

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

JOB #: 196-2017-04-93-C

April 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **May 24, 2017**

Prepared by:



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SUMMARY

In April 2017, 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.

SO₂: During the monthly calibration on April 6, the analyzer exhibited a moderate delayed response when tested at the high point. A repeat calibration was completed on April 7 to further assess the analyzer's performance and the result met AMD's calibration requirements. Four hours of downtime were recorded due to this event.

TRS: Nine hours of downtime were recorded this month.

- One hour of downtime was attributed to a repeat span check that was triggered to assess analyzer stability and update the expected span value.
- Eight hours of downtime were recorded between April 20 and April 24, due to additional quality checks that were performed to address a biased low span response.

THC/CH₄/NMHC: One hour of data was discarded on April 19, as per client request.

Wind Speed: Following the wind system upgrade in February 2017, it was discovered that the manufacturer had made an error in units that resulted in data being under-reported by 0.45%. The wind system was calibrated on April 6, during which the wind speed gain was adjusted. This offset was corrected for data collected between April 1 and April 6.

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 403-219-3677 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	0	ALL	ALL	VAR	VAR	0	ALL	99.4
TRS (ppb)	-	-	-	-	0.40	1.19	29	0	7.9	WSW	0.47	29	98.8
THC (ppm)	-	-	-	-	1.91	3.37	6	6	4	S	2.06	6	99.9
CH ₄ (ppm)	-	-	-	-	1.91	3.37	6	6	4	S	2.06	6	99.9
NMHC (ppm)	-	-	-	-	0.00	0.03	20	4	5.8	SSE	0.00	ALL	99.9
RELATIVE HUMIDITY (%)	-	-	-	-	65	95	7, 14	7, VAR	3.8 VAR	NE VAR	94	14	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	938	951	21, 22	VAR, VAR	VAR VAR	VAR VAR	951	21	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	2.7	14.1	29	14	7	WSW	8.0	29	100.0
STATION TEMPERATURE (°C)	-	-	-	-	22.6	23.8	3, 29	16, VAR	4.4 VAR	W VAR	22.8	4, 29	100.0
VECTOR WS (kph)	-	-	-	-	3.1	23	13	8	-	S	18.1	13	100.0
VECTOR WD (sec)	-	-	-	-	85 (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	2017	April

CONTINUOUS AMBIENT MONITORING								
			ONE - HOUR AVERAGE		24 - HOUR AVERAGE			
PARAMETER	STN No.	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO ₂	1	99.4	0.000	ppm	0	0.000	ppm	0
TRS	1	98.8	0.001	ppm	-	0.000	ppm	-
THC	1	99.9	3.37	ppm	-	2.06	ppm	-
CH ₄	1	99.9	3.37	ppm	-	2.06	ppm	-
NMHC	1	99.9	0.03	ppm	-	0.00	ppm	-
RH	1	100.0	95	%	-	94	%	-
BP	1	100.0	951	mb	-	951	mb	-
Ambient TPX	1	100.0	14.1	°C	-	8.0	°C	-
Station TPX	1	100.0	23.8	°C	-	22.8	°C	-
Wind Speed	1	100.0	23	kph	-	18	kph	-
Wind Direction	1	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.

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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).

Sample filters for all continuous air monitors are changed 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.

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period was 99.4%, equivalent to four hours of downtime.
- The routine monthly calibration was performed on April 6. The calibration was successful, however, the analyzer exhibited a moderate delayed response when tested at the high point. A repeat calibration was completed on April 7 to further assess the analyzer's performance and the results met AMD's calibration requirement. No further action was required.
- As both calibrations were successful, no data was discarded due to this event. However, four hours of downtime were recorded due to the additional quality check.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 98.8%, equivalent to nine hours of downtime.
- The routine monthly calibration was performed on April 6. A repeat span check was triggered immediately after the calibration to assess the stability of the zero-span system and update the expected span value. One hour of downtime was recorded due to this event.
- The analyzer began to span towards the lower acceptance limit on April 19. Three additional span checks were triggered between April 20 and April 21 to assess span response, the results exhibited the same trend. The span drifts were within acceptance limits, however, as a preventive action, a repeat calibration was successfully performed on April 24. The expected span value was subsequently updated.
- As the span results were within acceptance limits and the repeat calibration met AMD requirements, no data was discarded due to this event. However, eight hours of downtime were attributed to the additional quality checks.

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

- Operational time, for the monitoring period was 99.9%, equivalent to one hour of downtime.
- Five minutes of data collected on April 19 at hour 15:00 were recorded at unusually low concentrations. The suspect data was invalidated and the hourly data was re-averaged. As more than 45 minutes of data were valid for this hour, the hourly data is considered valid. However, the data was invalidated as per client request.
- The routine monthly calibration was performed on April 6. A new canister (S/N: 17129) was installed as the old canister (S/N: 1842) was due to expire on April 17. The span gas cylinder was also replaced during this site visit.
- One hour of maximum instantaneous data was invalidated on April 6, at hour 9:00, due to a brief power interference that occurred while performing routine monthly activities.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time, for the monitoring period was 100%.
- Following the wind system upgrade in February 2017, it was discovered that the manufacturer had made an error in units that resulted in data being under-reported by 0.45%. The wind system was calibrated on April 6, during which the wind speed gain was adjusted. This offset was corrected for data collected between April 1 and April 6.
- One hour of maximum instantaneous data was invalidated on April 6, at hour 9:00, due to a brief power interference that occurred while performing routine monthly activities.
- 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 technician was 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-00208: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) 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

Total Hydrocarbons - Thermo 55i FID Analyzer

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

Wind System - RM Young Unit

Relative Humidity - Met One Unit

Barometric Pressure - Met One Unit

Ambient Temperature - Met One 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

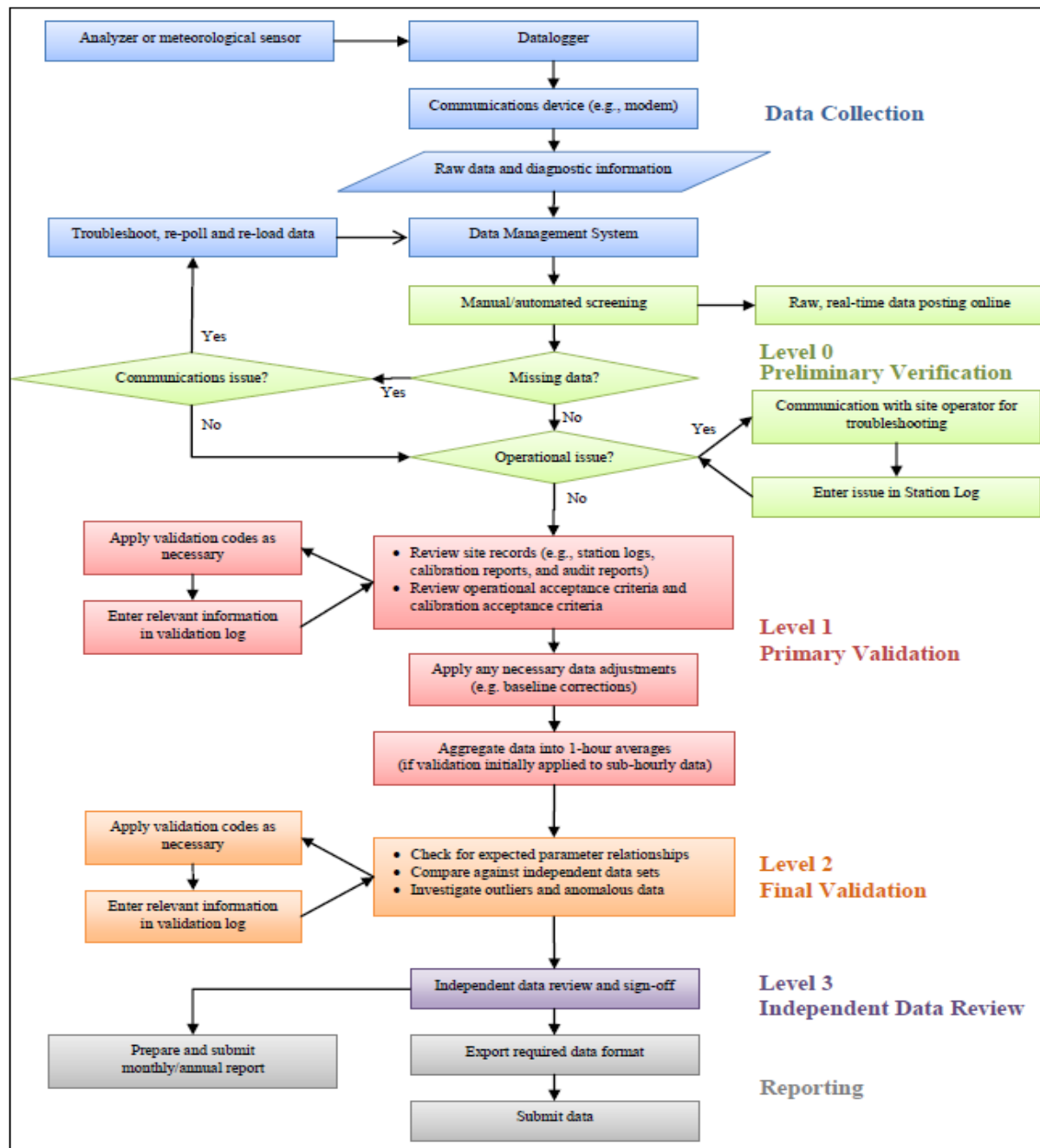
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	24
6	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	24
7	0	0	0	0	0	0	0	0	0	C1	C1	C1	C1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
8	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
9	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
10	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
11	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	0	24
12	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
13	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
14	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
15	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
16	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
17	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	0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
29	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
30	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
HOURLY MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	0	0	0	

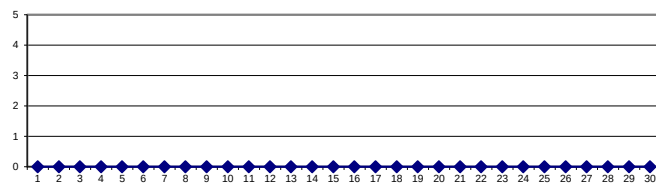
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	ppb	24-HR	48	ppb
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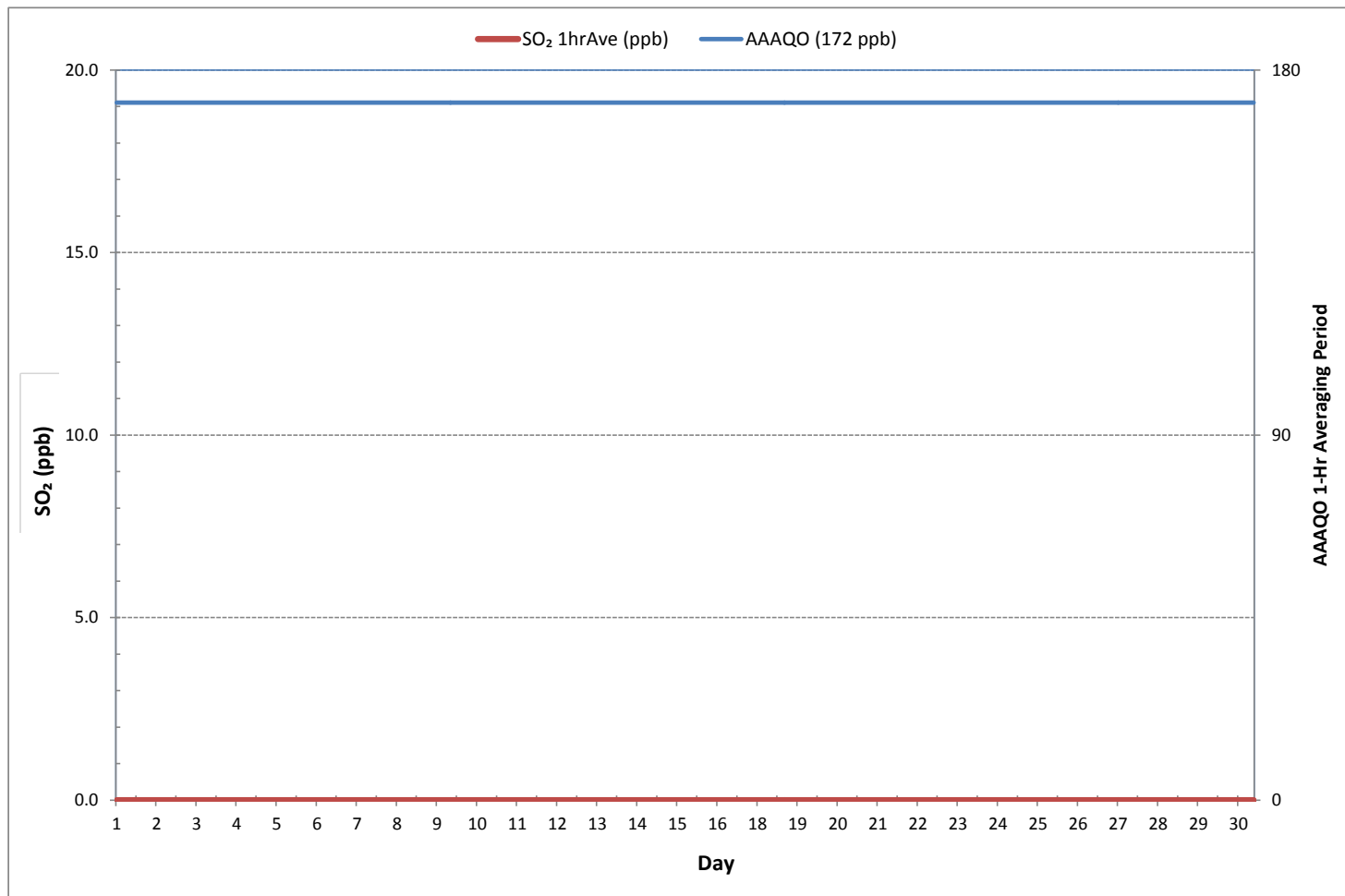
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:		0				
NUMBER OF 24-HR EXCEEDANCES:		0				
NUMBER OF NON-ZERO READINGS:		0				
MINIMUM 1-HR AVERAGE:	0	ppb	@ HOUR	ALL	ON DAY(S)	ALL
MAXIMUM 1-HR AVERAGE:	0	ppb	@ HOUR	ALL	ON DAY(S)	ALL
MAXIMUM 24-HR AVERAGE:	0	ppb			ON DAY(S)	ALL
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:		716	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:		99.4	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:		0	ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

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 MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0	24
2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	24
3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	24
4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	24
5	0	0	0	0	0	0	1	1	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	1	0	24
6	0	0	0	0	0	0	1	0	0	C	C	C	C	C	C	0	1	0	0	0	0	0	0	0	0	0	1	0	24
7	0	0	0	0	0	0	0	0	0	C1	C1	C1	C1	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
8	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
9	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
10	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	0	24
11	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	24
12	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
13	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
14	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
15	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
16	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
17	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	0	24
18	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
19	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
20	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	24
24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	24
26	0	0	0	0	0	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	24
27	0	0	0	0	0	0	0	0	0	0	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
30	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
HOURLY MAX	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
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	0	0	0	0	

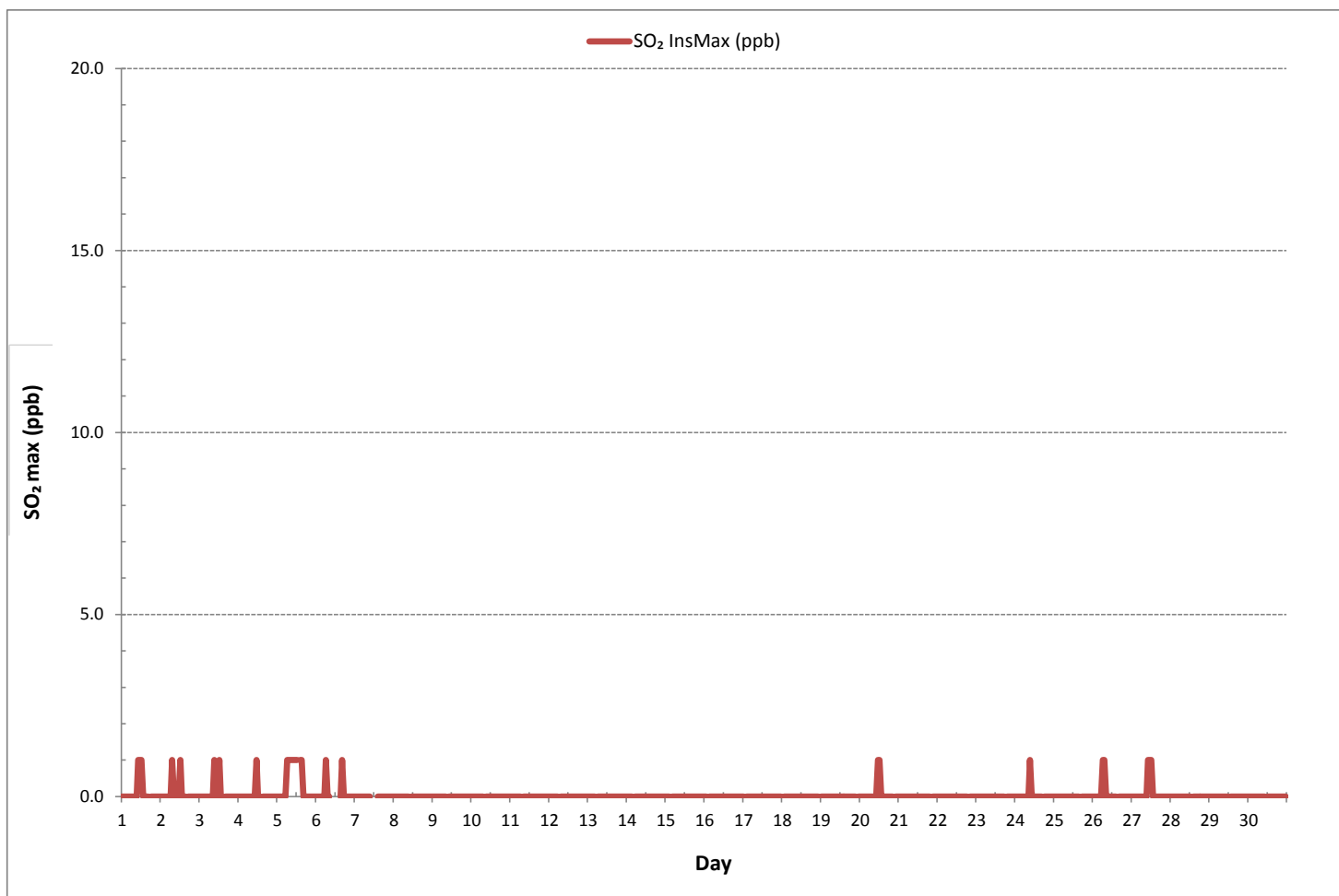
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	27
MAXIMUM INSTANTANEOUS VALUE:	1 ppb @ HOUR VAR ON DAY(S) VAR
IZS CALIBRATION TIME:	29 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	0
OPERATIONAL TIME:	716 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



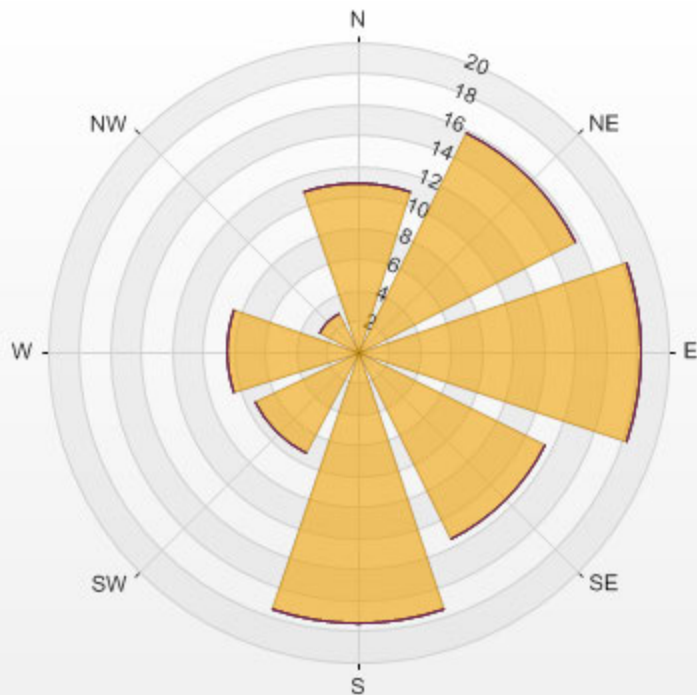
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO2[ppb]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.45%

Calm Avg: 0.02 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	10.9	0.0	0.0	0.0	0.0	10.9
NE	15.8	0.0	0.0	0.0	0.0	15.8
E	18.3	0.0	0.0	0.0	0.0	18.3
SE	13.6	0.0	0.0	0.0	0.0	13.6
S	17.5	0.0	0.0	0.0	0.0	17.5
SW	7.4	0.0	0.0	0.0	0.0	7.4
W	8.4	0.0	0.0	0.0	0.0	8.4
NW	2.8	0.0	0.0	0.0	0.0	2.8
Summary	94.6	0.0	0.0	0.0	0.0	94.6

PRAMP_RENO Poll.: PRAMP_RENO-SO₂[ppb] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.45% Calm Poll Avg: 0.02[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 2017/04 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR

