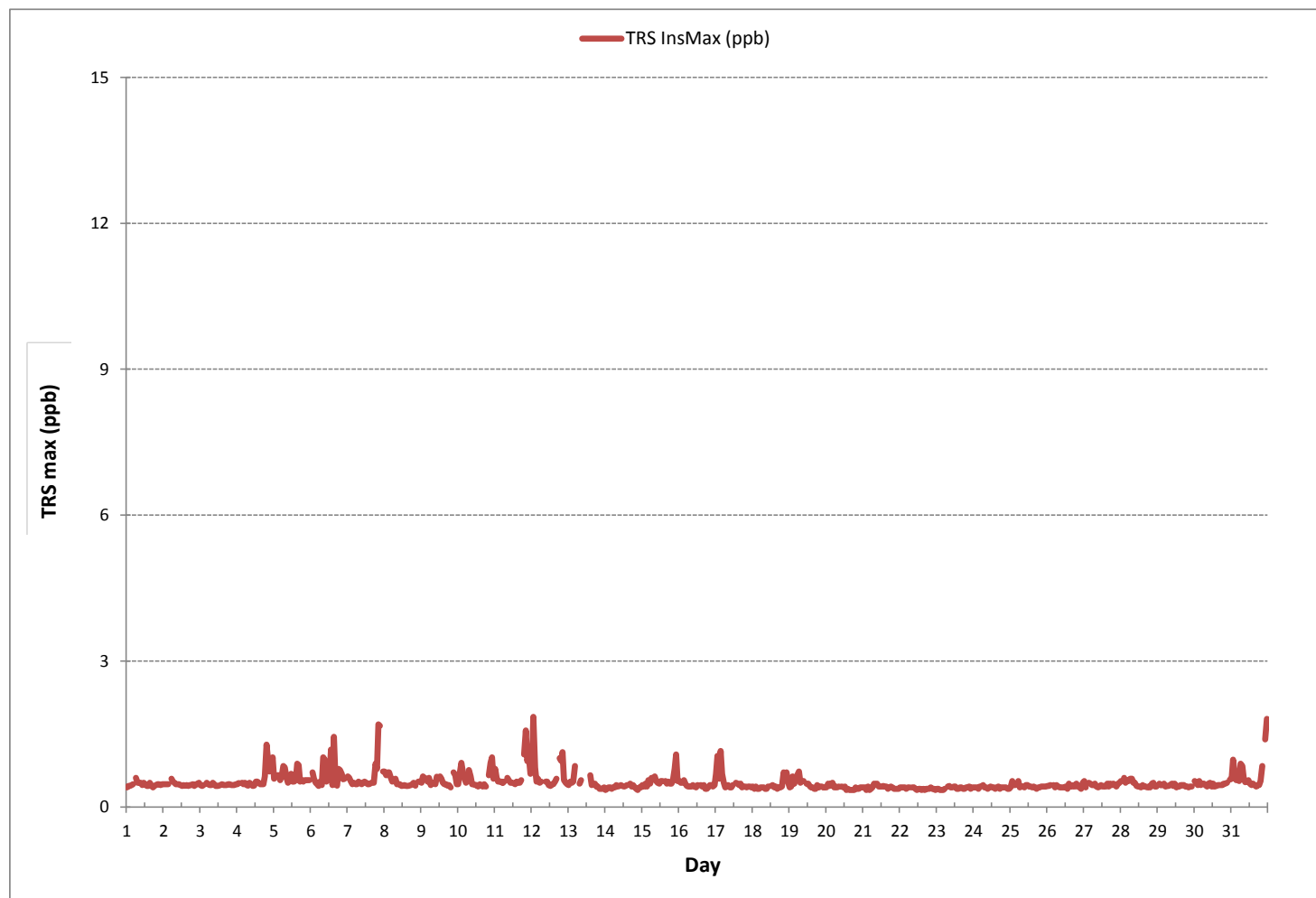
STATUS FLAG CODES

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:	701
MAXIMUM INSTANTANEOUS VALUE:	1.85 ppb @ HOUR 1 ON DAY 12
IZS CALIBRATION TIME:	33 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.17
OPERATIONAL TIME:	739 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 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	1.98	1.98	1.98	1.98	S	1.99	1.99	1.99	1.99	1.98	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.98	1.97	1.98	1.98	1.97	1.99	1.98	1.98	24
2	1.99	1.99	1.99	1.99	S	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.02	1.99	2.02	1.98	2.02	1.99	1.98	24
3	2.07	2.06	2.06	S	2.00	1.99	2.00	2.03	2.05	2.04	2.00	2.00	2.03	2.02	2.00	2.00	1.99	1.99	1.99	1.99	2.00	1.99	2.00	1.99	2.00	1.99	2.07	2.01	24
4	2.00	2.01	S	2.00	2.01	2.00	2.00	2.00	1.99	2.00	1.99	2.00	1.99	2.00	2.04	2.02	2.02	2.02	2.39	11.62	6.21	10.22	2.83	6.91	4.37	1.99	11.62	3.33	24
5	3.10	S	3.71	2.99	3.26	4.34	2.83	3.69	2.50	2.50	2.30	2.18	2.31	2.07	2.07	2.06	2.23	2.07	2.09	2.17	2.09	2.07	2.08	2.13	2.06	4.34	2.56	24	
6	S	2.12	2.17	2.11	2.07	2.03	4.90	2.10	2.03	2.00	1.99	1.98	1.98	1.97	1.98	1.98	1.98	1.97	3.17	4.35	2.68	3.04	2.67	S	1.97	4.90	2.42	24	
7	2.51	2.33	2.38	2.18	2.17	2.05	2.06	2.20	2.15	2.10	2.08	2.19	2.03	2.02	2.02	2.03	2.02	2.07	4.31	3.90	5.72	6.55	S	3.42	2.02	6.55	2.72	24	
8	3.42	3.05	2.68	2.62	2.50	2.30	2.51	2.36	2.05	1.97	1.99	1.99	1.98	1.99	1.98	1.98	1.99	2.02	2.15	2.19	2.03	S	2.25	2.19	1.97	3.42	2.27	24	
9	2.19	2.58	2.69	2.88	2.22	2.49	2.04	2.03	2.03	2.06	2.06	2.06	2.04	2.03	2.03	2.02	1.99	1.98	2.31	2.59	S	3.04	3.09	2.29	1.98	3.09	2.29	24	
10	2.44	4.39	5.18	4.12	3.87	3.52	3.04	3.87	2.77	1.96	1.96	1.95	1.96	1.96	1.96	1.97	1.97	1.97	1.97	S	3.41	6.41	5.84	3.62	1.95	6.41	3.14	24	
11	3.66	2.79	3.14	2.46	2.83	2.83	3.06	2.80	2.40	2.27	2.08	2.03	2.10	2.17	2.25	2.23	2.38	2.41	S	7.82	9.18	3.42	9.94	3.17	2.03	9.94	3.45	24	
12	15.30	7.06	3.65	2.51	2.46	2.46	2.42	2.17	2.32	2.25	2.03	2.98	2.09	2.28	2.39	2.56	2.46	S	4.56	7.86	5.15	3.46	2.76	4.80	2.03	15.30	3.83	24	
13	3.60	3.01	5.26	2.82	4.38	3.70	3.34	2.23	2.53	2.74	2.90	2.63	C	C	C	C	C	2.08	2.08	1.98	1.94	1.96	1.96	2.00	1.94	5.26	2.80	24	
14	1.97	2.00	2.09	2.08	2.08	2.17	2.20	2.18	2.15	2.24	2.14	2.15	2.12	2.17	2.12	S	2.10	2.09	2.08	2.11	2.08	2.04	2.06	2.14	1.97	2.24	2.11	24	
15	2.36	2.26	2.20	2.06	2.46	2.20	2.75	3.34	2.70	2.42	2.15	2.32	2.39	2.14	S	2.12	2.23	2.36	2.89	3.47	4.13	4.35	4.77	2.47	2.06	4.77	2.72	24	
16	2.44	2.52	2.44	2.78	2.49	2.40	2.11	2.11	2.14	2.15	2.12	2.08	2.07	S	2.08	2.08	2.08	2.06	2.07	2.06	2.07	2.41	2.36	2.80	2.06	2.80	2.26	24	
17	3.15	4.66	3.10	4.52	3.37	2.48	2.21	2.23	2.33	2.13	2.03	2.03	S	2.03	2.02	2.02	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	4.66	2.44	24	
18	1.99	1.99	1.99	2.07	1.98	1.98	1.98	1.98	1.98	1.98	1.99	S	1.98	1.98	1.98	1.97	1.99	1.98	1.97	2.08	6.24	4.38	3.20	4.12	1.97	6.24	2.43	24	
19	2.22	2.20	2.13	2.13	2.16	2.14	2.44	2.20	2.20	2.06	S	2.19	2.30	2.01	1.99	1.96	1.95	1.95	1.96	1.97	1.96	1.95	1.94	1.94	1.94	2.44	2.08	24	
20	1.93	3.25	2.69	1.94	1.94	1.94	1.95	1.96	1.98	S	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.94	1.92	2.33	2.30	2.06	2.13	2.12	1.92	3.25	2.09	24	
21	1.95	1.94	1.95	1.96	1.96	1.96	1.97	1.98	S	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.98	1.97	1.99	1.98	1.97	1.96	1.96	1.94	1.99	1.97	24	
22	1.96	1.96	1.97	1.97	1.98	1.97	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.98	1.98	24
23	1.97	1.97	1.97	1.97	1.97	1.99	S	2.06	2.06	1.99	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	2.00	1.97	2.06	1.98	24	
24	1.99	1.96	1.96	1.96	1.95	S	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.96	1.95	1.96	1.97	1.96	1.96	1.95	1.95	1.99	1.96	24	
25	1.96	1.96	1.96	1.96	S	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.95	2.00	2.23	2.09	2.09	1.95	1.95	1.95	2.23	1.98	24	
26	1.96	1.95	1.96	S	1.96	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	2.16	1.95	2.16	1.96	24	
27	2.16	2.08	S	1.96	1.99	2.01	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.96	1.96	1.96	1.98	1.97	2.02	1.95	2.16	1.98	24
28	2.63	S	2.51	1.98	1.99	2.01	2.01	2.02	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.96	1.95	1.95	1.96	1.96	1.95	2.63	2.02	24	
29	S	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.96	S	1.95	1.97	1.96	24
30	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.98	1.97	S	1.97	1.95	1.98	1.96	24
31	3.22	6.54	15.07	8.65	4.31	4.90	4.12	4.77	2.36	2.02	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	2.44	3.72	6.54	S	8.74	4.82	1.98	15.07	4.27	24	
HOURLY MAX	15.30	7.06	15.07	8.65	4.38	4.90	4.90	4.77	2.77	2.74	2.90	2.98	2.39	2.28	2.39	2.56	2.46	2.41	11.62	7.86	10.22	6.55	9.94	4.82					
HOURLY AVG	2.83	2.71	2.99	2.57	2.42	2.40	2.39	2.33	2.15	2.08	2.05	2.08	2.03	2.01	2.01	2.02	2.03	2.03	2.57	2.82	3.18	2.68	3.04	2.56					