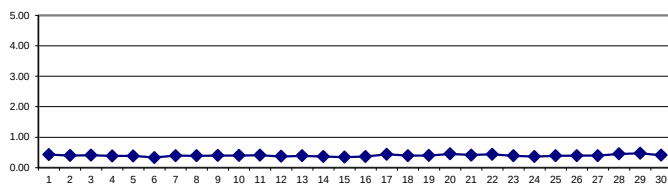
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	0.41	0.44	0.43	0.41	0.41	0.39	0.40	0.40	0.41	0.40	0.43	0.44	0.45	0.48	0.45	0.44	0.46	\$	0.47	0.47	0.44	0.42	0.45	0.41	0.39	0.48	0.43	24	
2	0.42	0.41	0.41	0.41	0.39	0.38	0.37	0.39	0.37	0.38	0.39	0.41	0.41	0.39	0.39	0.40	\$	0.42	0.41	0.39	0.41	0.40	0.39	0.39	0.37	0.42	0.40	24	
3	0.39	0.38	0.39	0.40	0.38	0.39	0.39	0.41	0.41	0.45	0.41	0.40	0.41	0.39	0.39	\$	0.42	0.40	0.39	0.39	0.42	0.45	0.49	0.50	0.38	0.50	0.41	24	
4	0.43	0.42	0.41	0.41	0.42	0.41	0.40	0.40	0.37	0.38	0.39	0.38	0.37	0.37	\$	0.40	0.37	0.36	0.37	0.36	0.35	0.37	0.37	0.36	0.35	0.43	0.39	24	
5	0.36	0.36	0.37	0.37	0.36	0.37	0.35	0.38	0.40	0.42	0.42	0.43	0.45	\$	0.46	0.41	0.39	0.38	0.38	0.36	0.36	0.33	0.33	0.37	0.33	0.46	0.38	24	
6	0.34	0.31	0.27	0.26	0.23	0.28	0.32	0.26	0.23	C	C	C	C	C	C	0.43	0.36	\$1	0.42	0.38	0.37	0.37	0.35	0.39	0.43	0.23	0.43	23	
7	0.37	0.39	0.39	0.44	0.41	0.40	0.45	0.45	0.43	0.39	0.40	\$	0.41	0.39	0.39	0.38	0.40	0.38	0.38	0.38	0.36	0.37	0.37	0.38	0.36	0.45	0.40	24	
8	0.40	0.40	0.42	0.42	0.43	0.42	0.42	0.41	0.39	0.39	\$	\$	0.42	0.39	0.37	0.37	0.37	0.36	0.36	0.36	0.37	0.38	0.36	0.37	0.39	0.36	0.43	0.39	24
9	0.37	0.37	0.37	0.37	0.38	0.41	0.40	0.38	0.40	\$	0.42	0.43	0.43	0.42	0.43	0.41	0.40	0.38	0.38	0.40	0.40	0.41	0.43	0.41	0.37	0.43	0.40	24	
10	0.42	0.44	0.42	0.41	0.42	0.43	0.41	0.41	\$	0.47	0.44	0.43	0.42	0.40	0.41	0.38	0.38	0.39	0.37	0.35	0.37	0.36	0.36	0.36	0.35	0.47	0.40	24	
11	0.34	0.39	0.37	0.34	0.40	0.45	0.49	\$	0.58	0.51	0.47	0.47	0.45	0.41	0.39	0.38	0.37	0.38	0.37	0.37	0.36	0.35	0.38	0.37	0.34	0.58	0.41	24	
12	0.35	0.36	0.37	0.39	0.40	0.38	\$	0.42	0.38	0.38	0.37	0.37	0.37	0.38	0.37	0.37	0.34	0.35	0.36	0.35	0.36	0.36	0.37	0.38	0.34	0.42	0.37	24	
13	0.39	0.40	0.39	0.38	0.38	\$	0.42	0.39	0.38	0.37	0.37	0.38	0.39	0.40	0.42	0.40	0.40	0.40	0.39	0.37	0.37	0.37	0.37	0.44	0.37	0.44	0.39	24	
14	0.44	0.41	0.39	0.34	\$	0.40	0.41	0.39	0.38	0.38	0.38	0.38	0.38	0.35	0.36	0.33	0.33	0.33	0.35	0.33	0.32	0.33	0.33	0.34	0.32	0.44	0.36	24	
15	0.32	0.34	0.32	\$	0.35	0.33	0.33	0.33	0.46	0.33	0.33	0.34	0.34	0.33	0.34	0.33	0.32	0.32	0.31	0.33	0.35	0.41	0.36	0.38	0.31	0.46	0.34	24	
16	0.45	0.40	\$	0.37	0.35	0.34	0.32	0.33	0.36	0.34	0.36	0.37	0.37	0.37	0.37	0.38	0.38	0.37	0.37	0.38	0.36	0.34	0.37	0.39	0.32	0.45	0.37	24	
17	0.38	\$	0.47	0.51	0.51	0.50	0.52	0.50	0.47	0.46	0.46	0.47	0.46	0.44	0.43	0.43	0.43	0.41	0.39	0.38	0.37	0.36	0.36	0.36	0.36	0.52	0.44	24	
18	\$	0.41	0.38	0.37	0.38	0.38	0.39	0.39	0.39	0.39	0.41	0.41	0.42	0.42	0.42	0.40	0.42	0.41	0.38	0.38	0.37	0.38	0.39	\$	0.37	0.42	0.40	24	
19	0.41	0.37	0.43	0.39	0.38	0.38	0.41	0.45	0.37	0.38	0.39	0.40	0.38	0.38	0.36	0.41	0.42	0.43	0.40	0.39	0.40	0.38	\$	0.42	0.36	0.45	0.40	24	
20	0.40	0.41	0.40	0.40	0.42	0.42	0.53	0.76	0.51	0.50	\$1	\$1	0.43	0.40	0.44	0.53	0.47	0.42	0.41	0.40	0.42	\$	0.44	0.40	0.40	0.76	0.45	22	
21	0.41	0.42	0.40	0.39	0.39	0.41	0.40	\$1	0.43	\$1	0.45	0.41	0.40	0.41	0.41	0.41	0.40	0.39	0.40	0.41	\$	0.46	0.45	0.44	0.39	0.46	0.41	22	
22	0.46	0.44	0.43	0.44	0.45	0.44	0.44	0.44	0.44	0.45	0.43	0.41	0.42	0.42	0.41	0.41	0.42	0.41	0.42	\$	0.46	0.47	0.45	0.43	0.41	0.47	0.43	24	
23	0.44	0.42	0.44	0.44	0.43	0.43	0.43	0.43	0.43	0.41	0.39	0.39	0.38	0.36	0.36	0.36	0.33	0.35	\$	0.37	0.36	0.35	0.35	0.36	0.33	0.44	0.39	24	
24	0.34	0.36	0.35	0.36	0.34	0.35	0.35	0.34	0.34	C1	C1	C1	C1	0.46	0.37	0.35	0.37	\$	0.39	0.36	0.36	0.36	0.35	0.36	0.34	0.46	0.36	20	
25	0.36	0.37	0.36	0.37	0.38	0.38	0.39	0.39	0.39	0.38	0.39	0.38	0.42	0.38	0.38	0.40	\$	0.44	0.41	0.39	0.42	0.40	0.41	0.40	0.36	0.44	0.39	24	
26	0.40	0.40	0.40	0.42	0.42	0.41	0.41	0.40	0.40	0.40	0.38	0.38	0.39	0.37	0.36	\$	0.39	0.37	0.38	0.39	0.38	0.40	0.39	0.40	0.36	0.42	0.39	24	
27	0.41	0.41	0.39	0.42	0.41	0.41	0.43	0.40	0.41	0.40	0.41	0.40	0.39	0.36	\$	0.38	0.36	0.36	0.34	0.35	0.40	0.41	0.43	0.37	0.34	0.43	0.39	24	
28	0.36	0.37	0.40	0.42	0.43	0.40	0.38	0.37	0.40	0.61	0.48	0.38	0.38	\$	0.37	0.36	0.37	0.38	0.44	0.39	0.40	0.89	0.83	0.55	0.36	0.89	0.45	24	
29	1.19	0.84	0.60	0.52	0.53	0.51	0.49	0.46	0.42	0.39	0.39	0.38	\$	0.39	0.37	0.37	0.36	0.36	0.37	0.35	0.36	0.36	0.39	0.40	0.35	1.19	0.47	24	
30	0.38	0.37	0.36	0.34	0.34	0.37	0.40	0.41	0.79	0.44	0.43	\$	0.41	0.38	0.39	0.38	0.37	0.39	0.40	0.40	0.38	0.39	0.43	0.45	0.34	0.79	0.41	24	
HOURLY MAX	1.19	0.84	0.60	0.52	0.53	0.51	0.53	0.76	0.79	0.61	0.48	0.47	0.46	0.48	0.46	0.53	0.47	0.44	0.47	0.47	0.46	0.89	0.83	0.55					
HOURLY AVG	0.42	0.41	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.42	0.41	0.40	0.40	0.39	0.39	0.39	0.39	0.38	0.39	0.38	0.38	0.40	0.41	0.40					

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

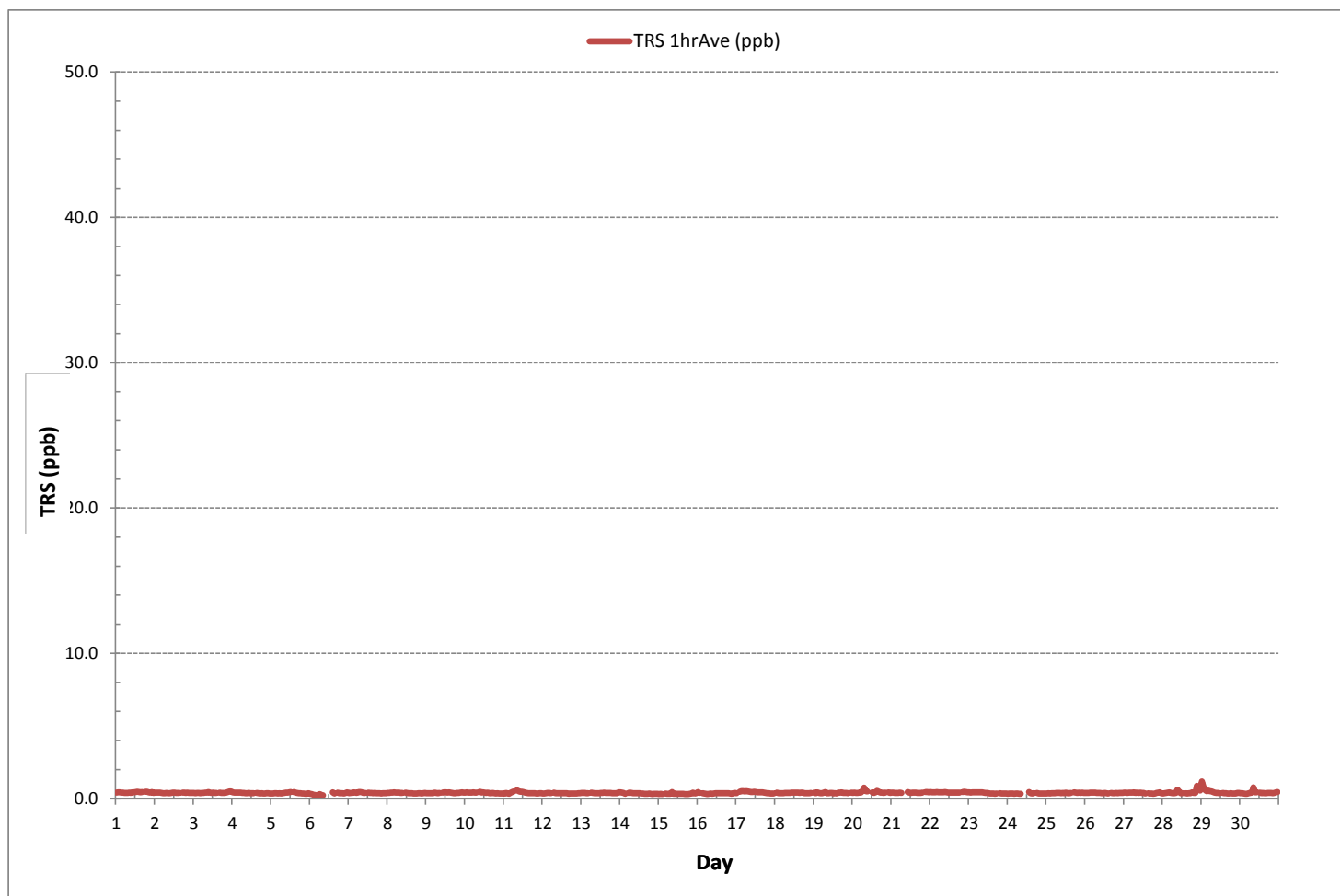
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676				
MINIMUM 1-HR AVERAGE:	0.23	ppb	@ HOUR	4	ON DAY(S)
MAXIMUM 1-HR AVERAGE:	1.19	ppb	@ HOUR	0	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.47	ppb			ON DAY(S)
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	711	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	98.8	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	0.40	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS 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	0.37	0.40	0.43	0.40	0.40	0.35	0.43	0.37	0.37	0.37	0.43	0.52	0.45	0.50	0.43	0.43	0.47	\$	0.47	0.50	0.48	0.48	0.43	0.43	0.43	0.35	0.52	0.43	24
2	0.43	0.40	0.40	0.43	0.43	0.37	0.37	0.37	0.37	0.40	0.40	0.43	0.43	0.43	0.40	\$	0.43	0.43	0.43	0.45	0.43	0.45	0.43	0.40	0.43	0.37	0.45	0.41	24
3	0.40	0.35	0.37	0.40	0.40	0.37	0.43	0.37	0.45	0.45	0.43	0.40	0.40	0.37	0.37	\$	0.43	0.37	0.37	0.37	0.48	0.43	0.50	0.52	0.35	0.52	0.41	24	
4	0.43	0.45	0.40	0.43	0.40	0.40	0.37	0.40	0.35	0.40	0.43	0.40	0.37	0.35	\$	0.40	0.37	0.37	0.35	0.37	0.35	0.37	0.40	0.35	0.35	0.45	0.39	24	
5	0.33	0.35	0.35	0.35	0.35	0.35	0.35	0.37	0.40	0.38	0.43	0.43	0.43	\$	0.50	0.43	0.43	0.40	0.47	0.40	0.40	0.40	0.45	0.48	0.33	0.50	0.40	24	
6	0.45	0.40	0.40	0.40	0.33	0.45	0.52	0.40	0.35	C	C	C	C	C	C	0.50	\$1	\$1	0.50	0.50	0.52	0.52	0.60	0.60	0.33	0.60	0.47	22	
7	0.48	0.50	0.52	0.55	0.55	0.52	0.52	0.58	0.50	0.50	0.52	\$	0.50	0.45	0.48	0.47	0.50	0.48	0.45	0.45	0.43	0.48	0.45	0.48	0.43	0.58	0.49	24	
8	0.48	0.50	0.50	0.50	0.50	0.52	0.52	0.47	0.52	0.47	\$	0.50	0.50	0.45	0.47	0.50	0.45	0.47	0.47	0.45	0.50	0.48	0.50	0.52	0.45	0.52	0.49	24	
9	0.47	0.50	0.47	0.52	0.49	0.55	0.55	0.52	0.52	\$	0.58	0.55	0.55	0.55	0.52	0.52	0.52	0.50	0.47	0.52	0.52	0.50	0.55	0.52	0.47	0.58	0.52	24	
10	0.55	0.55	0.52	0.52	0.52	0.55	0.52	0.52	\$	0.55	0.52	0.55	0.55	0.52	0.52	0.50	0.52	0.52	0.48	0.48	0.48	0.48	0.50	0.50	0.48	0.55	0.52	24	
11	0.52	0.58	0.50	0.48	0.60	0.58	0.68	\$	0.76	0.70	0.65	0.60	0.63	0.55	0.52	0.52	0.50	0.52	0.50	0.50	0.48	0.48	0.50	0.50	0.48	0.76	0.56	24	
12	0.50	0.49	0.50	0.50	0.52	0.47	\$	0.52	0.52	0.47	0.47	0.50	0.48	0.52	0.50	0.52	0.47	0.47	0.47	0.48	0.52	0.50	0.52	0.52	0.47	0.52	0.50	24	
13	0.52	0.52	0.50	0.52	0.50	\$	0.58	0.52	0.47	0.47	0.47	0.50	0.50	0.55	0.55	0.52	0.52	0.55	0.58	0.47	0.50	0.50	0.55	0.55	0.47	0.58	0.52	24	
14	0.60	0.52	0.52	0.50	\$	0.55	0.60	0.55	0.52	0.50	0.52	0.52	0.52	0.48	0.50	0.45	0.48	0.48	0.48	0.47	0.45	0.45	0.50	0.47	0.45	0.60	0.51	24	
15	0.45	0.47	0.47	\$	0.50	0.45	0.50	0.50	0.76	0.52	0.50	0.48	0.48	0.48	0.50	0.50	0.47	0.52	0.48	0.50	0.55	0.58	0.52	0.63	0.45	0.76	0.51	24	
16	0.68	0.65	\$	0.55	0.58	0.50	0.45	0.47	0.52	0.48	0.50	0.55	0.50	0.52	0.49	0.49	0.50	0.50	0.45	0.49	0.48	0.45	0.45	0.48	0.45	0.68	0.51	24	
17	0.45	\$	0.58	0.60	0.58	0.63	0.63	0.58	0.58	0.55	0.52	0.58	0.58	0.55	0.52	0.52	0.58	0.52	0.50	0.50	0.45	0.45	0.50	0.50	0.45	0.63	0.54	24	
18	\$	0.55	0.50	0.47	0.50	0.58	0.49	0.50	0.50	0.52	0.52	0.55	0.52	0.55	0.55	0.52	0.52	0.52	0.48	0.50	0.50	0.50	0.50	\$	0.47	0.58	0.52	24	
19	0.52	0.52	0.60	0.52	0.52	0.55	0.60	0.63	0.50	0.50	0.52	0.55	0.58	0.55	0.50	0.60	0.60	0.58	0.55	0.58	0.60	0.58	\$	0.60	0.50	0.63	0.56	24	
20	0.55	0.55	0.52	0.58	0.60	0.58	0.81	1.13	0.65	0.63	\$1	\$1	0.55	0.52	0.58	0.68	0.63	0.58	0.52	0.58	0.55	\$	0.63	0.55	0.52	1.13	0.62	22	
21	0.63	0.60	0.58	0.55	0.60	0.63	0.58	\$1	0.65	\$1	0.68	0.58	0.55	0.55	0.60	0.52	0.55	0.52	0.55	0.55	\$	0.60	0.60	0.58	0.52	0.68	0.58	22	
22	0.60	0.58	0.58	0.55	0.58	0.58	0.60	0.58	0.63	0.58	0.55	0.55	0.52	0.55	0.52	0.52	0.52	0.55	0.52	\$	0.58	0.63	0.60	0.55	0.52	0.63	0.57	24	
23	0.55	0.55	0.58	0.55	0.58	0.58	0.60	0.58	0.60	0.58	0.58	0.55	0.58	0.52	0.55	0.52	0.52	0.52	\$	0.60	0.60	0.55	0.58	0.55	0.52	0.60	0.56	24	
24	0.52	0.58	0.55	0.55	0.52	0.55	0.52	0.50	0.52	C1	C1	C1	C1	C1	0.58	0.58	0.55	\$	0.60	0.55	0.55	0.58	0.55	0.55	0.50	0.60	0.55	19	
25	0.58	0.58	0.55	0.55	0.57	0.58	0.55	0.63	0.58	0.52	0.55	0.55	0.58	0.58	0.58	0.60	\$	0.65	0.58	0.63	0.58	0.58	0.58	0.55	0.52	0.65	0.58	24	
26	0.60	0.58	0.58	0.58	0.58	0.60	0.58	0.55	0.61	0.55	0.55	0.55	0.52	0.52	0.52	\$	0.63	0.55	0.55	0.55	0.55	0.60	0.58	0.55	0.52	0.63	0.57	24	
27	0.63	0.60	0.55	0.60	0.58	0.58	0.60	0.58	0.60	0.60	0.58	0.60	0.60	0.55	\$	0.60	0.55	0.50	0.50	0.50	0.60	0.63	0.65	0.55	0.50	0.65	0.58	24	
28	0.52	0.58	0.58	0.60	0.63	0.68	0.58	0.63	0.65	0.84	0.71	0.58	0.58	\$	0.52	0.55	0.52	0.58	0.73	0.55	0.63	1.55	1.18	1.42	0.52	1.55	0.71	24	
29	1.50	1.28	0.86	0.71	0.73	0.68	0.65	0.63	0.58	0.52	0.58	0.52	\$	0.52	0.50	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.58	0.55	0.50	1.50	0.65	24	
30	0.52	0.55	0.52	0.50	0.55	0.55	0.60	0.73	1.23	0.65	0.60	\$	0.60	0.52	0.52	0.55	0.55	0.52	0.55	0.58	0.55	0.60	0.65	0.65	0.50	1.23	0.60	24	
HOURLY MAX	1.50	1.28	0.86	0.71	0.73	0.68	0.81	1.13	1.23	0.84	0.71	0.60	0.63	0.58	0.60	0.68	0.63	0.65	0.73	0.63	0.63	1.55	1.18	1.42					
HOURLY AVG	0.55	0.54	0.52	0.52	0.52	0.53	0.54	0.54	0.56	0.53	0.53	0.52	0.52	0.51	0.51	0.52	0.51	0.51	0.50	0.50	0.51	0.54	0.55	0.56					

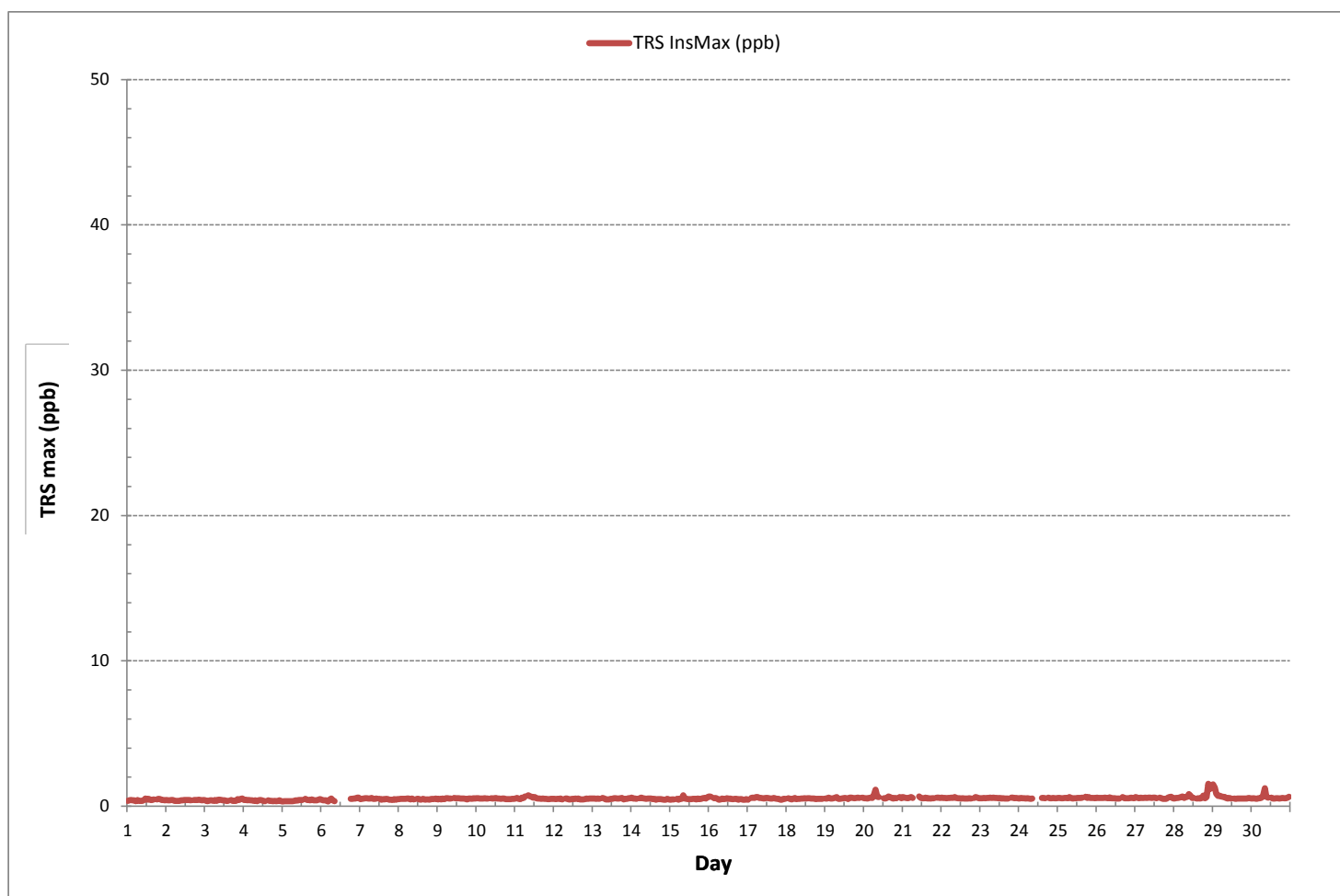
STATUS FLAG CODES

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:	673				
MAXIMUM INSTANTANEOUS VALUE:	1.55	ppb	@ HOUR	21	ON DAY(S) 28
12S CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	709	hrs
MONTHLY CALIBRATION TIME:	6	hrs			
STANDARD DEVIATION:	0.11				