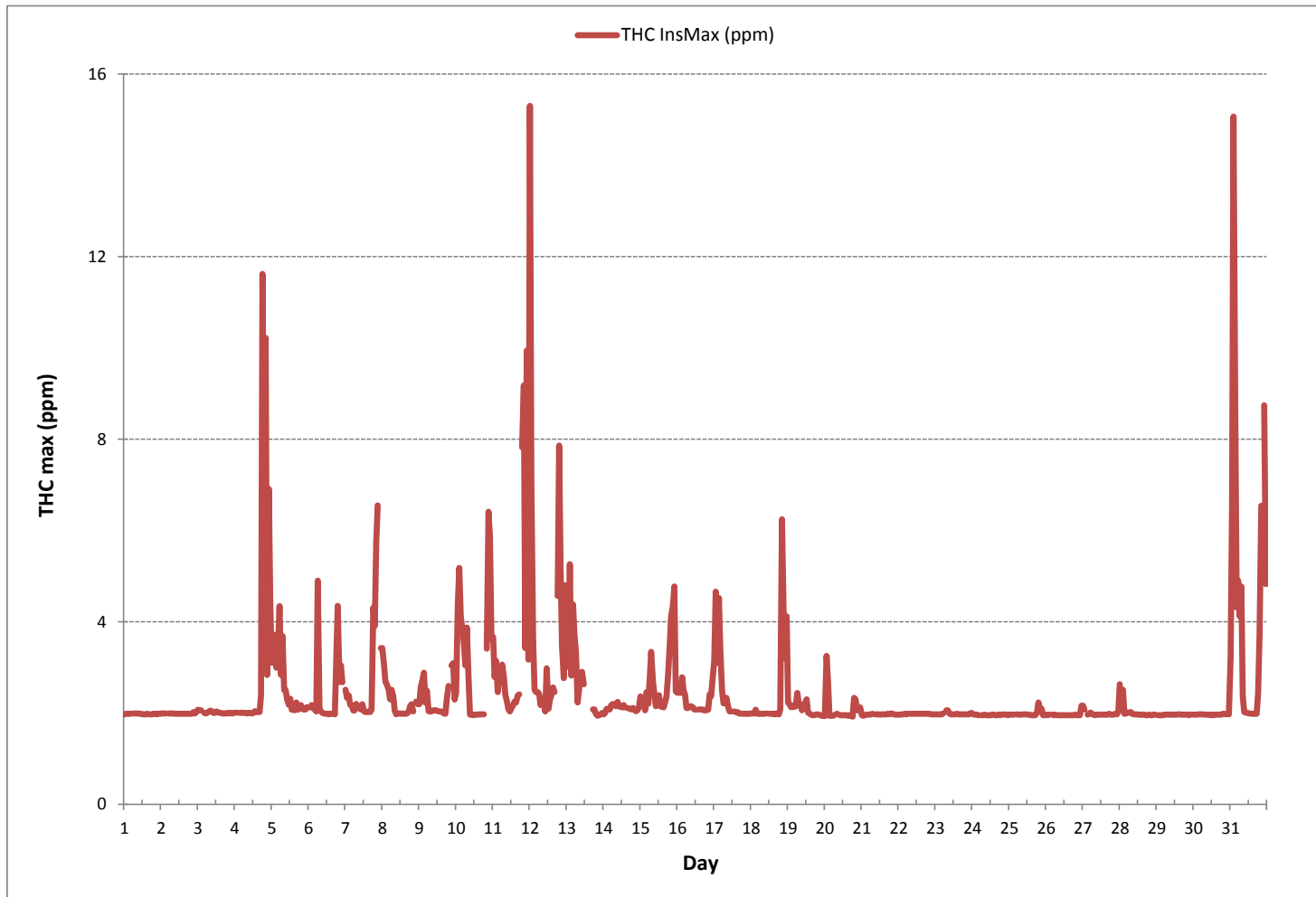
STATUS FLAG CODES

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:	707				
MAXIMUM INSTANTANEOUS VALUE:	15.30	ppm	@ HOUR	0	ON DAY 12
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	1.26				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 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	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	1.97	1.98	1.98	1.98	S	1.99	1.99	1.99	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.96	1.99	1.97	24
2	1.98	1.98	1.98	1.98	S	1.99	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.98	1.98	2.00	1.98	2.00	1.97	2.00	1.98	24
3	2.07	2.06	2.06	S	1.99	1.99	1.99	2.03	2.05	2.04	1.99	1.99	2.02	2.01	1.99	1.99	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.98	2.07	2.01	24
4	1.99	1.99	S	1.99	1.99	2.00	2.00	1.99	1.99	1.99	1.99	1.99	2.00	2.04	2.00	2.01	2.01	2.39	11.59	6.22	10.19	2.82	6.91	4.37	1.99	11.59	3.32	24
5	3.09	S	3.72	2.99	3.26	4.33	2.82	3.70	2.50	2.50	2.29	2.17	2.30	2.07	2.07	2.06	2.07	2.07	2.08	2.08	2.08	2.07	2.07	2.12	2.06	4.33	2.54	24
6	S	2.11	2.16	2.09	2.07	2.02	4.89	2.09	2.02	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	3.16	4.35	2.67	3.04	2.66	S	1.97	4.89	2.41	24
7	2.51	2.32	2.38	2.17	2.17	2.05	2.06	2.19	2.14	2.09	2.08	2.18	2.03	2.02	2.01	2.02	2.01	2.07	4.31	3.89	5.73	5.90	S	3.42	2.01	5.90	2.68	24
8	3.42	3.05	2.67	2.61	2.50	2.29	2.51	2.35	2.05	1.97	1.98	1.99	1.97	1.98	1.97	1.98	1.99	2.01	2.14	2.18	2.03	S	2.25	2.18	1.97	3.42	2.26	24
9	2.18	2.57	2.69	2.87	2.22	2.48	2.04	2.02	2.02	2.06	2.06	2.06	2.03	2.02	2.02	2.00	1.98	1.97	2.31	2.58	S	3.04	3.08	2.28	1.97	3.08	2.29	24
10	2.43	4.39	5.17	4.12	3.87	3.52	3.04	3.86	2.75	1.96	1.95	1.94	1.94	1.95	1.95	1.96	1.96	1.96	1.96	S	3.40	6.42	5.84	3.62	1.94	6.42	3.13	24
11	3.66	2.78	3.13	2.46	2.81	2.82	3.06	2.78	2.40	2.25	2.08	2.02	2.09	2.16	2.24	2.23	2.36	2.41	S	7.81	9.16	3.41	9.86	3.17	2.02	9.86	3.44	24
12	15.10	7.07	3.65	2.51	2.46	2.45	2.42	2.16	2.31	2.24	2.01	2.98	2.05	2.26	2.30	2.55	2.45	S	4.54	7.75	5.15	3.46	2.74	4.78	2.01	15.10	3.80	24
13	3.59	3.01	5.25	2.81	4.38	3.70	3.33	2.23	2.53	2.74	2.89	2.56	C	C	C	C	C	2.07	2.07	1.98	1.93	1.95	1.96	1.99	1.93	5.25	2.79	24
14	1.97	1.99	2.08	2.07	2.06	2.16	2.20	2.18	2.14	2.23	2.13	2.14	2.11	2.16	2.11	S	2.08	2.08	2.08	2.10	2.07	2.03	2.04	2.13	1.97	2.23	2.10	24
15	2.35	2.26	2.20	2.05	2.46	2.20	2.75	3.33	2.70	2.42	2.14	2.31	2.39	2.13	S	2.11	2.22	2.35	2.88	3.46	4.13	4.35	4.67	2.47	2.05	4.67	2.71	24
16	2.43	2.51	2.44	2.76	2.49	2.39	2.10	2.11	2.13	2.14	2.12	2.07	2.05	S	2.07	2.07	2.06	2.05	2.05	2.05	2.05	2.40	2.35	2.79	2.05	2.79	2.25	24
17	3.14	4.65	3.09	4.51	3.36	2.48	2.20	2.23	2.32	2.12	2.03	2.03	S	2.02	2.02	2.00	1.99	1.99	1.97	1.97	1.98	1.97	1.97	1.97	1.97	4.65	2.44	24
18	1.99	1.99	1.98	2.06	1.97	1.97	1.97	1.97	1.97	1.97	1.98	S	1.97	1.97	1.97	1.96	1.98	1.97	1.97	2.07	6.24	4.38	3.19	4.12	1.96	6.24	2.42	24
19	2.21	2.20	2.12	2.12	2.15	2.13	2.20	2.20	2.19	2.04	S	2.18	2.29	2.01	1.98	1.95	1.95	1.94	1.95	1.96	1.95	1.94	1.93	1.93	1.93	2.29	2.07	24
20	1.92	3.24	2.61	1.93	1.93	1.93	1.95	1.95	1.97	S	1.95	1.93	1.95	1.95	1.94	1.93	1.95	1.93	1.91	2.32	2.29	2.04	2.12	2.12	1.91	3.24	2.08	24
21	1.94	1.93	1.95	1.95	1.95	1.96	1.97	1.98	S	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.96	1.96	1.96	1.93	1.98	1.96	24
22	1.96	1.96	1.96	1.97	1.97	1.97	1.97	S	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	24
23	1.96	1.96	1.97	1.97	1.97	1.98	S	2.05	2.05	1.98	1.97	1.97	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.99	1.96	2.05	1.97	24
24	1.99	1.95	1.95	1.95	1.95	S	1.95	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.94	1.99	1.95	24
25	1.95	1.95	1.95	1.96	S	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.99	2.23	2.08	2.08	1.95	1.95	1.95	2.23	1.98	24
26	1.95	1.95	1.95	S	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.95	2.15	1.94	2.15	1.96	24
27	2.15	2.07	S	1.95	1.98	2.01	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.97	1.95	1.95	1.96	1.97	1.97	2.01	1.95	2.15	1.97	24
28	2.62	S	2.50	1.98	1.98	1.99	2.00	2.01	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	2.62	2.02	24
29	S	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.96	1.95	24
30	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.95	1.95	1.96	1.96	1.95	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.98	1.96	S	1.96	1.95	1.98	1.96	24
31	3.22	6.54	15.04	8.63	4.31	4.89	4.12	4.75	2.35	2.00	2.00	1.99	1.98	1.98	1.97	1.97	1.97	1.97	2.43	3.72	6.55	S	8.73	4.81	1.97	15.04	4.26	24
HOURLY MAX	15.10	7.07	15.04	8.63	4.38	4.89	4.89	4.75	2.75	2.74	2.89	2.98	2.39	2.26	2.30	2.55	2.45	2.41	11.59	7.81	10.19	6.42	9.86	4.81				
HOURLY AVG	2.82	2.70	2.98	2.56	2.42	2.40	2.38	2.33	2.14	2.08	2.04	2.07	2.02	2.01	2.00	2.01	2.02	2.02	2.56	2.81	3.18	2.65	3.03	2.56				