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

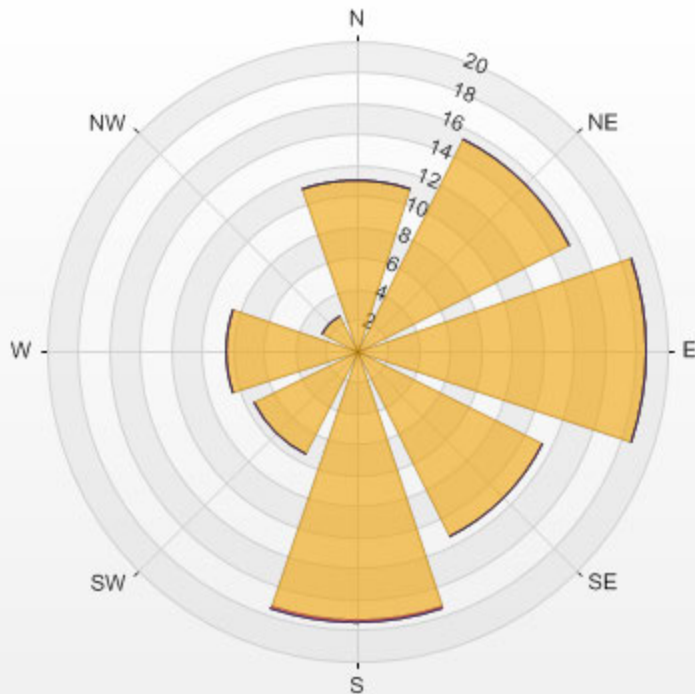
Calm: 5.51%

Calm Avg: 0.38 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	11.0	0.0	0.0	0.0	11.0
NE	15.3	0.0	0.0	0.0	15.3
E	18.8	0.0	0.0	0.0	18.8
SE	13.4	0.0	0.0	0.0	13.4
S	17.4	0.2	0.0	0.0	17.6
SW	7.4	0.0	0.0	0.0	7.4
W	8.5	0.0	0.0	0.0	8.5
NW	2.5	0.0	0.0	0.0	2.5
Summary	94.3	0.2	0.0	0.0	94.5

% Icon	Classes (ppb)	94	0	0	0
	0-1	0-1	1-3	3-10	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.51% Calm Poll Avg: 0.38[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 2017/04 Type: Span



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

TOTAL HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

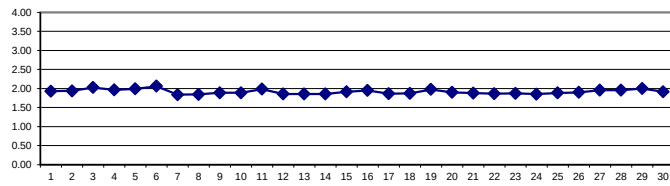
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	24
2	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.93	1.95	1.94	1.94	1.94	1.93	1.93	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.95	1.94	24
3	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.94	2.30	2.37	2.64	2.26	1.94	2.64	2.02	24	
4	2.03	1.96	1.96	1.97	1.98	2.03	2.02	1.96	1.94	1.93	1.93	1.93	1.93	1.93	S	1.94	1.95	1.95	1.95	1.93	1.94	1.99	1.99	1.96	1.93	2.03	1.96	24	
5	1.95	1.95	1.94	1.95	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.97	1.98	S	1.99	1.97	1.97	2.00	1.99	2.00	2.03	2.03	2.03	2.33	1.94	2.33	1.99	24	
6	2.13	1.97	1.95	1.97	1.94	2.17	3.37	2.44	1.94	1.93	1.93	1.93	1.94	C	C	C	C	1.83	1.84	1.89	2.01	1.84	2.09	2.09	1.83	3.37	2.06	24	
7	1.86	1.85	1.84	1.87	1.83	1.83	1.84	1.84	1.83	1.83	1.82	S	1.84	1.83	1.83	1.83	1.84	1.83	1.83	1.83	1.83	1.83	1.83	1.84	1.82	1.87	1.84	24	
8	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	S	1.84	1.84	1.84	1.85	1.85	1.86	1.86	1.84	1.84	1.85	1.85	1.85	1.84	1.86	1.84	24	
9	1.85	1.87	1.91	1.90	1.89	1.96	1.88	1.88	1.87	S	1.86	1.86	1.86	1.87	1.86	1.88	1.89	1.89	1.90	1.89	1.90	1.90	1.92	1.89	1.85	1.96	1.89	24	
10	1.94	1.95	1.89	1.88	1.89	1.89	1.90	1.90	S	1.91	1.92	1.90	1.90	1.89	1.88	1.88	1.87	1.86	1.85	1.84	1.85	1.85	1.86	1.90	1.84	1.95	1.89	24	
11	2.09	3.11	2.82	2.03	1.87	1.87	1.87	1.87	S	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.89	1.88	1.88	1.87	1.86	1.86	1.86	1.86	1.86	3.11	1.98	24	
12	1.86	1.86	1.86	1.86	1.86	1.87	S	1.87	1.86	1.86	1.86	1.85	1.85	1.85	1.86	1.87	1.88	1.87	1.85	1.85	1.85	1.85	1.85	1.86	1.85	1.88	1.86	24	
13	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	24	
14	1.85	1.85	1.85	1.85	S	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.85	24	
15	1.85	1.84	1.85	S	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.93	1.85	1.85	1.85	1.95	2.35	2.35	1.95	2.00	1.84	2.35	1.91	24	
16	2.07	1.97	S	1.89	1.95	1.89	1.88	1.88	1.89	1.88	1.89	1.87	1.90	1.92	1.93	1.89	1.91	1.90	1.90	1.90	1.98	1.96	1.88	2.63	1.87	2.63	1.95	24	
17	1.95	S	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.85	1.95	1.86	24	
18	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	S	1.86	1.88	1.87	24	
19	1.87	1.88	1.87	1.87	1.87	1.87	2.88	2.87	1.90	1.89	1.88	1.87	1.88	1.87	1.88	X	1.88	1.90	1.91	1.90	1.92	1.91	S	1.87	1.87	2.88	1.97	23	
20	1.87	1.87	1.92	1.90	1.96	1.92	2.12	1.96	1.95	1.91	1.90	1.90	1.88	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	S	1.86	1.87	1.86	2.12	1.90	24	
21	1.87	1.88	1.87	1.87	1.87	1.90	1.87	1.87	1.87	1.87	1.88	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.87	1.87	S	1.95	1.93	1.88	1.86	1.95	1.88	24	
22	1.87	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.86	24	
23	1.87	1.87	1.89	1.90	1.91	1.88	1.87	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.91	1.87	24	
24	1.86	1.85	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.84	1.85	1.83	1.84	1.85	1.85	1.85	S	1.85	1.85	1.85	1.85	1.86	1.87	1.83	1.87	1.85	24	
25	1.87	1.96	1.93	1.89	1.89	1.88	1.88	1.87	1.86	1.85	1.86	1.86	1.86	1.87	1.87	1.87	S	1.87	1.89	1.87	1.90	1.92	1.91	1.90	1.85	1.96	1.88	24	
26	1.90	1.90	1.90	2.01	2.02	1.98	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	S	1.87	1.87	1.88	1.87	1.91	1.91	1.87	1.88	1.87	2.02	1.90	24	
27	1.88	1.89	1.88	1.96	2.02	1.97	2.01	1.89	1.89	1.89	1.89	1.89	1.89	1.88	S	1.90	1.89	1.89	1.88	1.88	2.12	2.47	2.23	1.91	1.88	2.47	1.96	24	
28	1.94	1.97	2.32	2.37	2.10	1.97	1.90	1.89	1.89	1.89	1.89	1.90	1.90	S	1.88	1.88	1.88	1.91	1.90	1.95	1.87	1.87	1.96	1.87	1.87	2.37	1.95	24	
29	2.24	2.53	3.00	2.21	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.85	S	1.85	1.86	1.87	1.88	1.86	1.87	1.87	1.89	1.89	2.05	2.06	1.85	3.00	2.00	24	
30	2.04	1.96	2.01	2.03	1.88	2.11	2.02	1.86	1.88	1.86	1.86	S	1.87	1.87	1.86	1.86	1.86	1.86	1.85	1.84	1.86	1.94	2.00	1.86	1.84	2.11	1.91	24	
HOURLY MAX	2.24	3.11	3.00	2.37	2.10	2.17	3.37	2.87	1.96	1.96	1.96	1.97	1.98	1.94	1.99	1.97	1.97	2.00	1.99	2.00	2.35	2.47	2.64	2.63					
HOURLY AVG	1.93	1.97	1.98	1.94	1.91	1.92	1.99	1.94	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.93	1.94	1.95	1.95					

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

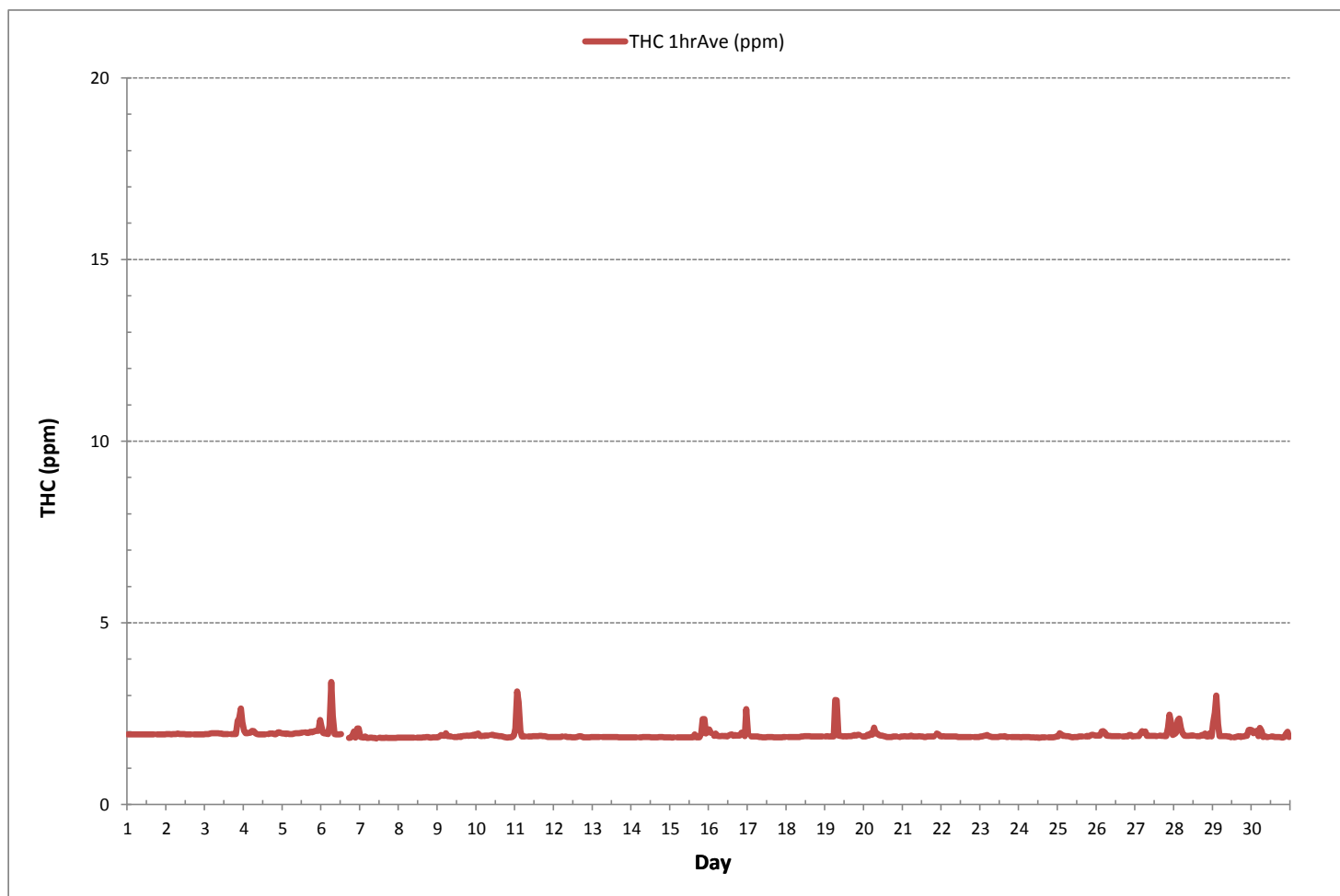
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685				
MINIMUM 1-HR AVERAGE:	1.82	ppm	@ HOUR	10	ON DAY(S) 7
MAXIMUM 1-HR AVERAGE:	3.37	ppm	@ HOUR	6	ON DAY(S) 6
MAXIMUM 24-HR AVERAGE:	2.06	ppm			ON DAY(S) 6
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	719	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	1.91	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

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	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.95	24
2	1.98	1.96	1.96	1.95	1.95	1.96	1.96	1.97	1.97	1.96	1.95	1.99	1.95	1.95	1.95	1.95	S	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.94	1.99	1.96	24
3	1.98	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.99	1.97	1.96	1.96	1.96	1.97	1.95	S	1.96	1.96	1.96	1.96	3.55	3.55	3.24	2.57	1.95	3.55	2.19	24
4	2.40	1.98	1.98	1.98	2.02	2.14	2.05	2.02	1.96	1.95	1.95	1.95	1.95	1.95	S	1.96	1.97	1.97	1.97	1.96	1.98	2.07	2.05	2.03	1.95	2.40	2.01	24
5	1.99	1.99	1.96	2.01	1.96	1.97	1.96	1.98	2.00	2.02	2.01	2.03	2.07	S	2.09	2.06	1.99	2.09	2.10	2.20	2.16	2.16	2.21	3.00	1.96	3.00	2.09	24
6	2.80	1.99	1.98	2.23	2.03	3.65	5.98	3.94	1.95	P	1.95	1.95	1.96	C	C	C	C	1.92	1.89	2.10	2.60	1.91	2.67	2.56	1.89	5.98	2.53	23
7	2.01	1.92	1.87	2.21	1.85	1.85	1.90	1.88	1.86	1.85	1.84	S	1.94	1.93	1.90	1.86	1.86	1.86	1.85	1.85	1.85	1.86	1.86	1.86	1.84	2.21	1.89	24
8	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	S	1.89	1.88	1.87	1.87	1.87	1.88	1.88	1.88	1.87	1.86	1.87	1.87	1.87	1.86	1.89	1.87	24
9	1.87	1.94	1.97	1.97	1.98	2.03	1.97	1.90	1.90	S	1.97	1.94	1.91	1.97	1.95	1.95	1.96	1.95	1.95	1.98	1.98	2.05	2.02	2.00	1.87	2.05	1.96	24
10	2.12	2.16	2.00	1.90	1.97	2.02	2.05	1.97	S	1.99	1.98	1.95	1.94	1.96	1.92	1.91	1.90	1.90	1.92	1.87	1.87	1.87	1.91	1.93	1.87	2.16	1.96	24
11	3.66	4.79	4.79	2.63	1.90	1.90	1.89	S	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.91	1.90	1.91	1.90	1.90	1.88	1.88	1.88	1.88	1.88	4.79	2.26	24
12	1.88	1.88	1.88	1.88	1.88	1.89	S	1.89	1.89	1.88	1.89	1.88	1.87	1.87	1.89	1.92	1.93	1.91	1.88	1.87	1.87	1.87	1.87	1.88	1.87	1.93	1.88	24
13	1.88	1.88	1.89	1.89	1.88	S	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.89	1.88	24
14	1.87	1.88	1.87	1.87	S	1.88	1.88	1.88	1.88	1.89	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.89	1.88	24
15	1.87	1.87	1.87	S	1.87	1.87	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.92	2.18	1.87	1.87	1.91	2.35	2.97	3.16	2.12	2.24	1.87	3.16	2.04	24
16	2.34	2.38	S	2.05	2.18	2.02	2.02	1.98	2.00	1.99	1.99	1.89	2.07	2.02	2.02	1.99	2.01	1.96	1.94	1.94	2.11	2.10	1.91	4.42	1.89	4.42	2.14	24
17	2.27	S	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.88	1.87	1.88	1.88	1.88	1.87	2.27	1.90	24
18	S	1.89	1.89	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	S	1.88	1.90	1.89	24
19	1.89	1.90	1.89	1.89	1.89	1.89	4.83	4.29	2.03	1.96	1.90	1.90	1.94	1.90	1.94	X	1.92	1.97	1.98	1.99	2.16	2.03	S	1.90	1.89	4.83	2.18	23
20	1.91	1.90	2.30	1.95	2.71	2.00	2.70	2.17	2.04	1.93	1.92	1.93	1.91	1.90	1.88	1.89	1.89	1.88	1.89	1.89	1.89	S	1.89	1.89	1.88	2.71	2.01	24
21	1.89	1.91	1.90	1.91	1.89	1.96	1.90	1.89	1.95	1.96	1.93	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	S	2.15	2.07	1.90	1.89	2.15	1.92	24
22	1.90	1.90	1.89	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.89	1.89	1.88	1.88	S	1.88	1.88	1.88	1.88	1.88	1.88	1.90	1.89	24
23	1.89	1.90	1.96	1.95	1.95	1.93	1.89	1.88	1.88	1.88	1.88	1.88	1.89	1.91	1.91	1.90	1.92	1.89	1.89	S	1.88	1.88	1.88	1.88	1.88	1.96	1.90	24
24	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.86	1.87	1.87	1.87	1.87	S	1.87	1.87	1.88	1.88	1.95	1.90	1.86	1.95	1.88	24
25	1.93	2.07	1.98	1.92	1.95	1.90	1.90	1.89	1.88	1.87	1.90	1.92	1.91	1.93	1.95	1.92	S	1.94	1.95	1.91	1.93	2.03	1.95	1.92	1.87	2.07	1.93	24
26	1.92	1.92	1.96	2.07	2.06	2.06	1.95	1.91	1.92	1.90	1.91	1.92	1.91	1.92	1.91	S	1.93	1.90	1.94	1.91	1.95	1.95	1.90	1.92	1.90	2.07	1.94	24
27	1.90	1.92	1.90	2.07	2.14	2.11	2.17	1.91	1.95	1.96	1.95	2.00	1.92	1.91	S	1.92	1.91	1.91	1.90	1.91	2.27	5.60	2.56	1.96	1.90	5.60	2.16	24
28	2.08	2.26	3.16	2.81	2.37	2.28	2.01	1.92	1.93	1.93	1.95	1.95	1.97	S	1.91	1.93	1.94	2.01	2.09	2.06	1.97	1.98	2.31	2.06	1.91	3.16	2.13	24
29	2.74	3.89	4.90	4.38	1.90	1.91	1.90	1.91	1.90	1.90	1.89	1.88	S	1.87	1.88	1.93	1.96	1.90	1.93	1.94	2.01	2.04	2.13	2.13	1.87	4.90	2.30	24
30	2.11	2.20	2.14	2.85	2.05	3.14	2.37	1.94	2.01	1.88	1.88	S	1.89	1.89	1.88	1.89	1.88	1.88	1.88	1.90	1.91	2.66	2.41	1.89	1.88	3.14	2.11	24
HOURLY MAX	3.66	4.79	4.90	4.38	2.71	3.65	5.98	4.29	2.04	2.02	2.01	2.03	2.07	2.02	2.09	2.18	2.01	2.09	2.10	2.35	3.55	5.60	3.24	4.42				
HOURLY AVG	2.10	2.14	2.19	2.13	1.99	2.06	2.22	2.08	1.93	1.92	1.92	1.92	1.92	1.91	1.92	1.93	1.91	1.92	1.92	1.95	2.06	2.20	2.07	2.10				

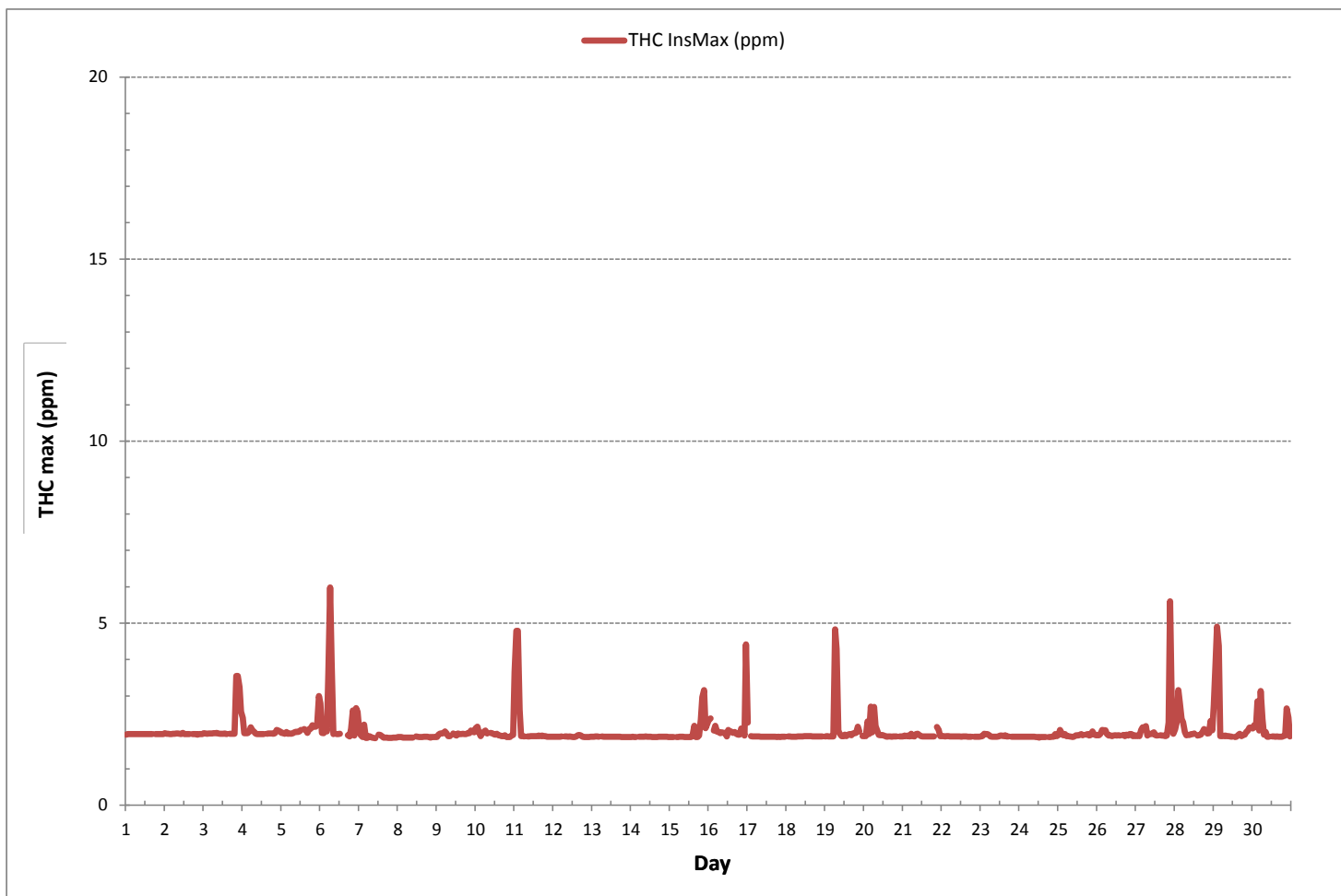
STATUS FLAG CODES

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:	684				
MAXIMUM INSTANTANEOUS VALUE:	5.98	ppm	@ HOUR	6	ON DAY(S) 6
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	718	hrs
MONTHLY CALIBRATION TIME:	4	hrs			
STANDARD DEVIATION:	0.41				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

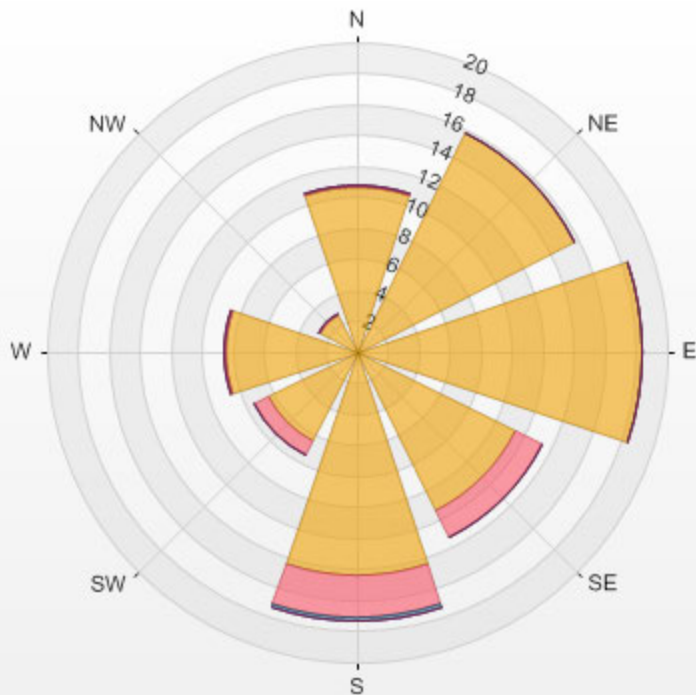
Calm: 5.40%

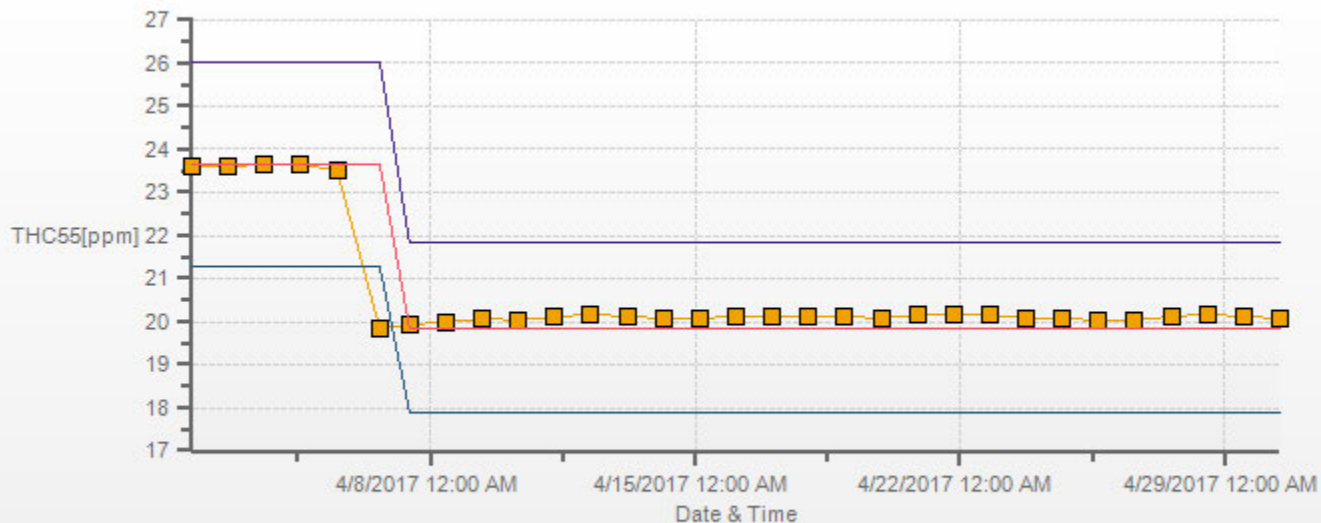
Calm Avg: 2.05 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	10.7	0.2	0.0	0.0	0.0	10.8
NE	15.8	0.0	0.0	0.0	0.0	15.8
E	18.4	0.0	0.0	0.0	0.0	18.4
SE	11.5	1.9	0.0	0.0	0.0	13.4
S	14.5	2.8	0.2	0.0	0.0	17.4
SW	6.4	1.0	0.0	0.0	0.0	7.4
W	8.5	0.2	0.0	0.0	0.0	8.6
NW	2.6	0.2	0.0	0.0	0.0	2.8
Summary	88.3	6.1	0.2	0.0	0.0	94.6

% Icon	Classes (ppm)
88	0-2
6	2-3
0	3-5
0	5-10
0	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.40% Calm Poll Avg: 2.05[ppm]





Span Meas Span Ref Span Low Span High

METHANE

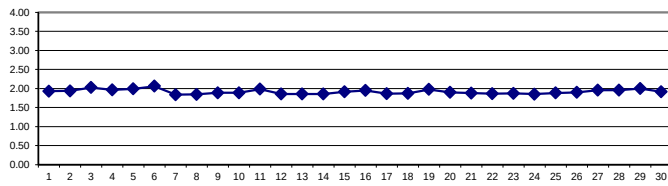
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	24	
2	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.95	1.94	24
3	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.94	2.30	2.37	2.64	2.26	1.94	2.64	2.02	24	
4	2.03	1.96	1.96	1.97	1.98	2.03	2.02	1.96	1.94	1.93	1.93	1.93	1.93	1.93	S	1.94	1.95	1.95	1.95	1.93	1.94	1.99	1.99	1.96	1.93	2.03	1.96	24	
5	1.95	1.95	1.94	1.95	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.97	1.98	S	1.99	1.97	1.97	2.00	1.99	2.00	2.03	2.03	2.03	2.33	1.94	2.33	1.99	24	
6	2.13	1.97	1.95	1.97	1.94	2.17	3.37	2.44	1.94	1.93	1.93	1.93	1.94	C	C	C	C	1.83	1.84	1.89	2.01	1.84	2.09	2.09	1.83	3.37	2.06	24	
7	1.86	1.85	1.84	1.87	1.83	1.83	1.84	1.84	1.83	1.83	1.82	S	1.84	1.83	1.83	1.83	1.84	1.83	1.83	1.83	1.83	1.83	1.83	1.84	1.82	1.87	1.84	24	
8	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	S	1.84	1.84	1.84	1.84	1.85	1.85	1.86	1.86	1.84	1.84	1.85	1.85	1.85	1.84	1.86	1.84	24	
9	1.85	1.87	1.91	1.90	1.89	1.96	1.88	1.88	1.87	S	1.86	1.86	1.86	1.87	1.86	1.88	1.89	1.89	1.90	1.89	1.90	1.90	1.92	1.89	1.85	1.96	1.89	24	
10	1.94	1.95	1.89	1.88	1.89	1.89	1.90	1.90	S	1.91	1.92	1.90	1.90	1.89	1.88	1.88	1.87	1.86	1.85	1.84	1.85	1.85	1.86	1.90	1.84	1.95	1.89	24	
11	2.09	3.11	2.82	2.03	1.87	1.87	1.87	S	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.88	1.88	1.87	1.86	1.86	1.86	1.86	1.86	1.86	3.11	1.98	24	
12	1.86	1.86	1.86	1.86	1.86	1.87	S	1.87	1.86	1.86	1.86	1.86	1.85	1.85	1.86	1.87	1.88	1.87	1.85	1.85	1.85	1.85	1.85	1.86	1.85	1.88	1.86	24	
13	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	24	
14	1.85	1.85	1.85	1.85	S	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.85	24	
15	1.85	1.84	1.85	S	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.93	1.85	1.85	1.85	1.95	2.35	2.35	1.95	2.00	1.84	2.35	1.91	24	
16	2.07	1.96	S	1.89	1.95	1.89	1.88	1.88	1.89	1.88	1.89	1.87	1.90	1.92	1.93	1.89	1.91	1.90	1.90	1.90	1.98	1.96	1.88	2.63	1.87	2.63	1.95	24	
17	1.95	S	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.85	1.95	1.86	24	
18	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	S	1.86	1.88	1.87	24	
19	1.87	1.88	1.87	1.87	1.87	1.87	2.88	2.87	1.90	1.89	1.88	1.87	1.88	1.87	1.88	X	1.88	1.90	1.91	1.90	1.92	1.91	S	1.87	1.87	2.88	1.97	23	
20	1.87	1.87	1.92	1.90	1.93	1.92	2.12	1.96	1.95	1.91	1.90	1.90	1.88	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	S	1.86	1.87	1.86	2.12	1.90	24
21	1.87	1.88	1.87	1.87	1.87	1.90	1.87	1.87	1.87	1.87	1.88	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.87	1.87	S	S	1.95	1.93	1.88	1.86	1.95	1.88	24
22	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	S	1.86	1.86	1.86	1.86	1.86	1.87	1.86	24	
23	1.87	1.87	1.89	1.90	1.91	1.88	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.86	S	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.91	1.87	24	
24	1.86	1.85	1.86	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.84	1.85	1.83	1.84	1.85	1.85	1.85	S	1.85	1.85	1.85	1.85	1.86	1.87	1.83	1.87	1.85	24	
25	1.87	1.96	1.93	1.89	1.89	1.88	1.88	1.87	1.86	1.85	1.86	1.86	1.86	1.87	1.87	S	1.87	1.89	1.87	1.89	1.92	1.91	1.90	1.85	1.96	1.88	24		
26	1.90	1.90	1.90	2.01	2.02	1.98	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	S	1.87	1.87	1.88	1.87	1.91	1.91	1.87	1.88	1.87	2.02	1.90	24		
27	1.88	1.89	1.88	1.96	2.02	1.97	2.01	1.89	1.89	1.89	1.89	1.89	1.89	1.88	S	1.90	1.89	1.89	1.88	1.88	2.12	2.47	2.23	1.91	1.88	2.47	1.96	24	
28	1.94	1.97	2.32	2.37	2.10	1.97	1.90	1.89	1.89	1.89	1.90	1.90	S	1.88	1.88	1.88	1.88	1.91	1.90	1.95	1.87	1.87	1.96	1.87	1.87	2.37	1.95	24	
29	2.24	2.53	3.00	2.21	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.85	S	1.85	1.86	1.87	1.87	1.86	1.87	1.87	1.89	1.89	2.05	2.06	1.85	3.00	2.00	24	
30	2.04	1.96	2.01	2.03	1.88	2.11	2.02	1.86	1.88	1.86	1.86	S	1.87	1.87	1.86	1.86	1.86	1.86	1.85	1.84	1.86	1.94	2.00	1.86	1.84	2.11	1.91	24	
HOURLY MAX	2.24	3.11	3.00	2.37	2.10	2.17	3.37	2.87	1.96	1.96	1.96	1.97	1.98	1.94	1.99	1.97	1.97	2.00	1.99	2.00	2.35	2.47	2.64	2.63					
HOURLY AVG	1.93	1.96	1.98	1.94	1.91	1.92	1.99	1.94	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.93	1.94	1.95	1.95					

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

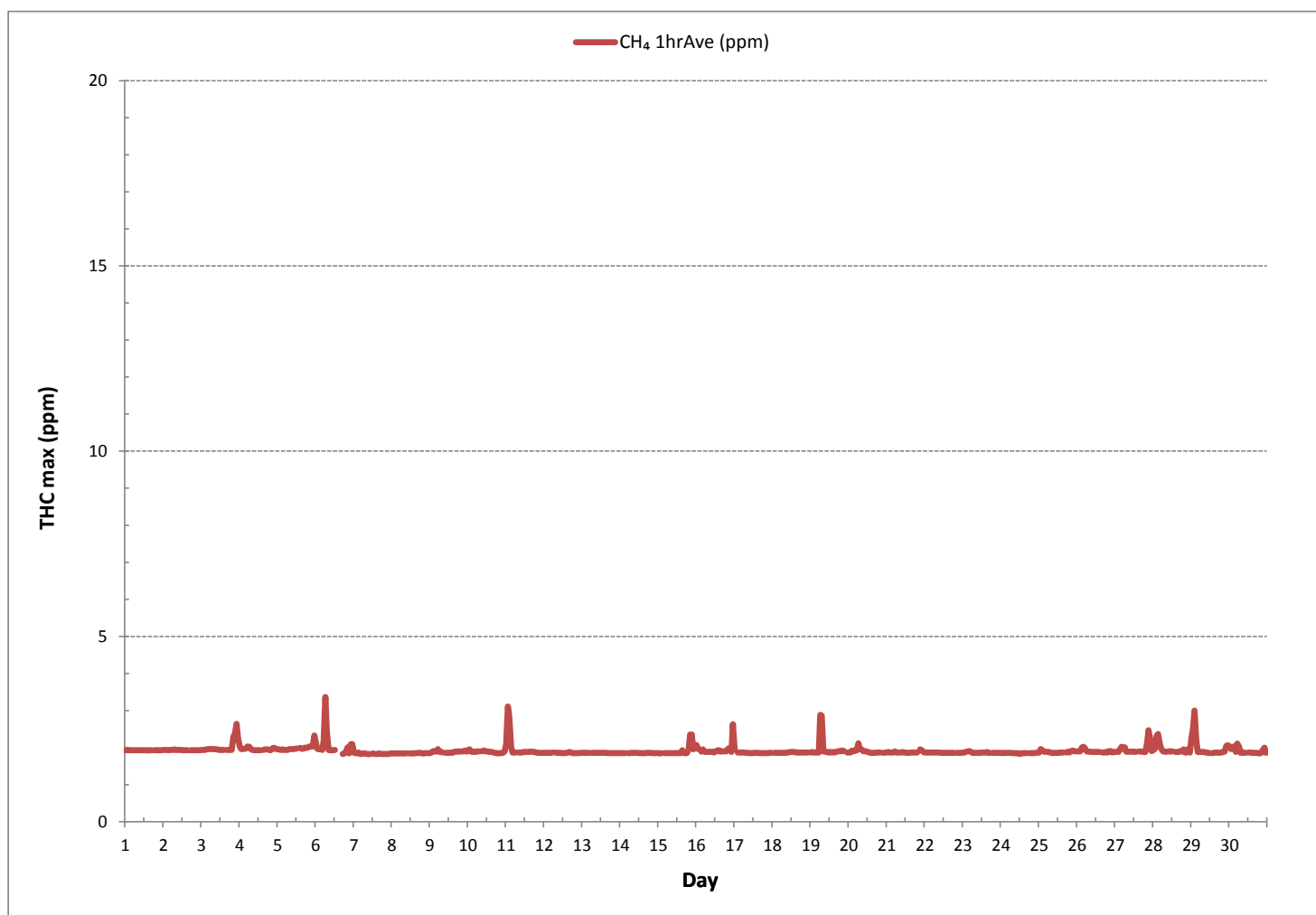
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685				
MINIMUM 1-HR AVERAGE:	1.82	ppm	@ HOUR	10	ON DAY(S)
MAXIMUM 1-HR AVERAGE:	3.37	ppm	@ HOUR	6	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.06	ppm			ON DAY(S)
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	719	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	1.91	ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	1.93	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	1.94	1.94	1.94	1.94	1.94	1.94	\$	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.94	24	
2	1.97	1.96	1.96	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.95	\$	1.93	1.94	1.93	1.94	1.94	1.94	1.95	1.94	1.93	1.97	1.95	24
3	1.97	1.97	1.95	1.96	1.97	1.97	1.97	1.97	1.98	1.97	1.96	1.95	1.96	1.96	1.94	\$	1.95	1.95	1.95	1.95	3.55	3.55	3.23	2.56	1.94	3.55	2.18	24	
4	2.40	1.97	1.98	1.98	2.01	2.13	2.05	2.01	1.95	1.94	1.94	1.94	1.95	1.95	\$	1.96	1.96	1.96	1.96	1.95	1.97	2.07	2.05	2.02	1.94	2.40	2.00	24	
5	1.99	1.98	1.95	2.00	1.96	1.96	1.96	1.97	1.99	2.01	2.01	2.03	2.07	\$	2.08	2.05	1.99	2.08	2.09	2.19	2.16	2.15	2.21	2.99	1.95	2.99	2.08	24	
6	2.79	1.98	1.97	2.22	2.02	3.66	5.97	3.94	1.94	\$	1.94	1.95	1.95	C	C	C	C	1.91	1.88	2.09	2.59	1.89	2.66	2.56	1.88	5.97	2.52	24	
7	2.00	1.91	1.86	2.20	1.83	1.84	1.89	1.87	1.84	1.83	1.83	\$	1.93	1.92	1.89	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.83	2.20	1.88	24	
8	1.85	1.85	1.85	1.85	1.85	1.85	1.84	1.84	1.85	1.85	\$	1.88	1.87	1.85	1.85	1.86	1.87	1.87	1.87	1.86	1.85	1.85	1.86	1.86	1.84	1.88	1.86	24	
9	1.86	1.93	1.97	1.96	1.98	2.02	1.96	1.89	1.88	\$	1.97	1.93	1.90	1.96	1.94	1.94	1.95	1.94	1.94	1.98	1.98	2.05	2.02	2.00	1.86	2.05	1.95	24	
10	2.12	2.15	1.99	1.89	1.96	2.02	2.05	1.97	\$	1.99	1.98	1.94	1.93	1.95	1.91	1.90	1.89	1.89	1.91	1.85	1.86	1.86	1.90	1.92	1.85	2.15	1.95	24	
11	3.66	4.78	4.77	2.62	1.89	1.89	1.88	\$	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.87	1.87	1.87	1.87	4.78	2.25	24	
12	1.87	1.87	1.87	1.87	1.87	1.88	\$	1.88	1.88	1.87	1.88	1.87	1.86	1.86	1.88	1.91	1.92	1.90	1.87	1.86	1.86	1.86	1.86	1.87	1.86	1.92	1.87	24	
13	1.87	1.87	1.87	1.88	1.87	\$	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.88	1.87	24	
14	1.86	1.87	1.86	1.86	\$	1.87	1.87	1.87	1.87	1.88	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.86	1.87	1.86	1.86	1.88	1.87	24	
15	1.86	1.85	1.86	\$	1.86	1.86	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.91	2.18	1.86	1.86	1.90	2.34	2.97	3.16	2.12	2.23	1.85	3.16	2.03	24	
16	2.33	2.38	\$	2.05	2.17	2.01	2.02	1.98	1.99	1.98	1.98	1.88	2.07	2.01	2.01	1.98	2.01	1.96	1.93	1.93	2.10	2.09	1.90	4.41	1.88	4.41	2.14	24	
17	2.27	\$	1.89	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.86	2.27	1.89	24	
18	\$	1.87	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	\$	1.87	1.89	1.88	24	
19	1.88	1.89	1.88	1.88	1.88	1.88	4.81	4.28	2.02	1.95	1.89	1.88	1.93	1.89	1.93	X	1.91	1.97	1.98	1.98	2.15	2.01	\$	1.89	1.88	4.81	2.17	23	
20	1.89	1.89	2.29	1.95	2.19	2.00	2.69	2.16	2.03	1.92	1.91	1.92	1.89	1.89	1.87	1.88	1.88	1.87	1.88	1.88	1.88	\$	1.87	1.88	1.87	2.69	1.98	24	
21	1.88	1.90	1.89	1.90	1.88	1.96	1.89	1.88	1.94	1.96	1.92	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	\$	2.14	2.07	1.89	1.88	2.14	1.91	24	
22	1.89	1.89	1.88	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.88	1.87	1.87	1.87	\$	1.87	1.87	1.87	1.87	1.87	1.89	1.88	24	
23	1.88	1.89	1.95	1.94	1.94	1.92	1.88	1.87	1.87	1.87	1.87	1.88	1.89	1.90	1.89	1.91	1.88	1.88	\$	1.87	1.87	1.87	1.87	1.87	1.87	1.95	1.89	24	
24	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.85	1.86	1.85	1.85	1.85	1.85	1.86	\$	1.86	1.86	1.87	1.87	1.95	1.89	1.85	1.95	1.87	24	
25	1.92	2.07	1.97	1.91	1.94	1.89	1.89	1.88	1.87	1.86	1.88	1.91	1.90	1.92	1.94	1.91	\$	1.93	1.95	1.90	1.92	2.02	1.94	1.91	1.86	2.07	1.92	24	
26	1.91	1.91	1.95	2.07	2.06	2.06	1.94	1.90	1.91	1.89	1.90	1.91	1.90	1.91	1.90	\$	1.92	1.89	1.93	1.90	1.95	1.94	1.89	1.91	1.89	2.07	1.93	24	
27	1.89	1.91	1.89	2.07	2.13	2.10	2.16	1.90	1.94	1.95	1.94	1.99	1.91	1.90	\$	1.91	1.90	1.90	1.89	1.90	2.26	5.59	2.56	1.95	1.89	5.59	2.15	24	
28	2.08	2.25	3.15	2.80	2.36	2.27	2.00	1.91	1.92	1.92	1.94	1.95	1.96	\$	1.90	1.89	1.93	2.00	2.08	2.05	1.96	1.97	2.30	2.06	1.89	3.15	2.12	24	
29	2.73	3.88	4.89	4.38	1.89	1.90	1.89	1.90	1.89	1.89	1.88	1.87	\$	1.86	1.87	1.92	1.96	1.89	1.92	1.93	2.01	2.03	2.12	2.12	1.86	4.89	2.29	24	
30	2.10	2.19	2.13	2.84	2.05	3.13	2.36	1.93	2.01	1.87	1.87	\$	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.90	2.65	2.40	1.88	1.87	3.13	2.10	24	
HOURLY MAX	3.66	4.78	4.89	4.38	2.36	3.66	5.97	4.28	2.03	2.01	2.01	2.03	2.07	2.01	2.08	2.18	2.01	2.08	2.09	2.34	3.55	5.59	3.23	4.41					
HOURLY AVG	2.09	2.13	2.18	2.12	1.96	2.05	2.21	2.07	1.92	1.91	1.91	1.91	1.91	1.90	1.91	1.92	1.90	1.91	1.91	1.93	2.05	2.19	2.06	2.09					

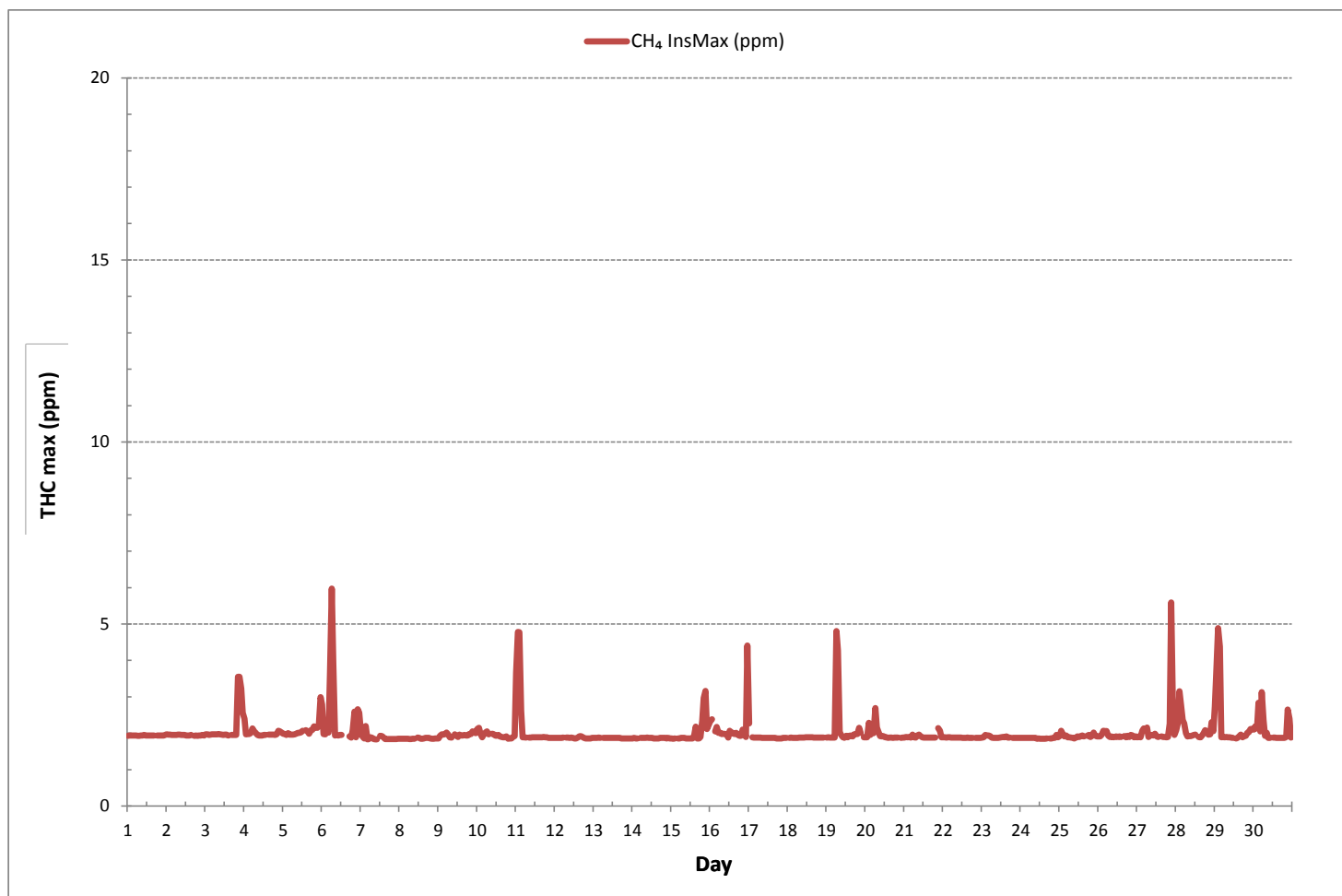
STATUS FLAG CODES

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:	684				
MAXIMUM INSTANTANEOUS VALUE:	5.97	ppm	@ HOUR	6	ON DAY(S) 6
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	719	hrs
MONTHLY CALIBRATION TIME:	4	hrs			
STANDARD DEVIATION:	0.41				