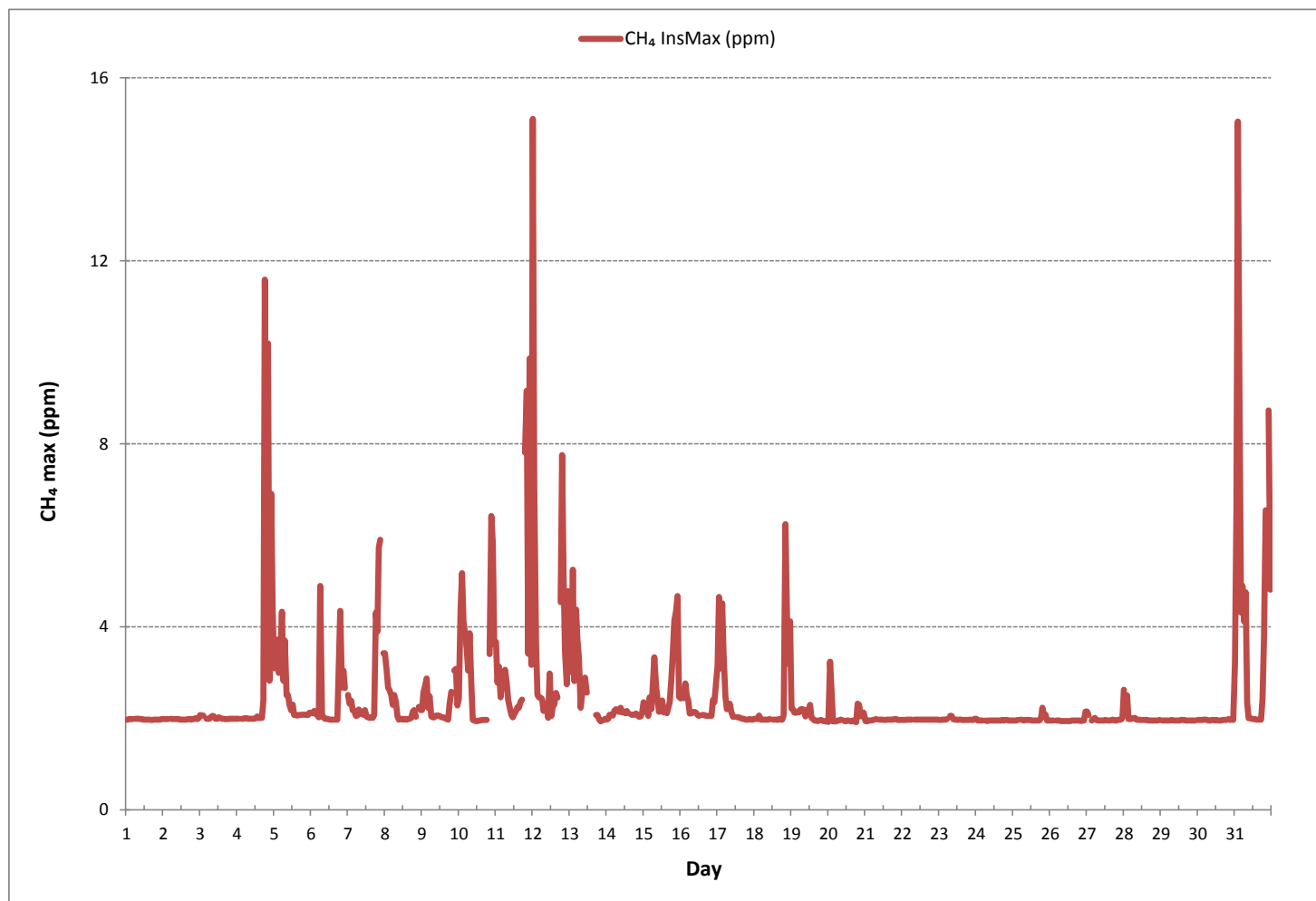
STATUS FLAG CODES

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:	707
MAXIMUM INSTANTANEOUS VALUE:	15.10 ppm @ HOUR 0 ON DAY 12
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	1.25
OPERATIONAL TIME:	744 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)