METHANE MAX Instantaneous Maximum (CH₄ ppm)



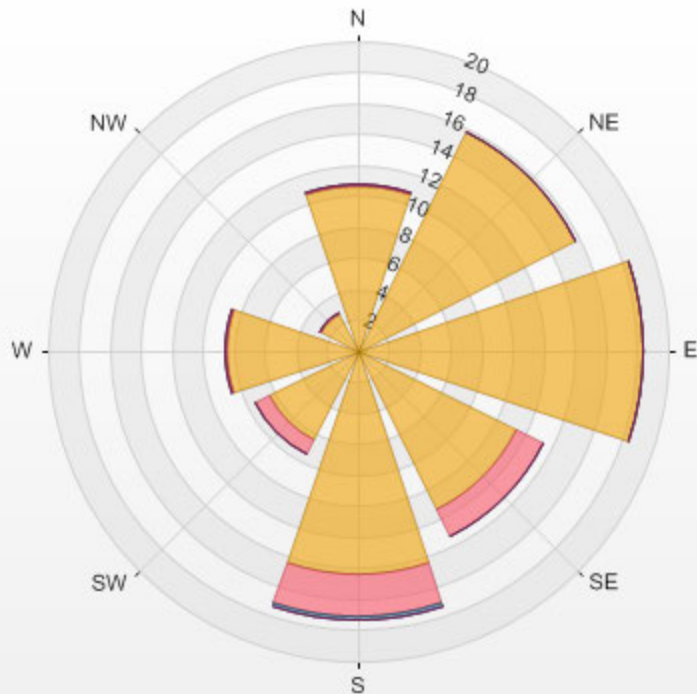
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-CH4[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.40%

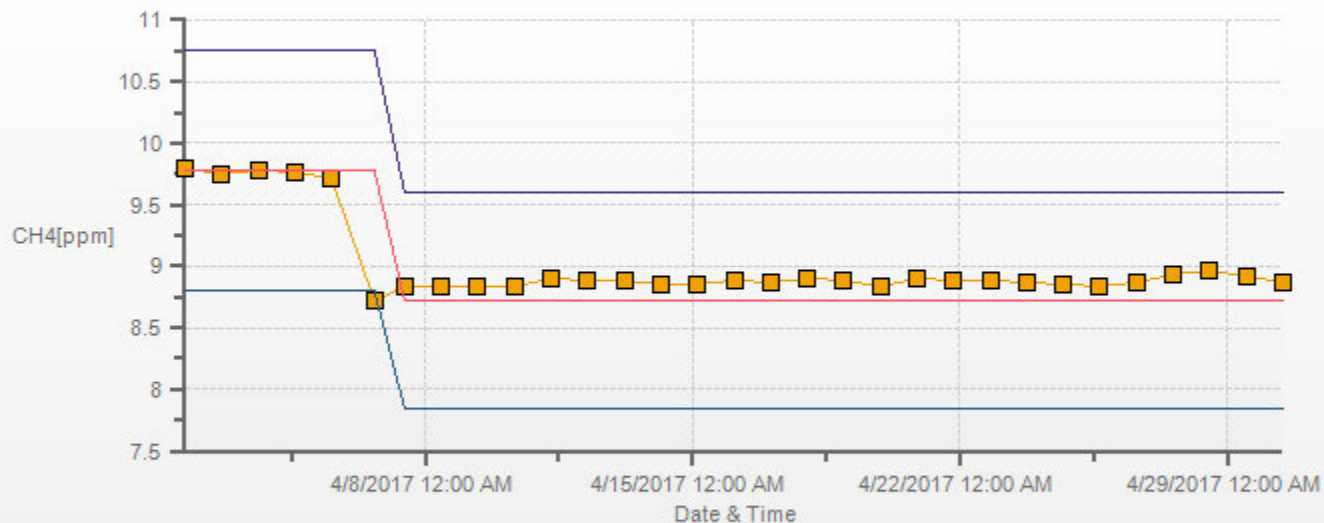
Calm Avg: 2.05 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	10.7	0.2	0.0	0.0	0.0	10.8
NE	15.8	0.0	0.0	0.0	0.0	15.8
E	18.4	0.0	0.0	0.0	0.0	18.4
SE	11.5	1.9	0.0	0.0	0.0	13.4
S	14.5	2.8	0.2	0.0	0.0	17.4
SW	6.4	1.0	0.0	0.0	0.0	7.4
W	8.5	0.2	0.0	0.0	0.0	8.6
NW	2.6	0.2	0.0	0.0	0.0	2.8
Summary	88.3	6.1	0.2	0.0	0.0	94.6

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.40% Calm Poll Avg: 2.05[ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 2017/04 Type: Span



Span Meas Span Ref Span Low Span High

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

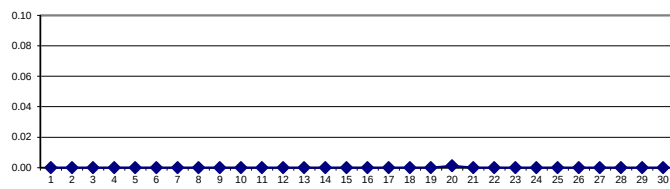
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	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	24
2	0.00	0.00	0.00	0.00	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
3	0.00	0.00	0.00	0.00	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
4	0.00	0.00	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
5	0.00	0.00	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
6	0.00	0.00	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	24
7	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
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
9	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
10	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
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	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
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	23
20	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	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	0.03	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
23	0.00	0.00	0.00	0.00	0.00	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	24
24	0.00	0.00	0.00	0.00	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
25	0.00	0.00	0.00	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
26	0.00	0.00	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
27	0.00	0.00	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
28	0.00	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
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	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
HOURLY MAX	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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

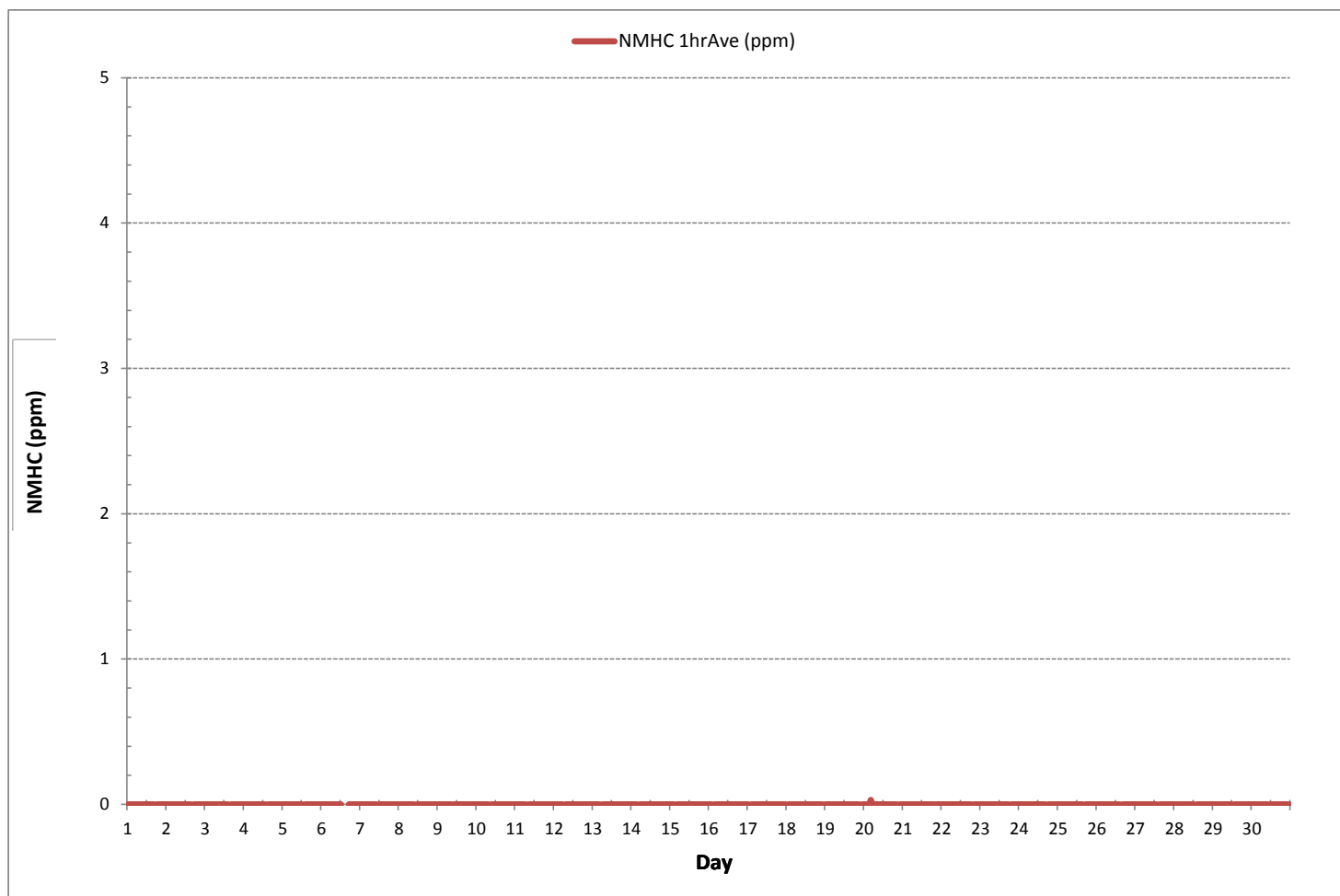
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	1				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	ALL	ON DAY(S)
MAXIMUM 1-HR AVERAGE:	0.03	ppm	@ HOUR	4	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY(S)
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	719	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	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
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	24
3	0.00	0.00	0.00	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
4	0.00	0.00	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
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	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	23
7	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	0.00	24
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
9	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	0.00	24
10	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	0.00	24
11	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	0.00	24
12	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	0.00	24
13	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	0.00	24
14	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	0.00	24
15	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	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	0.01	0.00	0.00	0.00	0.01	0.00	24
17	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	0.00	24
18	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	S	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	23
20	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	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	0.54	0.02	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	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
24	0.00	0.00	0.00	0.00	0.00	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
25	0.00	0.00	0.00	0.00	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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	24
26	0.00	0.00	0.00	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
27	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	24
28	0.00	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	24
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	24
HOURLY MAX	0.00	0.01	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.04	0.00	0.01	0.00	0.00					
HOURLY AVG	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

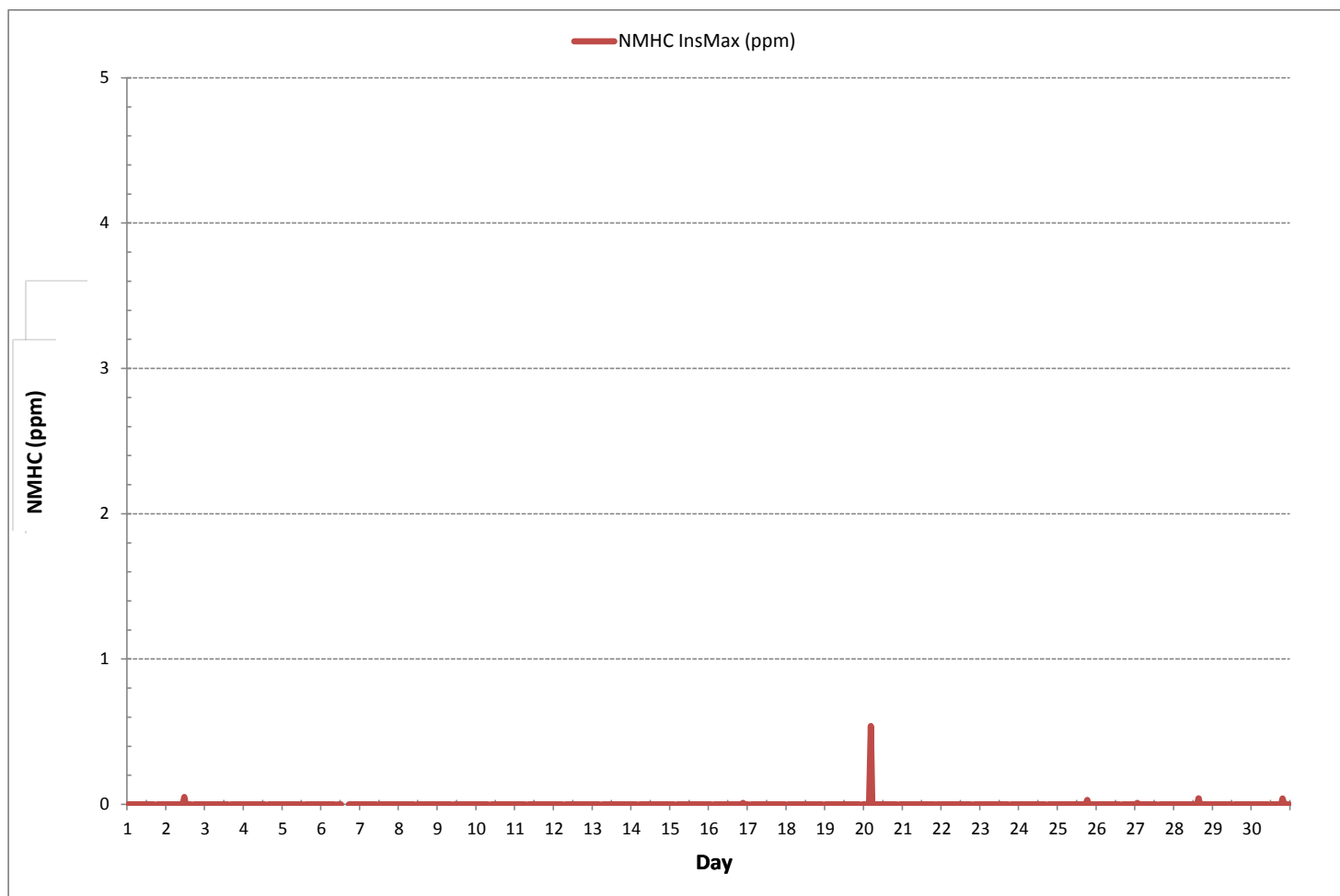
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	7
MAXIMUM INSTANTANEOUS VALUE:	0.54 ppm @ HOUR 4 ON DAY(S) 20
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.02
OPERATIONAL TIME:	718 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



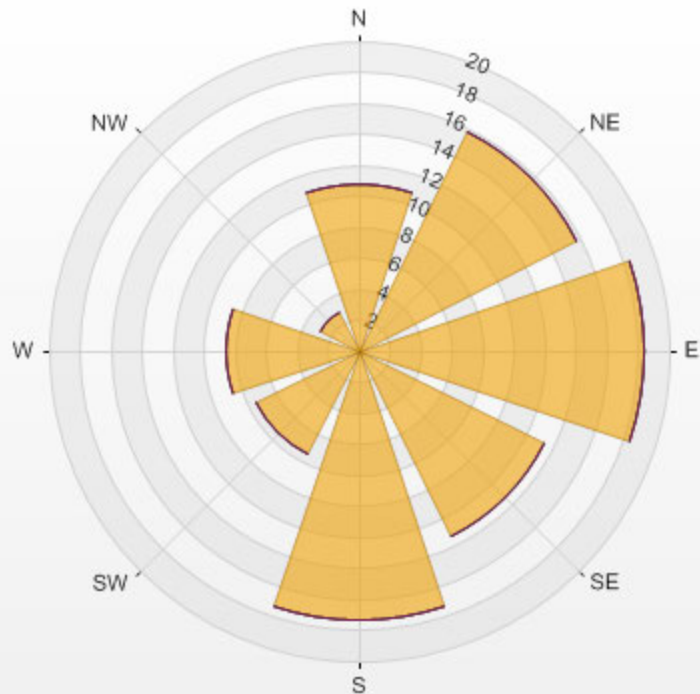
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-NMHC[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.40%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	10.8	0.0	0.0	0.0	0.0	10.8
NE	15.8	0.0	0.0	0.0	0.0	15.8
E	18.4	0.0	0.0	0.0	0.0	18.4
SE	13.4	0.0	0.0	0.0	0.0	13.4
S	17.4	0.0	0.0	0.0	0.0	17.4
SW	7.5	0.0	0.0	0.0	0.0	7.5
W	8.6	0.0	0.0	0.0	0.0	8.6
NW	2.8	0.0	0.0	0.0	0.0	2.8
Summary	94.6	0.0	0.0	0.0	0.0	94.6

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.40% Calm Poll Avg: 0.00[ppm]





■ 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	6.4	5.6	7.9	8.0	10.1	11.5	10.5	9.9	7.9	11.9	10.9	10.6	12.2	11.5	12.5	5.4	9.2	8.6	7.2	5.6	6.6	6.1	7.6	9.3	5.4	12.5	8.3	24
2	9.1	8.0	6.5	8.8	8.5	9.7	8.1	8.3	11.8	12.2	10.7	9.6	12.7	15.0	13.7	12.4	5.7	5.1	8.9	8.9	8.1	7.1	5.3	6.5	5.1	15.0	8.9	24
3	4.2	5.1	7.6	6.5	7.3	7.8	8.0	7.9	4.7	5.5	6.0	6.3	3.3	5.0	6.4	5.9	4.4	4.4	4.3	1.6	1.4	2.2	2.8	3.5	1.4	8.0	4.1	24
4	6.5	6.6	3.8	4.1	3.3	2.8	2.6	3.2	6.4	4.9	6.7	4.2	2.9	5.7	3.8	3.8	6.5	4.0	2.9	0.6	6.3	9.7	9.9	8.9	0.6	9.9	0.9	24
5	10.1	10.4	10.7	10.4	10.8	11.1	11.8	11.2	12.2	9.2	9.2	7.9	7.8	7.4	6.8	7.0	5.6	5.3	5.2	5.9	6.3	6.5	5.1	4.7	4.7	12.2	7.8	24
6	5.8	6.4	6.4	4.1	3.9	3.5	3.7	5.5	8.5	8.2	7.4	6.5	6.6	C	C	C	C	3.7	2.5	0.6	2.6	2.1	1.2	1.3	0.6	8.5	3.7	24
7	3.9	1.8	3.6	3.8	3.8	4.6	2.2	3.8	5.6	3.9	5.9	8.0	7.8	10.4	13.1	14.1	17.2	12.5	10.5	9.0	12.4	7.7	8.4	8.5	1.8	17.2	5.9	24
8	11.4	14.2	15.2	12.7	11.4	11.7	9.7	8.8	12.0	12.4	10.0	9.1	9.1	7.5	9.2	10.9	9.5	7.8	9.3	10.2	7.8	9.6	10.0	12.5	7.5	15.2	10.3	24
9	12.5	11.2	9.1	7.0	6.4	6.6	7.8	8.4	7.2	6.8	8.7	7.5	9.1	9.3	8.3	7.9	6.1	5.5	5.6	5.8	6.5	5.7	5.8	4.2	4.2	12.5	6.7	24
10	4.6	4.8	5.3	4.8	4.7	4.7	4.9	5.8	6.9	6.2	4.9	3.9	3.4	4.7	4.1	1.9	6.3	4.4	9.5	5.7	4.1	3.7	4.3	3.7	1.9	9.5	2.0	24
11	0.3	1.4	0.2	4.2	8.2	8.2	9.1	9.8	11.8	9.6	7.8	8.5	7.7	6.0	7.8	9.9	11.8	11.2	10.2	9.5	12.8	9.8	8.0	7.0	0.2	12.8	7.4	24
12	7.2	5.5	6.6	8.5	8.8	8.6	6.3	10.3	13.7	15.4	13.4	13.8	14.5	14.4	14.5	14.7	15.6	17.1	15.9	11.9	10.8	13.2	13.4	14.9	5.5	17.1	11.7	24
13	16.5	16.1	16.3	16.8	17.3	16.5	18.1	19.5	23.1	22.9	21.1	19.0	17.7	18.7	20.0	20.4	21.7	19.8	18.9	18.5	18.8	15.6	15.2	12.9	12.9	23.1	18.1	24
14	11.1	11.4	9.6	7.0	7.8	8.1	8.4	8.2	8.2	8.4	9.4	9.2	8.6	8.3	8.3	9.5	8.5	7.5	8.3	8.7	8.6	8.5	8.1	7.8	7.0	11.4	8.2	24
15	7.5	5.9	7.1	7.0	7.3	8.2	8.8	7.6	7.8	8.8	8.3	7.6	7.1	6.5	5.6	4.8	3.4	4.0	1.2	1.9	2.9	3.5	3.0	3.3	1.2	8.8	3.9	24
16	4.5	4.6	4.7	5.9	5.5	5.7	6.1	7.2	8.1	6.6	6.9	6.7	5.5	7.7	6.3	4.3	3.6	2.7	1.3	0.2	0.3	0.7	1.6	1.4	0.2	8.1	4.2	24
17	6.1	7.5	10.2	12.2	12.4	12.4	13.9	17.4	16.2	17.5	16.2	15.9	15.6	16.3	16.3	16.4	17.0	17.3	16.7	15.1	13.8	12.4	13.3	12.5	6.1	17.5	13.9	24
18	12.9	14.0	14.1	14.4	12.4	11.9	11.1	11.2	10.3	9.1	9.8	8.2	8.5	7.7	6.8	7.4	6.3	5.2	6.2	5.3	3.6	3.9	4.1	2.6	2.6	14.4	8.5	24
19	0.5	1.6	2.8	1.4	0.8	1.0	0.6	0.6	1.5	2.9	5.9	6.3	5.8	5.0	6.7	4.9	3.8	4.4	4.5	4.2	3.8	5.9	6.7	7.2	0.5	7.2	3.0	24
20	5.2	5.9	5.5	5.8	4.5	5.6	3.6	4.2	4.2	6.2	6.9	8.5	10.2	12.1	14.3	13.5	11.9	11.9	12.3	11.1	10.1	8.5	9.0	5.0	3.6	14.3	3.9	24
21	0.9	1.6	1.2	2.7	4.7	3.8	3.4	3.4	3.7	4.5	3.2	2.9	4.0	4.5	6.7	6.7	7.8	8.0	8.5	7.7	5.1	6.6	5.7	4.6	0.9	8.5	2.8	24
22	7.9	8.1	8.7	8.1	9.6	8.0	8.3	12.7	15.4	15.8	16.4	15.6	17.6	15.4	15.6	16.1	15.7	16.2	13.8	13.0	12.2	14.3	14.6	16.6	7.9	17.6	13.0	24
23	15.0	12.5	10.0	10.0	10.9	11.1	12.8	13.6	13.0	14.4	13.7	14.5	13.3	14.2	13.7	11.7	12.2	11.9	12.9	10.9	10.9	9.1	8.2	9.2	8.2	15.0	11.9	24
24	10.2	9.5	7.7	7.9	7.2	5.4	6.1	8.9	9.2	10.4	11.1	12.1	11.0	6.7	6.9	7.1	8.0	9.0	6.5	6.5	4.4	2.4	0.9	0.3	0.3	12.1	7.0	24
25	2.0	1.9	0.9	0.6	0.8	0.6	1.6	4.3	3.7	3.5	2.6	4.0	4.3	5.6	6.6	6.5	6.4	7.4	5.9	6.7	8.2	8.4	8.2	8.2	0.6	8.4	3.2	24
26	6.3	6.9	6.1	6.5	8.1	7.4	7.6	7.4	8.5	12.1	9.6	10.3	10.2	10.8	9.5	8.5	7.5	7.3	13.1	12.7	12.3	11.5	9.3	7.0	6.1	13.1	8.8	24
27	9.2	7.8	5.1	5.8	4.6	4.5	4.7	5.6	6.2	5.0	5.4	3.6	3.0	4.8	6.3	4.6	5.0	4.5	8.1	5.4	5.7	3.0	3.6	5.5	3.0	9.2	4.5	24
28	4.9	4.4	4.0	4.2	4.6	5.3	6.2	7.0	8.3	8.8	8.4	9.4	7.2	6.5	6.8	5.9	1.3	6.5	6.5	6.2	5.1	6.5	6.8	4.4	1.3	9.4	5.2	24
29	4.9	3.2	3.0	3.7	5.5	5.2	5.5	7.7	7.9	8.2	8.8	9.8	8.9	6.8	7.0	5.5	2.8	5.3	3.5	7.3	5.9	9.2	5.7	6.5	2.8	9.8	3.7	24
30	5.8	6.7	6.9	6.6	5.4	3.7	4.3	5.0	4.4	4.8	3.5	3.1	4.5	8.5	13.4	14.3	16.2	12.7	11.3	1.2	3.8	2.6	2.6	1.4	1.2	16.2	2.1	24
HOURLY MAX	16.5	16.1	16.3	16.8	17.3	16.5	18.1	19.5	23.1	22.9	21.1	19.0	17.7	18.7	20.0	20.4	21.7	19.8	18.9	18.5	18.8	15.6	15.2	12.9	12.9	23.1	18.1	
HOURLY AVG	3.8	3.5	3.0	2.8	2.6	2.4	2.6	3.0	3.1	2.7	2.7	2.6	2.3	2.4	2.1	2.9	3.5	3.8	4.6	4.2	4.3	4.2	3.8	3.8				

STATUS FLAG CODES

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

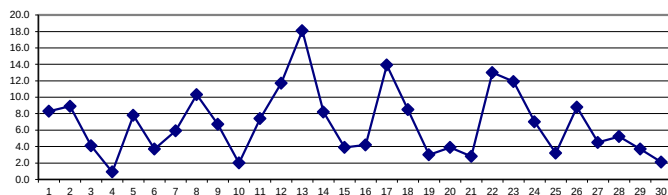
LAST CALIBRATION:

April 6, 2017

DECLINATION :

MAGNETIC DECLINATION 15 DEGREE EAST

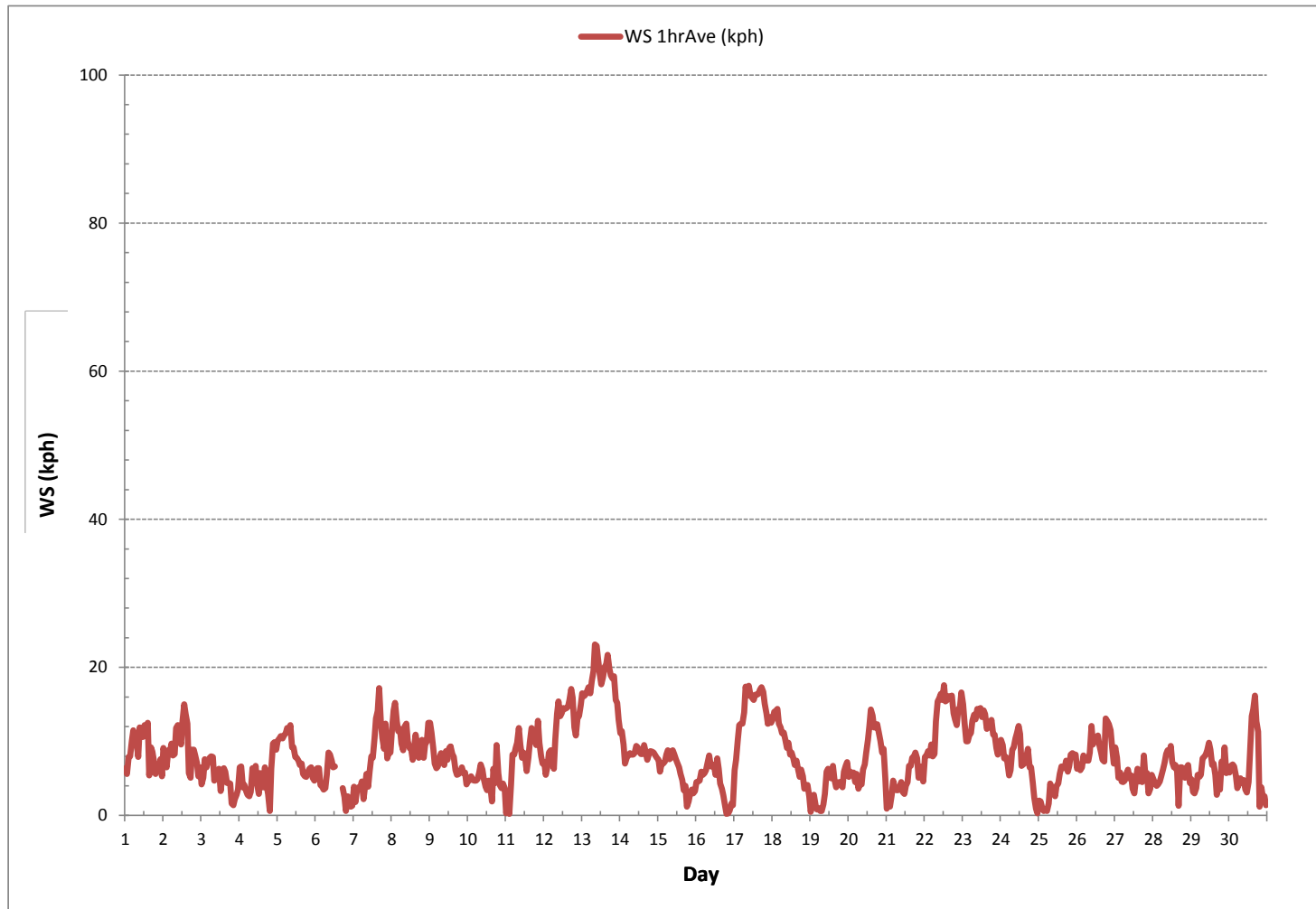
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	716				
MINIMUM 1-HR AVERAGE	0.2	kph	@ HOUR	2	ON DAY(S) 11
MAXIMUM 1-HR AVERAGE:	23.1	kph	@ HOUR	8	ON DAY(S) 13
MAXIMUM 24-HR AVERAGE:	18.1	kph			ON DAY(S) 13
MONTHLY CALIBRATION TIME:	4	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	4.2		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	3.1	kph

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

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	16.8	14.9	17.6	18.9	22.2	27.1	22.9	22.1	18.2	29.4	26.8	28.4	28.5	30.0	33.0	24.0	28.7	24.2	22.2	15.0	17.6	18.0	18.5	24.7	14.9	33.0	22.9	24
2	24.0	20.5	15.6	19.4	19.1	21.8	22.4	26.2	28.1	30.3	28.9	25.1	31.2	34.7	33.8	37.1	34.6	19.9	28.7	21.9	18.4	17.3	14.0	21.1	14.0	37.1	24.8	24
3	16.2	12.4	20.1	16.6	17.8	19.4	18.7	17.8	13.4	13.2	15.1	15.8	14.1	17.4	19.0	19.9	14.7	16.1	14.2	7.2	2.8	4.2	5.2	11.0	2.8	20.1	14.3	24
4	14.7	16.8	12.6	10.4	8.3	11.4	8.2	14.0	14.6	12.6	14.0	16.3	16.9	18.3	20.2	17.8	17.7	13.8	9.3	5.3	15.9	23.1	24.6	21.2	5.3	24.6	14.9	24
5	25.5	26.0	28.1	25.5	23.7	32.4	30.7	33.8	32.2	25.8	24.4	20.9	20.6	19.0	17.6	16.8	16.0	15.1	14.9	15.4	13.9	16.8	11.6	10.7	10.7	33.8	21.6	24
6	19.3	20.7	15.8	10.5	9.9	8.8	6.8	13.2	20.1	P	20.9	17.1	19.3	C	C	C	C	9.1	8.0	2.9	14.4	6.0	8.1	9.3	2.9	20.9	12.6	23
7	13.5	7.2	9.5	8.5	10.0	10.1	6.8	9.8	14.1	7.3	14.3	20.4	20.0	26.2	27.5	31.5	36.2	29.1	24.1	28.4	31.1	16.7	17.7	20.8	6.8	36.2	18.4	24
8	27.8	32.1	31.7	27.0	27.7	25.2	26.2	16.8	24.6	23.2	23.8	23.1	23.4	27.2	34.7	27.5	21.8	20.1	18.1	20.6	15.4	21.4	22.2	26.2	15.4	34.7	24.5	24
9	26.6	25.5	20.7	19.7	13.6	17.4	20.6	21.2	18.3	17.5	21.1	20.0	26.3	22.7	22.8	24.9	18.2	14.7	13.2	13.2	17.9	19.6	14.5	10.6	10.6	26.6	19.2	24
10	11.9	11.5	13.2	13.4	11.3	12.3	11.9	17.0	18.1	14.4	15.2	10.1	13.1	14.5	14.0	26.3	17.7	22.6	31.3	19.4	9.8	10.3	16.1	12.4	9.8	31.3	15.3	24
11	5.5	3.8	3.2	11.7	21.5	21.5	20.9	21.9	26.1	22.6	19.8	20.3	20.3	18.8	23.3	27.5	28.1	29.3	22.1	25.0	26.6	23.8	15.6	16.5	3.2	29.3	19.8	24
12	15.5	15.6	13.0	20.7	17.0	19.4	14.7	25.0	25.7	33.8	26.8	29.0	28.8	31.8	35.3	33.3	35.1	37.3	32.9	27.8	23.5	28.4	26.1	34.9	13.0	37.3	26.3	24
13	33.1	33.2	32.4	33.4	34.8	36.2	41.9	44.5	50.4	49.9	44.5	36.7	38.1	38.7	40.9	39.7	46.2	43.3	39.1	36.0	35.9	35.9	32.8	28.8	28.8	50.4	38.6	24
14	24.1	22.3	19.3	15.2	17.1	18.7	18.0	17.9	18.0	21.2	19.8	21.9	21.4	22.6	19.3	21.4	20.9	17.0	17.6	19.0	18.4	19.4	20.5	19.1	15.2	24.1	19.6	24
15	18.3	13.1	16.9	17.1	17.4	21.3	21.1	18.8	19.2	20.4	18.2	17.7	19.5	16.1	15.1	14.6	13.8	9.1	5.7	4.4	5.5	6.5	5.7	7.4	4.4	21.3	14.3	24
16	9.8	9.9	7.9	10.2	10.7	11.7	15.9	16.1	19.1	16.7	16.2	17.6	16.5	14.4	16.0	12.3	10.7	6.8	4.0	2.6	2.4	3.9	4.7	5.6	2.4	19.1	10.9	24
17	17.8	18.7	25.1	27.3	27.4	30.3	34.5	37.0	34.4	33.4	34.1	30.5	32.4	31.5	37.8	33.7	33.8	37.8	33.5	30.7	32.4	29.9	30.2	27.1	17.8	37.8	30.9	24
18	29.8	32.8	29.5	31.7	28.1	27.1	23.5	25.7	22.9	18.6	18.4	16.4	17.0	16.1	13.9	13.6	16.0	13.8	13.3	11.9	10.2	8.9	9.1	6.7	6.7	32.8	19.0	24
19	4.6	6.5	7.1	5.6	3.1	2.5	3.3	3.8	5.0	9.6	12.9	15.7	14.7	12.8	14.2	13.0	12.4	11.7	12.0	10.2	9.5	13.4	17.4	24.1	2.5	24.1	10.2	24
20	12.4	12.9	13.2	15.6	11.1	12.6	9.3	12.7	11.9	18.4	20.0	20.9	25.2	29.1	33.1	32.5	28.7	27.9	30.5	27.1	23.3	21.1	18.5	16.4	9.3	33.1	20.2	24
21	4.4	6.2	9.0	8.3	9.7	11.0	7.8	9.3	11.5	14.8	9.7	9.5	15.3	12.3	20.1	18.6	21.7	20.9	18.8	21.7	12.6	16.7	14.8	12.9	4.4	21.7	13.2	24
22	17.7	17.0	19.7	18.1	18.0	16.7	14.8	26.0	29.6	30.3	37.3	33.0	33.3	31.6	33.8	35.7	35.2	37.5	27.3	26.2	26.2	26.7	30.2	33.8	14.8	37.5	27.3	24
23	33.3	29.5	21.4	25.7	25.8	23.2	22.9	24.6	23.9	31.5	29.2	31.2	32.1	30.5	28.8	26.2	24.8	26.5	27.2	23.7	25.0	18.4	17.9	17.6	17.6	33.3	25.9	24
24	19.7	18.7	16.0	17.4	14.8	13.4	14.7	19.5	20.0	24.5	25.9	27.6	23.9	29.5	18.2	17.6	21.3	27.4	17.1	18.3	16.3	6.1	4.1	2.6	2.6	29.5	18.1	24
25	6.2	6.1	4.3	3.4	4.6	2.5	4.6	7.8	14.8	12.1	13.3	14.2	15.6	17.4	19.1	19.9	15.9	21.5	16.7	19.4	20.6	24.9	20.5	20.9	2.5	24.9	13.6	24
26	16.9	17.7	17.4	14.8	19.0	17.3	19.9	22.4	33.8	34.6	27.6	29.0	26.2	27.5	25.6	26.8	23.5	27.2	33.7	29.6	30.6	28.1	24.2	17.7	14.8	34.6	24.6	24
27	20.9	17.5	14.1	14.0	11.3	9.5	10.4	12.6	15.1	15.7	16.4	17.9	12.9	14.3	20.8	19.7	17.8	12.9	16.8	13.7	12.4	7.4	8.1	14.2	7.4	20.9	14.4	24
28	12.7	11.6	7.8	6.1	9.5	13.8	18.7	17.9	21.3	22.4	21.6	26.0	20.5	20.2	20.5	22.5	17.7	20.3	19.8	19.7	13.0	17.8	26.7	12.4	6.1	26.7	17.5	24
29	8.9	7.0	7.0	10.9	12.4	14.0	15.7	20.5	21.0	20.9	24.9	26.1	29.9	23.6	24.7	18.0	14.9	17.2	24.9	19.4	18.5	23.6	14.2	17.2	7.0	29.9	18.1	24
30	12.5	13.3	14.3	13.3	13.7	9.2	12.2	14.0	13.9	13.6	13.0	14.0	20.3	26.8	34.7	33.9	50.6	39.1	34.1	11.8	10.4	8.5	6.7	6.4	6.4	50.6	18.3	24
HOURLY MAX	33.3	33.2	32.4	33.4	34.8	36.2	41.9	44.5	50.4	49.9	44.5	36.7	38.1	38.7	40.9	39.7	50.6	43.3	39.1	36.0	35.9	35.9	32.8	34.9				
HOURLY AVG	17.3	16.7	16.1	16.3	16.4	17.3	17.3	19.7	21.3	22.0	21.8	21.7	22.6	23.3	24.8	24.4	24.0	22.3	21.0	18.3	17.7	17.4	16.7	17.0				

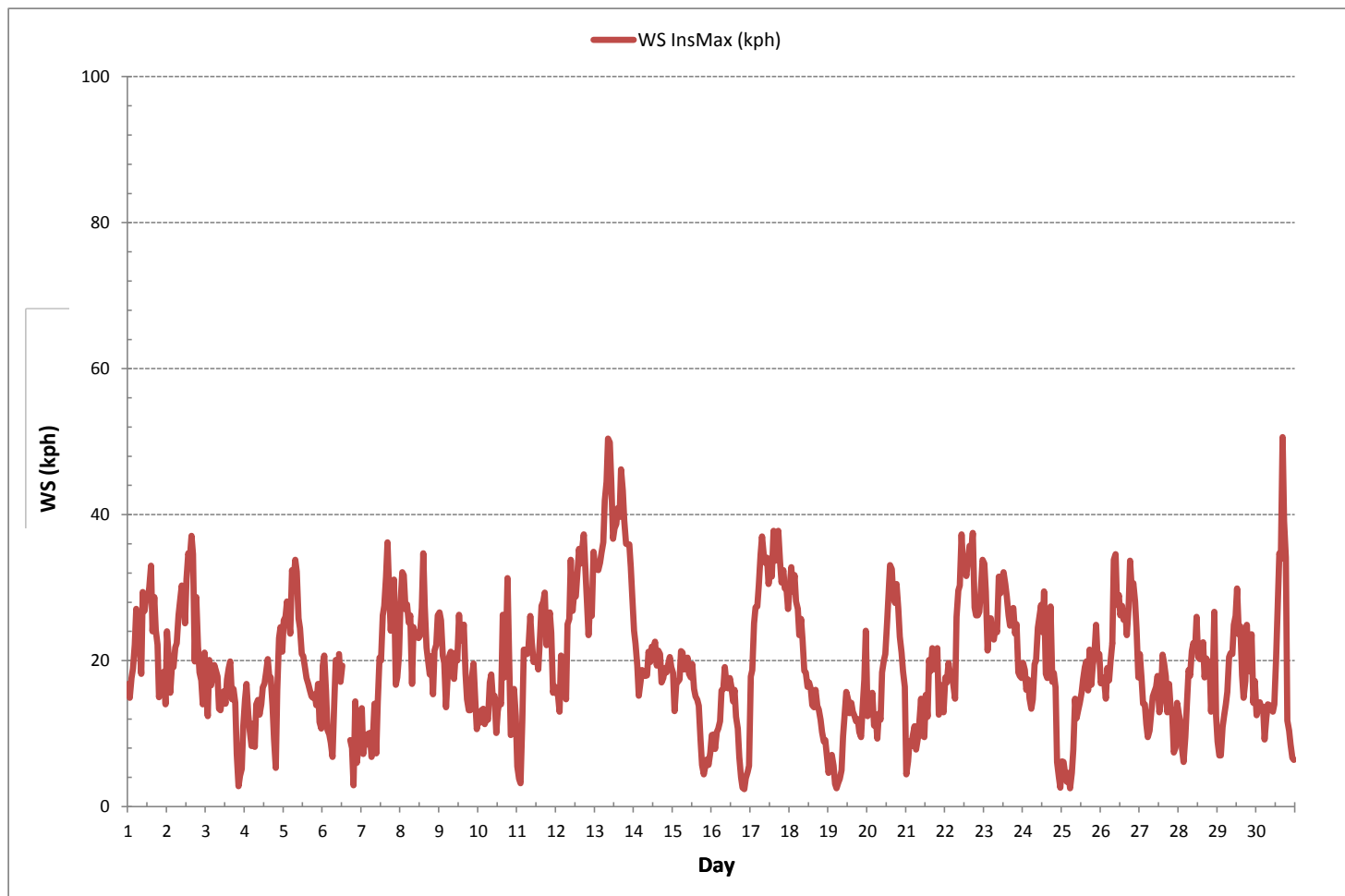
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	50.6	kph	@ HOUR	16	ON DAY	30
OPERATIONAL TIME:	719	hrs				

WIND SPEED Instantaneous Maximum (WS kph)



Wind: PRAMP_RENO
 Monitor: WSP [kph]
 Monthly: 2017/04
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

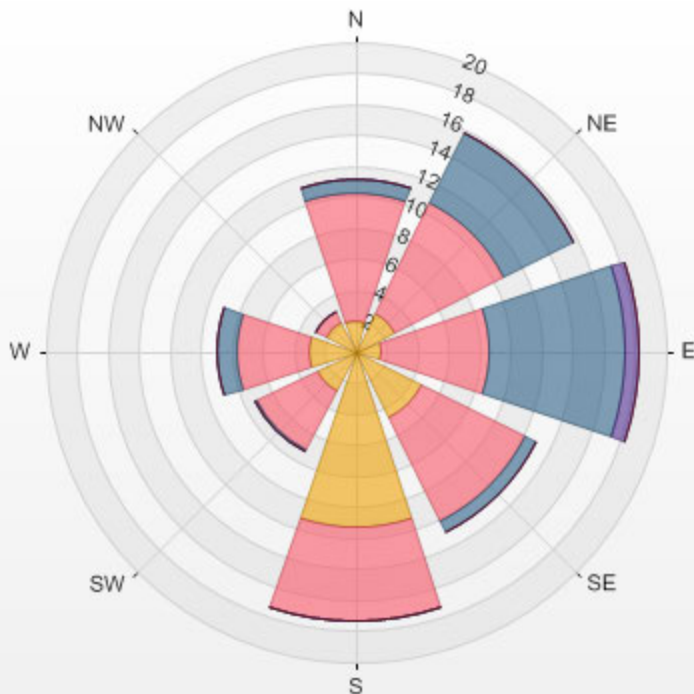
Calm: 5.17%

Calm Avg: 0.00 [kph]

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	2.0	8.2	1.0	0.0	0.0	0.0	11.2
NE	2.8	8.0	5.0	0.0	0.0	0.0	15.8
E	1.7	7.0	8.8	0.8	0.0	0.0	18.3
SE	4.8	7.5	0.7	0.0	0.0	0.0	13.0
S	11.3	6.2	0.0	0.0	0.0	0.0	17.5
SW	2.8	4.3	0.1	0.0	0.0	0.0	7.3
W	3.1	4.6	1.3	0.0	0.0	0.0	8.9
NW	2.1	0.8	0.0	0.0	0.0	0.0	2.9
Summary	30.4	46.7	16.9	0.8	0.0	0.0	94.8

%	Icon	Classes (kph)
30		1.8-6.0
47		6.0-12.0
17		12.0-20.0
1		20.0-29.0
0		29.0-39.0
0		>39.0

PRAMP_RENO 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.17% Calm Wind Avg Speed: 0.99(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

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

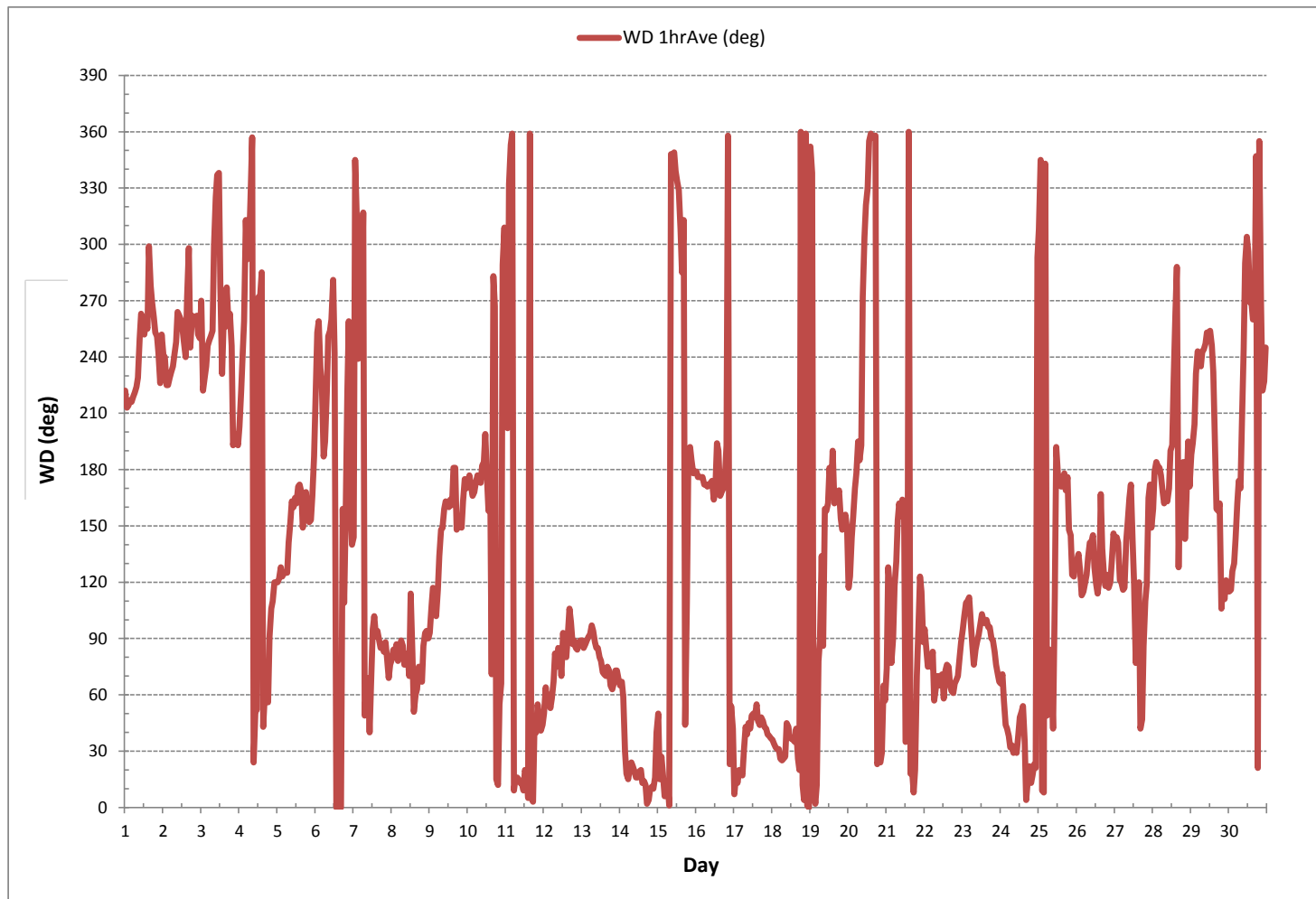
STATUS FLAG CODES

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:	4	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	91		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	85 (E)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