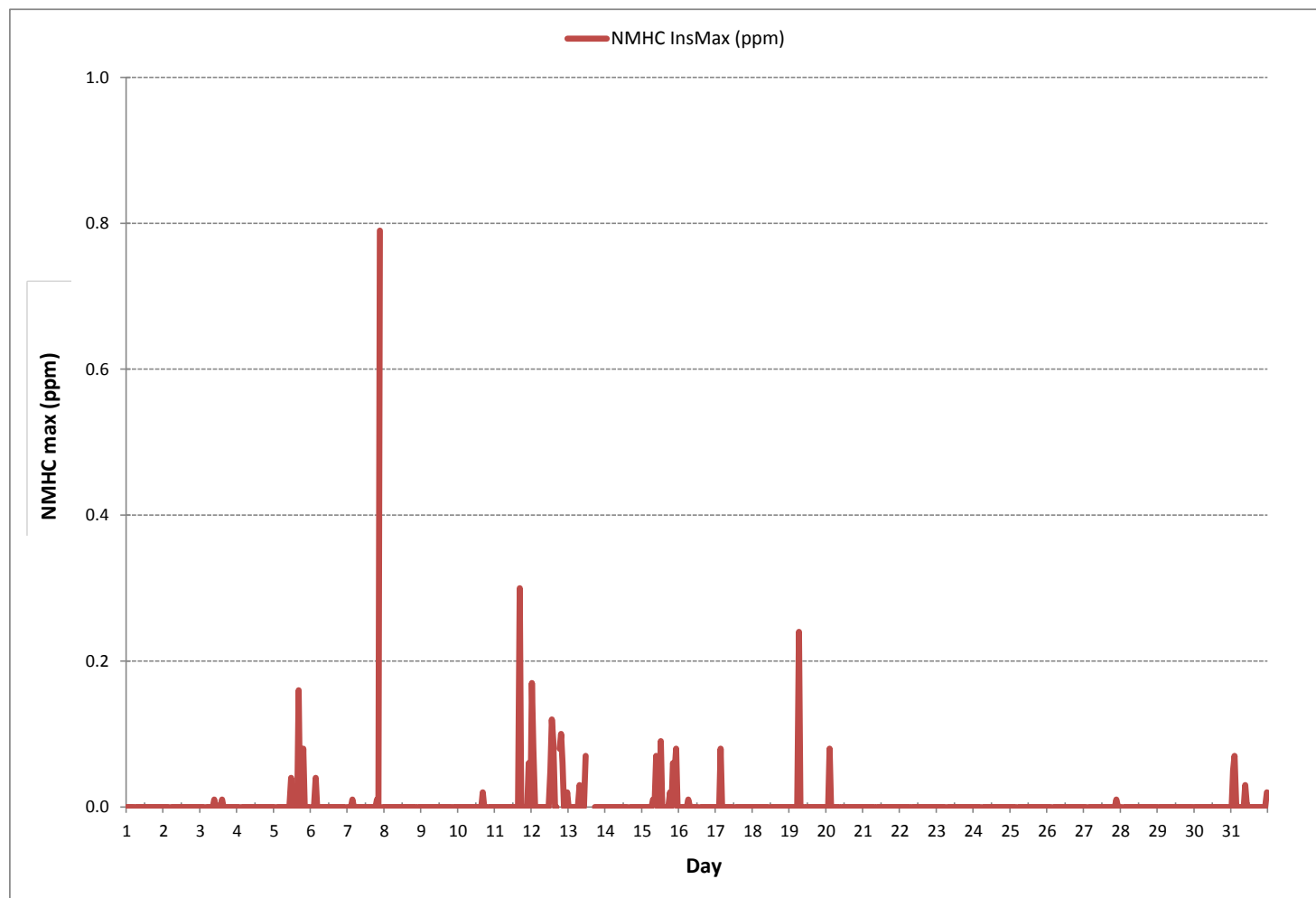


[illegible]

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

NUMBER OF NON-ZERO READINGS:	40				
MAXIMUM INSTANTANEOUS VALUE:	0.79	ppm	@ HOUR	21	ON DAY 7
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.04				

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - March 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	22.1	31.3	35.2	35.4	36.1	37.6	40.1	37.9	38.6	41.6	44.8	53.5	47.9	52.6	47.0	49.1	51.7	53.1	38.2	44.6	40.5	45.6	49.8	43.1	22.1	53.5	42.4	24
2	39.4	44.6	43.3	41.2	40.8	44.8	40.6	37.9	40.2	38.8	35.6	40.4	37.9	37.6	36.3	28.9	26.0	24.6	25.1	21.4	17.6	22.9	19.1	18.3	17.6	44.8	33.5	24
3	12.5	10.6	9.3	10.3	9.1	6.4	7.4	5.2	4.3	7.2	11.1	17.2	25.4	25.7	27.1	25.1	23.6	21.1	18.7	16.6	15.5	18.0	19.1	18.4	4.3	27.1	15.2	24
4	17.3	18.1	17.1	18.8	17.3	17.9	15.4	13.7	12.3	15.2	15.1	13.0	12.0	10.7	13.3	12.8	11.2	7.2	3.7	3.6	7.6	6.8	3.6	3.1	3.1	18.8	12.0	24
5	5.6	5.4	5.0	6.5	7.3	8.3	11.3	8.2	7.7	7.4	12.7	11.4	15.5	18.4	13.4	11.5	11.9	14.7	10.9	8.1	9.8	14.0	13.9	8.2	5.0	18.4	10.3	24
6	9.9	8.0	6.7	14.4	9.6	12.7	9.3	9.2	12.4	15.3	13.2	13.2	12.1	11.7	12.4	13.2	9.4	8.8	4.1	4.2	3.7	3.7	3.6	3.6	3.6	15.3	9.4	24
7	5.1	6.2	7.5	13.0	12.0	16.6	15.0	9.0	10.2	8.4	8.7	11.2	11.8	12.6	11.3	11.8	12.9	11.4	4.0	6.5	5.8	5.0	4.8	4.3	4.0	16.6	9.4	24
8	5.1	4.6	4.9	6.9	8.2	6.8	7.2	12.4	14.8	17.0	18.6	22.7	25.4	24.5	25.6	28.4	26.4	30.1	29.8	11.0	13.3	18.9	14.7	10.9	4.6	30.1	16.2	24
9	10.9	12.0	6.9	6.7	7.1	16.6	17.9	20.5	22.0	27.7	26.8	27.9	24.3	27.0	23.7	20.8	16.3	13.7	10.5	10.1	10.3	12.2	14.5	18.9	6.7	27.9	16.9	24
10	18.8	10.6	11.2	12.7	10.9	7.3	6.0	8.8	18.6	20.0	23.2	26.4	26.6	28.0	33.0	30.5	27.4	20.6	16.4	8.6	4.5	8.4	5.4	5.1	4.5	33.0	16.2	24
11	5.3	5.3	5.7	11.4	7.1	6.5	6.5	10.4	13.9	11.6	15.2	17.0	16.4	19.4	19.7	11.3	10.1	6.5	3.2	5.1	5.8	5.7	5.9	4.1	3.2	19.7	9.5	24
12	3.6	4.5	6.1	7.9	9.2	8.3	10.8	16.2	16.0	14.5	9.7	11.4	11.9	11.7	14.7	12.5	11.7	12.6	5.8	4.7	5.2	12.4	8.0	6.4	3.6	16.2	9.8	24
13	9.1	8.3	8.4	10.6	5.5	5.8	12.6	16.9	11.7	10.2	6.4	8.4	12.4	12.8	12.7	13.3	14.2	8.9	14.0	22.9	27.7	22.6	21.0	21.5	5.5	27.7	13.2	24
14	19.5	20.6	23.7	21.1	22.5	20.4	17.4	21.7	22.6	15.9	17.7	15.3	6.5	11.5	13.0	11.9	12.0	8.7	17.1	25.7	31.6	28.5	22.5	20.5	6.5	31.6	18.7	24
15	18.8	22.4	19.0	15.6	15.2	11.9	10.4	9.9	17.5	17.9	14.4	14.6	12.9	14.4	11.3	15.7	10.3	6.5	4.1	5.0	4.0	4.0	5.1	9.4	4.0	22.4	12.1	24
16	8.2	8.4	3.8	9.0	5.5	7.7	11.4	13.4	14.1	13.3	18.5	17.1	15.9	15.8	17.2	16.9	12.4	9.8	8.1	8.3	8.5	8.7	9.1	5.8	3.8	18.5	11.1	24
17	5.2	17.8	8.8	6.0	11.0	10.9	14.3	15.0	9.2	14.8	19.8	7.8	10.4	16.0	16.0	18.9	18.9	14.5	10.6	6.6	7.8	7.7	7.1	7.1	5.2	19.8	11.8	24
18	8.5	5.2	9.5	7.4	6.3	8.8	10.5	8.0	9.7	8.2	9.3	11.9	15.1	14.9	12.1	10.3	9.1	7.5	5.2	2.5	4.8	4.9	7.7	16.1	2.5	16.1	8.9	24
19	13.8	13.3	13.2	13.8	17.4	20.8	19.5	16.3	17.1	15.0	12.2	17.8	24.0	22.0	23.6	22.0	17.6	19.5	18.9	18.8	14.0	8.5	9.7	13.6	8.5	24.0	16.8	24
20	16.0	9.4	11.4	18.4	18.6	11.0	11.2	11.1	10.4	14.3	11.4	12.0	16.1	16.3	11.1	10.6	16.9	18.5	14.1	4.8	3.9	2.9	3.3	5.1	2.9	18.6	11.6	24
21	5.0	10.9	12.4	17.0	19.5	23.2	20.8	25.1	28.6	31.0	33.2	30.3	30.6	34.5	33.5	40.3	37.6	39.0	34.4	43.0	40.9	41.0	39.7	32.2	5.0	43.0	29.3	24
22	35.0	32.8	23.0	20.7	28.3	29.8	28.3	27.6	29.5	34.3	36.1	34.9	35.8	41.3	43.0	45.4	40.2	43.2	44.6	45.6	50.2	45.6	43.0	44.6	20.7	50.2	36.8	24
23	42.3	34.0	27.6	28.5	26.7	26.0	21.0	23.8	42.4	43.1	38.3	37.7	36.0	31.1	36.2	32.7	30.8	18.7	13.1	11.7	15.3	19.8	12.5	10.8	10.8	43.1	27.5	24
24	12.9	14.6	14.2	14.8	19.8	19.3	19.4	24.7	22.5	25.2	24.7	23.2	21.3	17.6	17.7	18.1	15.4	11.8	5.5	3.8	6.2	6.7	8.8	9.7	3.8	25.2	15.7	24
25	13.2	13.8	9.5	17.2	13.3	16.9	14.8	13.1	15.3	15.9	14.8	16.5	16.8	14.2	14.7	15.6	14.4	9.9	5.8	13.0	19.6	19.9	13.0	15.3	5.8	19.9	14.4	24
26	11.5	16.0	16.7	17.5	23.4	24.4	20.7	24.5	25.3	24.3	27.5	26.7	31.5	25.3	23.6	23.9	21.9	20.5	17.8	16.2	13.6	7.1	6.1	7.7	6.1	31.5	19.7	24
27	17.3	21.6	19.4	24.9	24.9	23.4	19.2	20.3	15.1	15.4	23.3	25.0	25.7	25.2	27.2	22.1	20.0	17.7	8.3	7.5	10.8	15.4	14.6	13.8	7.5	27.2	19.1	24
28	12.5	13.5	11.4	9.7	12.5	12.7	9.6	12.1	14.0	13.8	12.7	16.2	17.2	16.0	15.0	13.5	15.7	12.7	18.8	16.8	17.3	17.8	15.3	15.4	9.6	18.8	14.3	24
29	12.9	11.4	12.2	10.3	5.3	7.3	5.6	6.4	9.2	6.4	12.4	14.3	16.2	19.0	20.1	20.7	22.5	20.0	17.9	22.0	19.1	20.5	22.9	27.2	5.3	27.2	15.1	24
30	20.1	19.9	28.1	28.2	29.5	24.6	20.6	20.1	26.4	24.1	23.8	28.0	25.4	26.4	28.4	24.0	20.7	13.3	13.2	8.9	10.6	8.8	10.4	10.4	8.8	29.5	20.6	24
31	9.9	6.8	7.7	9.0	9.8	9.9	8.3	8.9	16.5	16.9	13.9	17.1	21.9	16.5	19.3	15.2	13.0	11.7	8.8	5.2	4.4	5.1	5.0	5.9	4.4	21.9	11.1	24
HOURLY MAX	42.3	44.6	43.3	41.2	40.8	44.8	40.6	37.9	42.4	43.1	44.8	53.5	47.9	52.6	47.0	49.1	51.7	53.1	44.6	45.6	50.2	45.6	49.8	44.6				
HOURLY AVG	14.4	14.9	14.2	15.6	15.8	16.3	15.6	16.4	18.3	18.9	19.5	20.6	21.3	21.6	21.7	20.9	19.4	17.3	14.5	14.0	14.5	15.1	14.2	14.1				