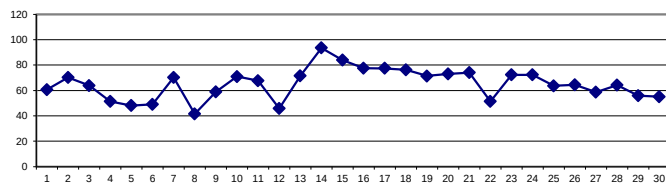
RELATIVE HUMIDITY Hourly Averages (RH %)

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	66	70	72	74	73	74	75	72	66	60	58	57	55	53	47	57	42	41	48	56	56	56	64	63	41	75	61	24
2	66	67	72	74	75	75	75	71	62	57	56	57	59	54	49	48	79	84	79	82	85	84	87	89	48	89	70	24
3	87	90	85	81	78	76	75	74	69	63	54	48	45	44	41	42	39	43	47	54	66	76	77	80	39	90	64	24
4	67	61	62	67	72	78	81	70	69	69	64	48	36	34	30	29	29	26	28	39	43	41	44	46	26	81	51	24
5	46	47	49	52	53	52	50	50	52	52	50	52	48	49	46	39	37	39	43	45	46	47	55	58	37	58	48	24
6	55	59	65	71	79	83	85	75	54	47	41	36	28	26	30	32	32	33	34	36	41	39	49	49	26	85	49	24
7	62	81	84	91	93	93	94	95	90	86	83	69	62	58	54	55	52	54	55	55	51	55	58	54	51	95	70	24
8	50	49	47	50	54	56	56	53	47	45	41	37	32	28	27	26	24	25	29	38	41	43	47	53	24	56	42	24
9	56	57	60	63	67	67	66	64	56	56	58	58	55	55	54	51	49	50	53	58	60	62	66	73	49	73	59	24
10	76	78	77	77	76	77	78	74	69	64	61	57	54	54	48	48	75	76	79	81	85	78	79	81	48	85	71	24
11	86	89	90	91	86	85	84	82	80	80	74	63	56	47	41	40	39	40	44	52	60	66	73	78	39	91	68	24
12	76	76	80	79	77	75	74	65	58	51	47	40	29	25	23	20	18	18	21	27	30	29	31	33	18	80	46	24
13	35	38	41	45	50	53	58	63	71	77	76	81	86	86	81	71	67	80	90	92	93	94	93	94	35	94	71	24
14	94	94	94	94	95	95	95	95	94	92	92	91	91	92	92	92	92	93	94	95	95	95	95	94	91	95	94	24
15	90	91	92	92	92	92	91	91	88	85	82	79	74	73	72	66	67	74	76	85	90	90	90	91	66	92	84	24
16	92	92	91	91	91	90	88	83	80	75	72	67	64	62	60	57	57	59	56	73	86	91	93	93	56	93	78	24
17	93	91	89	86	85	86	85	78	73	71	69	68	67	66	69	70	71	72	73	79	85	80	82	66	93	77	24	
18	83	82	82	82	82	82	82	81	79	75	70	67	66	62	64	67	66	67	73	76	81	85	88	89	62	89	76	24
19	90	88	89	87	86	86	86	88	88	80	69	59	57	56	57	56	53	53	56	62	68	66	67	67	53	90	71	24
20	68	66	73	76	79	81	80	74	68	62	60	57	60	69	76	79	79	81	77	77	77	78	78	77	57	81	73	24
21	77	77	78	79	83	83	83	84	83	80	75	72	71	73	67	64	62	64	62	65	74	71	73	79	62	84	74	24
22	75	71	72	71	65	64	64	57	52	51	44	38	39	36	36	34	33	34	39	47	53	54	53	54	33	75	52	24
23	54	53	54	55	64	71	79	82	84	81	81	79	74	73	70	69	70	70	73	76	79	81	83	82	53	84	72	24
24	82	83	86	88	88	87	88	85	81	78	75	65	59	57	56	57	54	56	59	61	67	70	75	79	54	88	72	24
25	80	84	86	87	86	86	73	71	62	56	54	50	47	46	44	43	42	42	39	51	66	74	78	80	39	87	64	24
26	80	79	77	79	80	79	78	77	70	64	60	57	55	52	49	45	44	48	49	54	60	66	70	74	44	80	64	24
27	73	74	75	76	78	78	73	69	63	58	54	52	49	45	42	41	41	40	43	49	47	61	64	62	40	78	59	24
28	66	72	75	77	77	76	72	69	61	56	48	40	40	41	40	38	45	58	68	73	78	89	91	90	38	91	64	24
29	92	93	94	93	86	85	81	75	70	63	55	44	37	31	27	29	28	25	25	36	42	42	44	44	25	94	56	24
30	47	49	51	52	59	68	63	60	56	48	41	38	34	31	32	34	41	53	77	73	76	76	82	81	31	82	55	24
HOURLY MAX	94	94	94	94	95	95	95	95	94	92	92	91	91	92	92	92	92	93	94	95	95	95	95	94				
HOURLY AVG	72	73	75	76	77	78	77	74	70	66	62	58	54	53	51	50	51	53	56	61	66	68	71	72				

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 April 2017

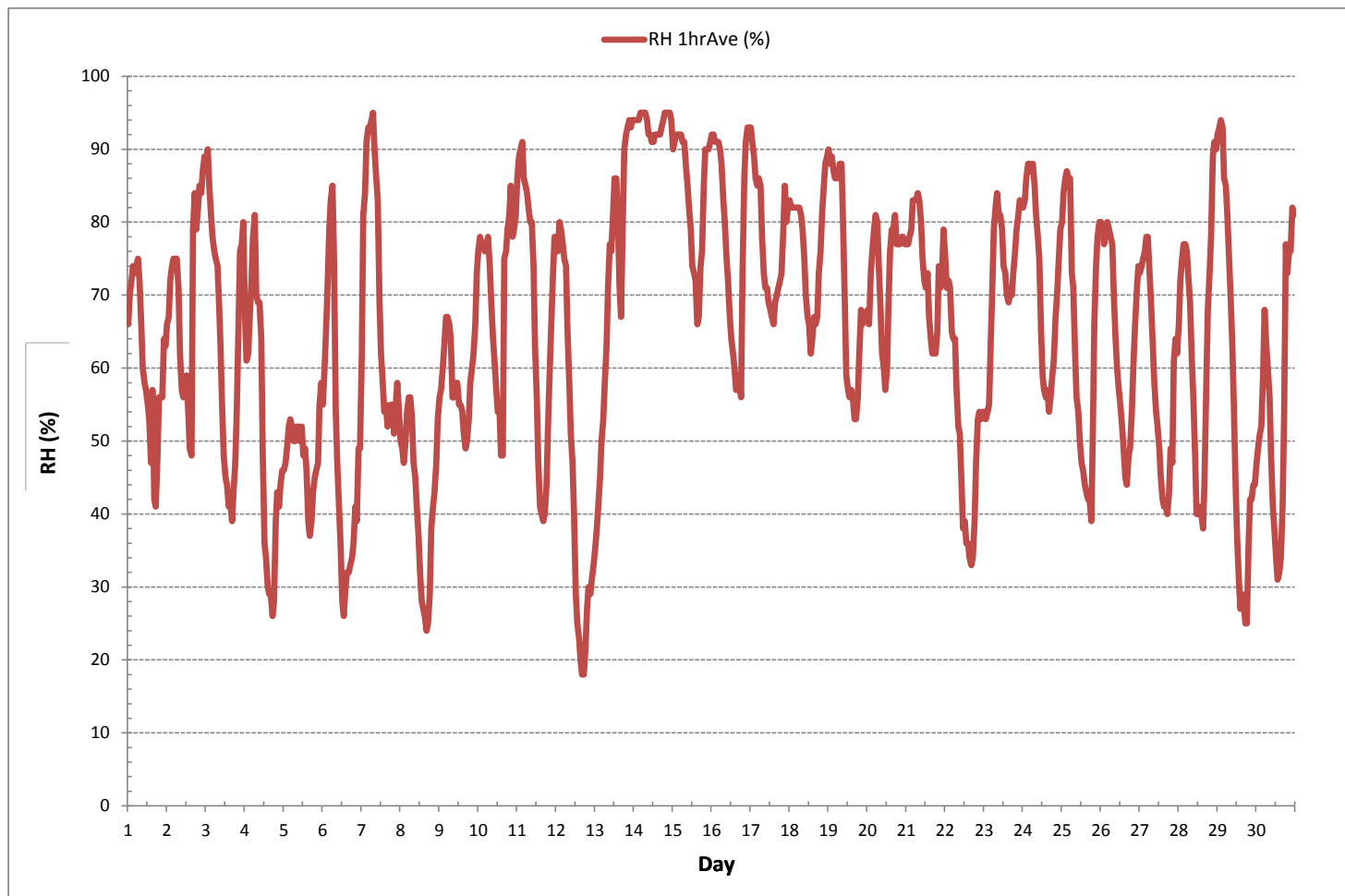


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	18	%	@ HOUR	16, 17	ON DAY(S)	12, 12
MAXIMUM 1-HR AVERAGE:	95	%	@ HOUR	7, VAR	ON DAY(S)	7, 14
MAXIMUM 24-HR AVERAGE:	94	%			ON DAY(S)	14

OPERATIONAL TIME:	720	hrs
AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	18	
MONTHLY AVERAGE:	65	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - April 2017

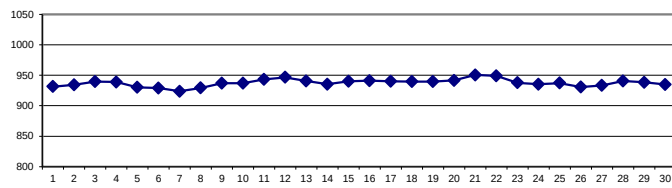
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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

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 April 2017

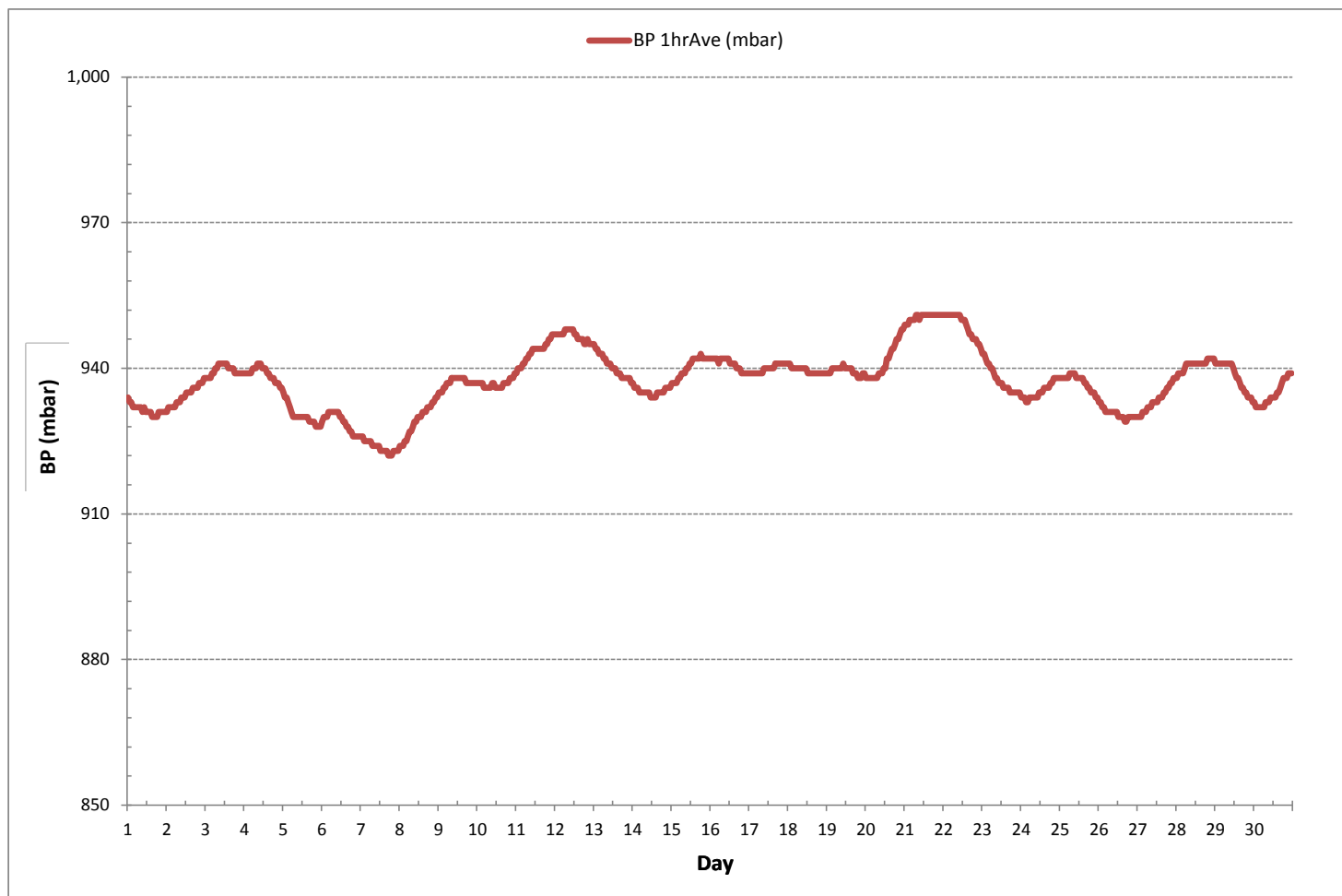


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	922	mbar	@ HOUR	VAR	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	951	mbar	@ HOUR	VAR, VAR	ON DAY(S)	21, 22
MAXIMUM 24-HR AVERAGE:	951	mbar			ON DAY(S)	21

OPERATIONAL TIME:	720	hrs
AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	6	
MONTHLY AVERAGE:	938	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

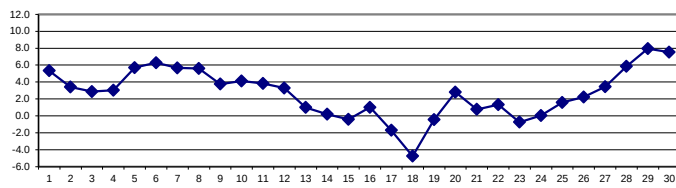
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	2.9	1.7	1.8	1.6	2.0	1.9	1.9	2.8	4.5	6.4	7.1	7.5	8.2	8.7	9.6	8.6	10.8	10.6	8.7	6.1	5.0	4.1	2.6	3.3	1.6	10.8	5.4	24
2	2.7	2.5	1.2	0.9	0.8	0.7	0.4	1.4	3.4	4.9	6.1	6.8	7.5	7.9	8.9	8.5	3.2	3.7	3.6	2.3	1.5	1.4	0.9	0.8	0.4	8.9	3.4	24
3	1.3	0.6	0.8	0.2	-0.5	-0.7	-0.8	-0.2	1.7	2.9	4.4	4.9	6.1	7.7	7.8	8.1	8.8	6.9	6.4	4.2	1.3	-0.5	-1.0	-1.5	-1.5	8.8	2.9	24
4	-0.1	0.5	0.2	-0.4	-1.0	-1.6	-2.0	1.7	2.5	3.0	3.4	4.9	6.7	7.3	7.8	7.8	7.3	7.2	6.4	2.7	2.3	2.5	2.1	1.6	-2.0	7.8	3.0	24
5	1.3	1.3	1.1	0.7	1.0	1.4	1.9	3.3	4.4	5.0	5.4	5.9	7.1	7.4	9.1	11.6	11.9	12.1	11.4	9.5	7.9	7.1	4.9	4.1	0.7	12.1	5.7	24
6	4.6	4.1	3.7	2.6	0.9	-0.4	-1.3	1.8	5.9	7.2	8.3	9.4	10.3	11.3	10.5	10.5	10.2	9.8	9.2	8.0	7.1	6.6	5.0	5.5	-1.3	11.3	6.3	24
7	5.8	4.4	4.0	3.2	2.8	2.6	2.3	2.4	3.6	4.3	5.3	7.0	7.6	7.9	8.5	8.4	8.5	7.8	7.5	7.1	7.0	6.3	5.7	5.8	2.3	8.5	5.7	24
8	5.6	5.4	5.0	4.5	3.9	3.4	3.1	3.5	4.5	5.2	6.1	7.5	8.1	8.8	9.2	9.5	9.4	9.3	8.4	5.4	3.3	2.6	1.7	0.6	0.6	9.5	5.6	24
9	-0.1	-0.5	-1.0	-1.5	-2.0	-2.2	-1.6	-0.8	2.2	4.9	5.5	5.9	7.4	7.7	8.3	9.5	10.0	9.7	8.7	6.9	5.5	3.6	2.6	1.7	-2.2	10.0	3.8	24
10	0.9	0.9	1.0	0.6	0.4	0.0	-0.2	0.8	2.3	4.5	6.2	7.9	9.1	9.4	10.2	9.8	6.2	5.7	5.2	4.6	3.2	3.9	3.6	2.6	-0.2	10.2	4.1	24
11	1.0	0.4	0.5	0.5	0.1	-0.7	-0.7	-0.6	-0.5	-0.2	3.1	6.3	8.2	9.4	10.5	11.0	10.8	10.2	9.3	7.1	4.7	2.5	0.3	-1.0	-1.0	11.0	3.8	24
12	-0.4	-0.6	-1.6	-1.2	-0.7	-0.6	-0.4	0.9	2.2	3.6	4.6	5.9	6.8	7.7	8.2	8.5	8.0	7.2	6.0	4.4	3.4	3.0	2.2	1.8	-1.6	8.5	3.3	24
13	1.7	1.3	1.4	1.1	1.0	0.8	0.8	0.4	0.3	0.3	1.1	0.7	0.6	1.2	2.0	2.8	2.8	1.6	0.7	0.4	0.2	0.2	0.3	0.2	0.2	2.8	1.0	24
14	0.4	0.4	0.4	0.2	0.1	0.1	0.1	0.3	0.4	0.3	0.5	0.5	0.4	0.6	0.5	0.4	0.4	0.2	0.1	0.0	-0.1	-0.4	-0.9	-0.9	-0.9	0.6	0.2	24
15	-1.4	-1.5	-1.8	-2.1	-2.3	-2.5	-2.7	-2.2	-1.3	-0.7	0.1	1.0	1.6	2.0	2.4	3.6	3.5	1.5	1.4	0.3	-0.9	-1.6	-2.5	-3.4	-3.4	3.6	-0.4	24
16	-3.9	-4.1	-4.2	-4.1	-4.4	-4.6	-3.9	-2.1	-0.6	1.3	2.7	4.1	5.2	5.7	6.4	7.0	7.0	6.9	7.6	4.0	1.1	-0.6	-0.7	-1.6	-4.6	7.6	1.0	24
17	-1.2	-0.9	0.1	-0.3	-0.8	-1.4	-1.4	-1.5	-1.1	-0.9	-1.1	-0.9	-0.4	-0.2	-0.3	-0.7	-1.4	-2.0	-2.6	-3.2	-4.0	-4.6	-4.8	-5.5	-5.5	0.1	-1.7	24
18	-6.0	-6.2	-6.5	-6.7	-6.9	-7.1	-7.1	-6.8	-6.3	-5.5	-4.8	-4.0	-3.3	-2.6	-2.5	-2.9	-2.4	-2.5	-2.9	-3.3	-3.7	-4.1	-4.4	-5.7	-7.1	-2.4	-4.8	24
19	-6.9	-7.6	-7.7	-8.7	-9.2	-9.2	-7.7	-5.4	-3.6	-2.0	-0.4	1.6	2.8	3.4	4.5	5.3	6.5	7.1	6.8	5.3	3.3	3.7	3.6	3.9	-9.2	7.1	-0.4	24
20	3.7	4.3	3.0	2.3	1.6	1.4	1.5	3.3	5.2	7.8	8.1	8.1	7.6	5.7	2.5	1.5	1.6	1.6	0.9	0.1	-0.7	-1.0	-1.3	-1.7	-1.7	8.1	2.8	24
21	-1.4	-1.4	-1.4	-1.4	-1.6	-1.6	-1.4	-1.1	-0.6	0.1	0.6	1.3	2.2	2.3	3.7	4.4	4.6	4.6	4.2	3.1	0.7	0.4	-0.2	-1.5	-1.6	4.6	0.8	24
22	-1.4	-1.4	-1.3	-1.5	-1.5	-1.5	-1.3	-0.2	1.0	1.8	2.7	3.8	4.1	4.2	4.6	4.8	4.8	4.5	3.4	2.2	1.0	0.1	-0.5	-0.8	-1.5	4.8	1.3	24
23	-0.8	-0.9	-1.1	-1.3	-1.8	-2.2	-2.7	-2.7	-2.4	-1.5	-0.6	0.1	0.6	0.7	0.7	0.9	0.7	0.5	0.2	-0.2	-0.6	-0.9	-1.2	-1.1	-2.7	0.9	-0.7	24
24	-1.1	-1.3	-1.5	-1.8	-2.0	-2.1	-1.9	-1.5	-1.1	-0.3	0.2	1.6	1.7	1.8	2.0	1.9	2.5	2.2	1.6	1.2	0.6	0.0	-0.6	-1.4	-2.1	2.5	0.0	24
25	-2.2	-3.2	-4.0	-4.2	-3.9	-4.1	-0.7	0.4	1.9	3.2	3.8	4.3	4.3	5.3	5.7	5.8	5.8	6.0	6.1	4.2	2.2	1.2	0.4	-0.1	-4.2	6.1	1.6	24
26	-0.6	-0.9	-1.2	-1.6	-1.8	-1.6	-0.8	0.2	1.9	2.5	3.2	4.0	4.6	5.0	6.2	7.9	7.2	6.5	6.2	4.2	2.3	0.9	0.0	-1.0	-1.8	7.9	2.2	24
27	-0.9	-1.0	-1.4	-1.6	-2.0	-2.0	-0.6	1.2	3.2	4.3	5.6	6.0	6.5	7.3	8.0	8.1	8.1	8.5	7.9	6.0	5.3	2.1	1.6	2.1	-2.0	8.5	3.4	24
28	0.9	-0.4	-1.0	-1.3	-1.3	-0.9	0.3	2.0	5.0	7.2	10.0	11.7	12.3	12.6	13.2	13.1	11.0	10.0	8.5	7.1	6.3	5.2	4.9	4.5	-1.3	13.2	5.9	24
29	3.2	2.0	1.7	1.7	2.2	1.7	2.7	4.8	6.8	8.8	10.5	11.4	11.9	13.5	14.1	13.2	12.8	13.7	13.1	10.5	8.4	8.1	7.2	6.8	1.7	14.1	8.0	24
30	5.8	5.3	4.9	4.5	3.3	1.5	3.1	5.3	7.0	9.0	11.0	11.8	13.0	13.8	13.6	13.3	12.3	9.9	7.1	7.4	5.9	4.4	3.1	4.0	1.5	13.8	7.5	24
HOURLY MAX	5.8	5.4	5.0	4.5	3.9	3.4	3.1	5.3	7.0	9.0	11.0	11.8	13.0	13.8	14.1	13.3	12.8	13.7	13.1	10.5	8.4	8.1	7.2	6.8				
HOURLY AVG	0.4	0.1	-0.2	-0.5	-0.8	-1.1	-0.7	0.4	1.7	2.9	4.0	4.9	5.6	6.1	6.5	6.7	6.4	6.0	5.4	3.9	2.7	1.9	1.2	0.7				