STATUS FLAG CODES

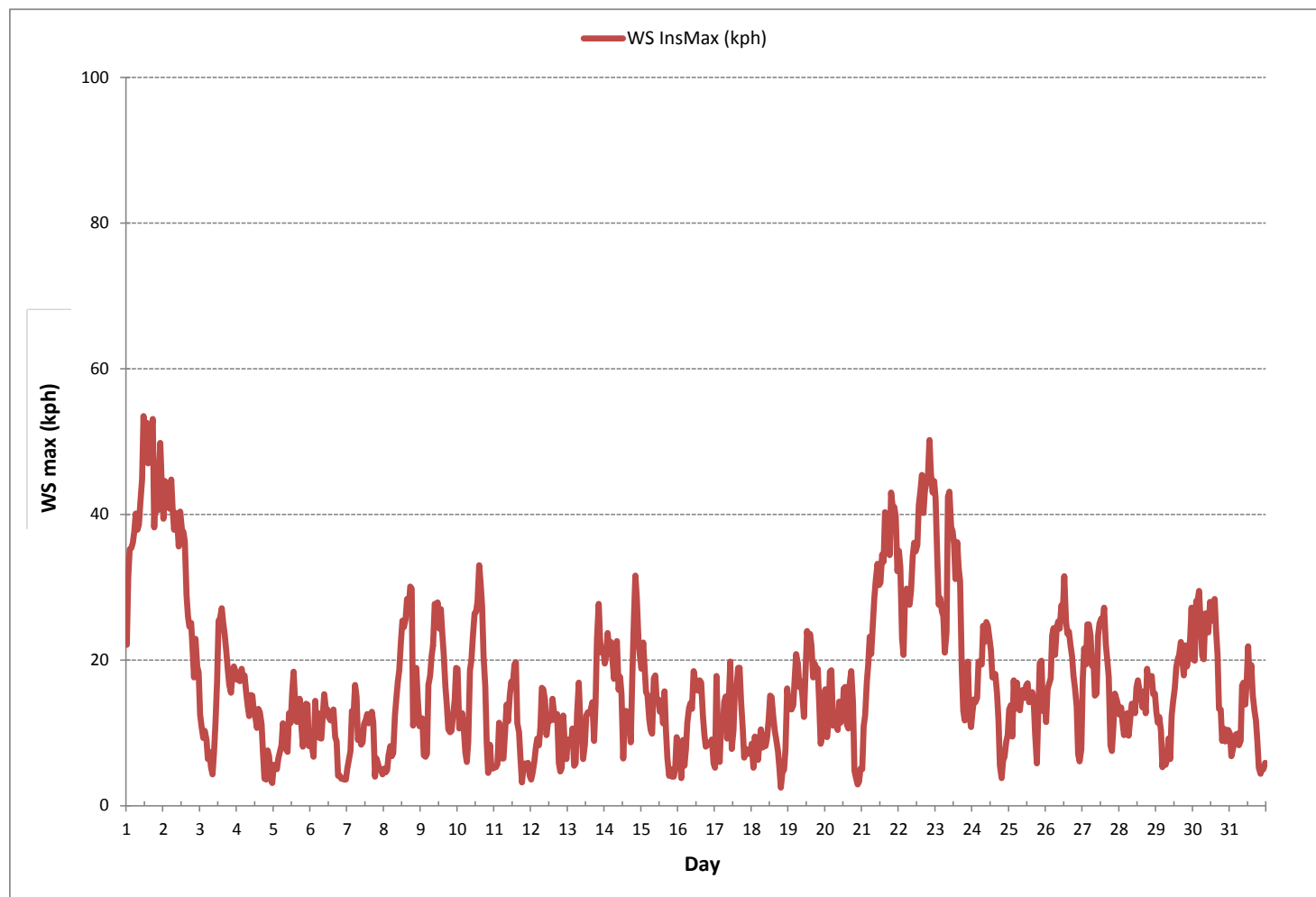
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE: 53.5 kph @ HOUR 11 ON DAY 1

OPERATIONAL TIME: 744 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?	
☒ Yes ☐ 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

20-04-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u> Site: <u>Reno Station</u>	Project #: <u>196-2018-03-93-C</u> Contact: <u>Karla Reesor</u>
---	--

Level 0 Preliminary Verification

Carla Reesor

Date 04-04-2018

Level 1 Primary Validation

Carla Reesor

Date 04-04-2018

Level 2 Final Validation

Carla Reesor

Date 19-04-2018

Level 3 Independent Data Review

Cheri Sinclair

Date 20-04-2018

Post-Final Validation

NA

Date NA

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.