STATUS FLAG CODES

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

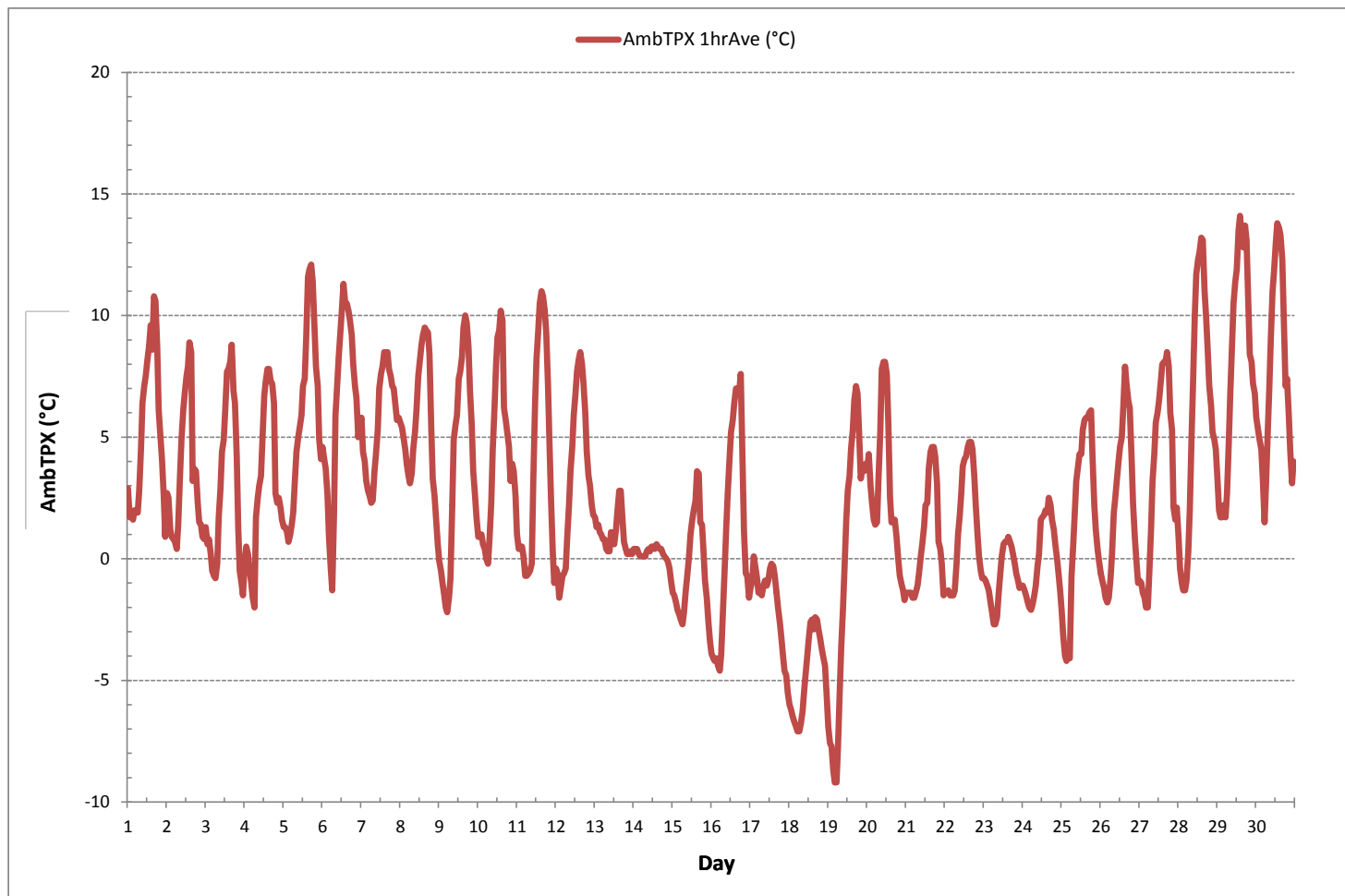
24 HR AVERAGES April 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-9.2	°C	@ HOUR	4, 5	ON DAY(S)	19, 19
MAXIMUM 1-HR AVERAGE:	14.1	°C	@ HOUR	14	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	8.0	°C			ON DAY(S)	29
OPERATIONAL TIME:						720 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	4.3				MONTHLY AVERAGE:	2.7 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

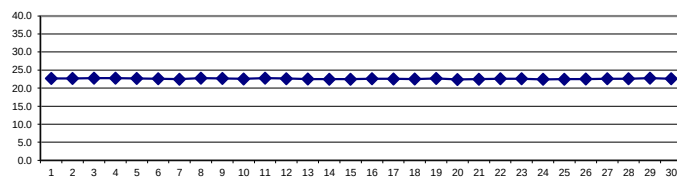
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	22.6	22.5	22.6	22.7	22.7	22.7	22.6	22.6	22.6	22.6	22.7	22.7	22.7	22.8	22.9	22.7	23.1	23.7	23.1	22.3	22.5	22.5	22.7	22.7	22.3	23.7	22.7	24
2	22.7	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.7	22.6	22.6	22.6	22.7	22.8	22.8	22.8	22.2	22.4	22.7	22.7	22.7	22.7	22.7	22.7	22.2	22.8	22.7	24
3	22.7	22.6	22.6	22.7	22.8	22.8	22.9	22.9	22.7	22.5	22.5	22.4	22.5	22.7	22.9	23.4	23.8	23.0	22.7	22.2	22.3	22.5	22.6	22.8	22.2	23.8	22.7	24
4	22.8	22.7	22.8	22.8	22.8	22.8	22.9	22.7	22.4	22.3	22.3	22.4	22.5	22.6	23.2	23.6	23.6	23.5	23.0	22.0	22.4	22.7	22.8	22.8	22.0	23.6	22.8	24
5	22.9	22.9	22.9	22.9	22.9	22.9	23.0	22.8	22.5	22.5	22.4	22.3	22.4	22.1	22.4	23.1	23.6	23.5	23.3	22.5	22.1	22.3	22.3	22.5	22.1	23.6	22.7	24
6	22.5	22.6	22.7	22.5	22.6	22.6	22.8	22.7	22.8	22.0	22.3	23.1	23.8	23.5	23.2	22.7	22.1	22.1	22.0	22.0	22.3	22.3	22.3	22.4	22.0	23.8	22.6	24
7	22.4	22.4	22.5	22.5	22.5	22.6	22.6	22.5	22.5	22.4	22.3	22.5	22.3	22.4	22.6	22.7	22.6	22.6	22.4	22.4	22.5	22.4	22.5	22.4	22.3	22.7	22.5	24
8	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.5	22.8	23.5	23.6	23.4	23.4	23.2	22.2	22.3	22.5	22.6	22.6	22.2	23.6	22.7	24
9	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.6	22.4	22.3	22.3	22.4	22.5	22.4	23.3	23.5	23.4	23.1	22.1	22.2	22.4	22.5	22.5	22.1	23.5	22.7	24
10	22.6	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.5	22.4	22.4	22.4	22.5	22.3	22.7	23.3	22.5	22.4	22.2	22.3	22.4	22.5	22.6	22.5	22.2	23.3	22.6	24
11	22.6	22.6	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.5	22.6	23.1	23.2	23.4	23.4	23.5	23.4	23.1	22.2	22.3	22.3	22.3	22.5	22.2	23.5	22.7	24
12	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.5	22.4	22.7	23.4	23.4	23.3	23.2	22.6	22.3	22.4	22.4	22.5	22.5	22.3	23.4	22.6	24
13	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.5	24
14	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.4	22.4	22.4	22.3	22.3	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.3	22.5	22.5	24
15	22.5	22.5	22.6	22.5	22.6	22.7	22.6	22.6	22.6	22.5	22.5	22.4	22.4	22.3	22.4	22.6	22.4	22.1	22.2	22.2	22.3	22.5	22.6	22.6	22.1	22.7	22.5	24
16	22.7	22.7	22.7	22.7	22.8	22.8	22.8	22.6	22.5	22.2	22.2	22.3	22.5	22.5	22.6	22.9	23.1	22.9	22.9	22.1	22.1	22.3	22.5	22.5	22.1	23.1	22.6	24
17	22.6	22.5	22.6	22.5	22.6	22.5	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.7	22.8	22.5	22.8	22.6	24
18	22.7	22.8	22.7	22.6	22.6	22.5	22.4	22.3	22.4	22.7	22.6	22.6	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.6	22.6	22.3	22.8	22.5	24
19	22.9	22.9	22.8	22.7	22.6	22.4	22.3	22.5	22.8	22.5	22.4	22.5	22.6	22.8	23.2	22.5	23.3	23.3	23.1	22.4	22.1	22.3	22.3	22.4	22.1	23.3	22.7	24
20	22.4	22.5	22.4	22.4	22.4	22.5	22.5	22.4	22.3	22.6	22.6	22.5	22.5	22.4	22.2	22.2	22.2	22.2	22.4	22.4	22.4	22.4	22.5	22.5	22.2	22.6	22.4	24
21	22.6	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.6	22.7	22.5	22.5	22.4	22.2	22.5	22.6	22.5	22.2	22.7	22.5	24
22	22.7	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.6	22.6	22.6	22.7	22.7	22.7	22.6	22.5	22.4	22.5	22.5	22.6	22.4	22.7	22.6	24
23	22.6	22.7	22.7	22.7	22.8	22.7	22.7	22.6	22.7	22.7	22.6	22.6	22.6	22.5	22.6	22.5	22.6	22.5	22.6	22.6	22.5	22.6	22.6	22.6	22.5	22.8	22.6	24
24	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.6	22.6	21.9	22.3	22.3	22.0	22.3	22.4	22.3	22.3	22.4	22.3	22.4	22.4	22.4	22.5	22.5	21.9	22.7	22.4	24
25	22.5	22.6	22.8	22.7	22.7	22.7	22.8	22.6	22.5	22.4	22.4	22.4	22.3	22.4	22.4	22.3	22.3	22.3	22.1	22.2	22.3	22.5	22.5	22.5	22.1	22.8	22.5	24
26	22.5	22.6	22.7	22.6	22.7	22.7	22.7	22.6	22.5	22.4	22.4	22.4	22.5	22.5	22.6	22.8	22.5	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.4	22.8	22.5	24
27	22.6	22.6	22.6	22.7	22.7	22.7	22.7	22.5	22.4	22.3	22.4	22.4	22.5	22.7	23.4	23.2	23.1	22.8	22.5	22.2	22.3	22.3	22.3	22.5	22.2	23.4	22.6	24
28	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.5	22.4	22.3	22.3	22.7	23.2	23.3	23.4	23.5	23.1	22.9	22.7	21.8	22.0	22.1	22.1	22.2	21.8	23.5	22.6	24
29	22.2	22.3	22.3	22.4	22.4	22.4	22.5	22.6	22.5	22.5	22.6	22.5	23.2	23.2	23.5	23.7	23.6	23.8	23.8	23.2	22.6	22.2	22.1	22.3	22.1	23.8	22.8	24
30	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.2	22.3	22.5	22.5	23.0	23.2	23.4	23.5	23.4	23.4	23.1	22.9	22.1	22.1	21.9	22.2	22.3	21.9	23.5	22.6	24
HOURLY MAX	22.9	22.9	22.9	22.9	22.9	22.9	23.0	22.9	22.8	22.7	22.7	23.1	23.8	23.5	23.5	23.7	23.8	23.8	23.8	23.2	22.7	22.7	22.8	22.8				
HOURLY AVG	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.6	22.6	22.5	22.5	22.5	22.6	22.7	22.8	22.9	22.9	22.8	22.7	22.3	22.4	22.4	22.5	22.5				

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 April 2017

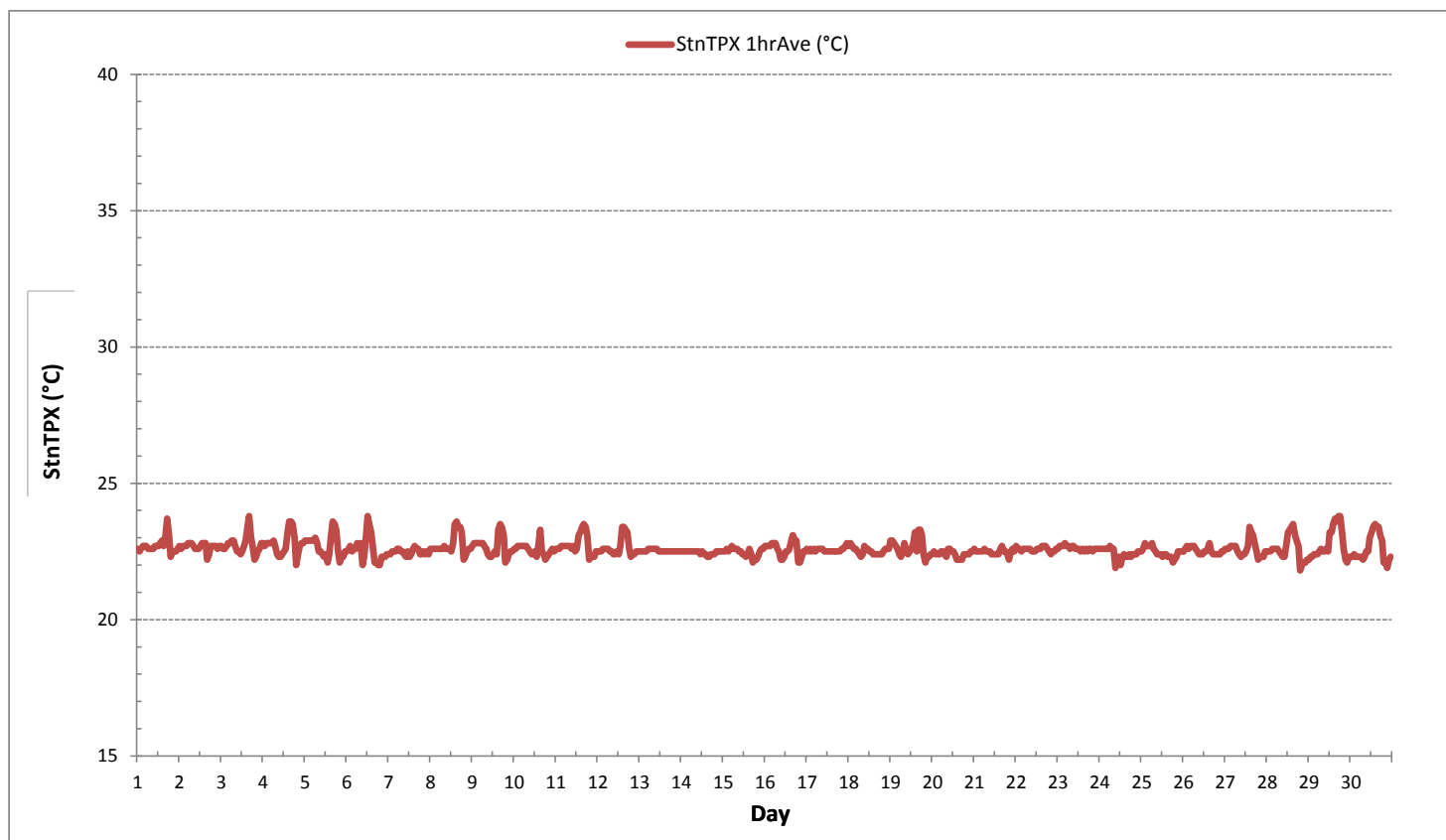


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	21.8	°C	@ HOUR	19	ON DAY(S)	28
MAXIMUM 1-HR AVERAGE:	23.8	°C	@ HOUR	16, VAR	ON DAY(S)	3, 29
MAXIMUM 24-HR AVERAGE:	22.8	°C			ON DAY(S)	4, 29

OPERATIONAL TIME:	720	hrs
AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.3	
MONTHLY AVERAGE:	22.6	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100A Sulphur Dioxide Analyzer Calibration

Date:	April 6, 2017	Barometric Pressure:	27.47 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	22
Location/Station Name:	Reno	Weather Conditions:	Mainly sunny
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	9:30	Performed By/Reviewer:	Limin Li Trina Whitsitt
End Time 24 hr. (mst):	14:05	Cal Gas Expiry Date:	December 8, 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:	March 1, 2017	As Found C.F.:	1.001
Previous C.F.:	1.000	New C.F.:	0.999

Calibrator:

Flow Meter ID's:	sn: 108646 / sn: 4425
Make & Model:	Sabio 2010
Serial #:	17200415
Cal Gas Cylinder I.D. #:	EY0000769
Cal Gas Conc. (ppm):	50.5

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

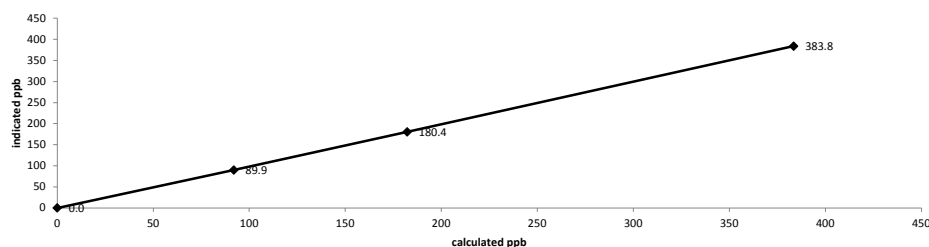
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	6277	0.00	6277	0.0	0.5	n/a
as found high	6232	47.69	6280	383.5	383.8	1.001
adjusted zero	6277	0.00	6277	0.0	0.0	n/a
adjusted high	6232	47.69	6280	383.5	383.8	0.999
mid	6346	22.99	6369	182.3	180.4	1.010
low	6360	11.61	6372	92.0	89.9	1.024
calibrator zero	6404	0.00	6404	0.0	0.2	n/a
Average C.F. =						1.011

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.998		.95-1.05
b (Intercept as % of full scale) =	0.26%		± 3% F.S.
% change in C.F. from last cal =	-0.06%		± 10%

API 100A Sulphur Dioxide Analyzer Calibration

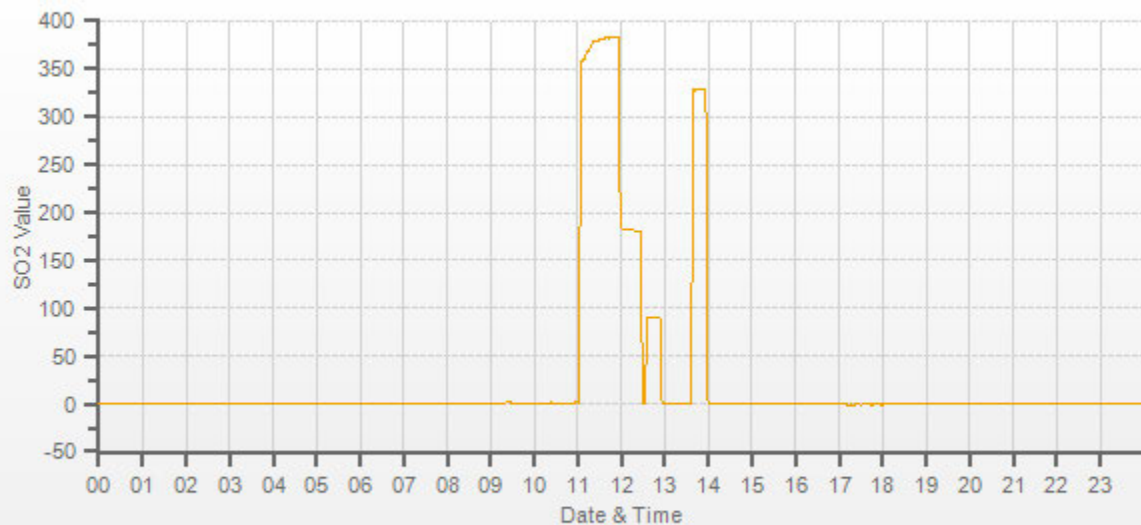


As found:	As left:
SLOPE: 0.981	SLOPE: 0.982
OFFSET: 44.2	OFFSET: 45.5
HVPS: 763	HVPS: 763
DCPS: 2561	DCPS: 2561
RCELL TEMP: 50.4	RCELL TEMP: 50.0
BOX TEMP: 30.2	BOX TEMP: 28.8
PMT TEMP: 7.1	PMT TEMP: 7.2
IZS TEMP: 45	IZS TEMP: 45.0
Converter Temp: n/a	Converter Temp: n/a
PRES: 24.8	PRES: 24.6
SAMP FL: 677	SAMP FL: 673
PMT: 64.4	PMT: 64.9
UV LAMP: 2295	UV LAMP: 2306
LAMP RATIO: 102	LAMP RATIO: 102.9
STR. LGT: 21.7	STR. LGT: 22.3
DRK PMT: 25.5	DRK PMT: 25.6
DRK LMP: -17.0	DRK LMP: -17
Expected Value: 312.0	Expected Value: 328.1

Comments:

The analyzer sample inlet filter was changed.

No span adjustment.
Flow measurements done after mid point.



— SO2[ppb]



API 100A Sulphur Dioxide Analyzer Calibration

Date:	April 7, 2017	Barometric Pressure:	27.26 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	22
Location/Station Name:	Reno	Weather Conditions:	Mainly sunny
Parameter:	Sulphur Dioxide	Calibration Purpose:	Repeat
Start Time 24 hr. (mst):	10:10	Performed By/Reviewer:	Limin Li Trina Whitsitt
End Time 24 hr. (mst):	14:25	Cal Gas Expiry Date:	December 8, 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:	April 6, 2017	As Found C.F.:	0.985
Previous C.F.:	0.999	New C.F.:	1.000

Calibrator:

Flow Meter ID's:	sn: 108646 / sn: 4425
Make & Model:	Sabio 2010
Serial #:	17200415
Cal Gas Cylinder I.D. #:	EY0000769
Cal Gas Conc. (ppm):	50.5

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

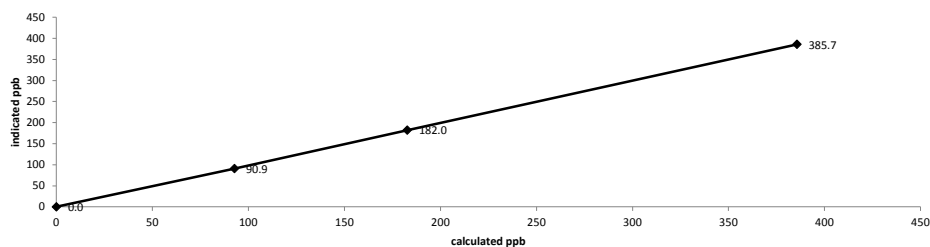
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	6175	0.00	6175	0.0	0.0	n/a
as found high	6185	47.60	6233	385.7	391.5	0.985
adjusted zero	6175	0.00	6175	0.0	0.0	n/a
adjusted high	6185	47.60	6233	385.7	385.7	1.000
mid	6371	23.14	6394	182.8	182.0	1.004
low	6387	11.75	6399	92.7	90.9	1.020
calibrator zero	6410	0.00	6410	0.0	-0.4	n/a
Average C.F. =						1.008

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.998		.95-1.05
b (Intercept as % of full scale) =	0.18%		± 3% F.S.
% change in C.F. from last cal =	1.39%		± 10%

API 100A Sulphur Dioxide Analyzer Calibration

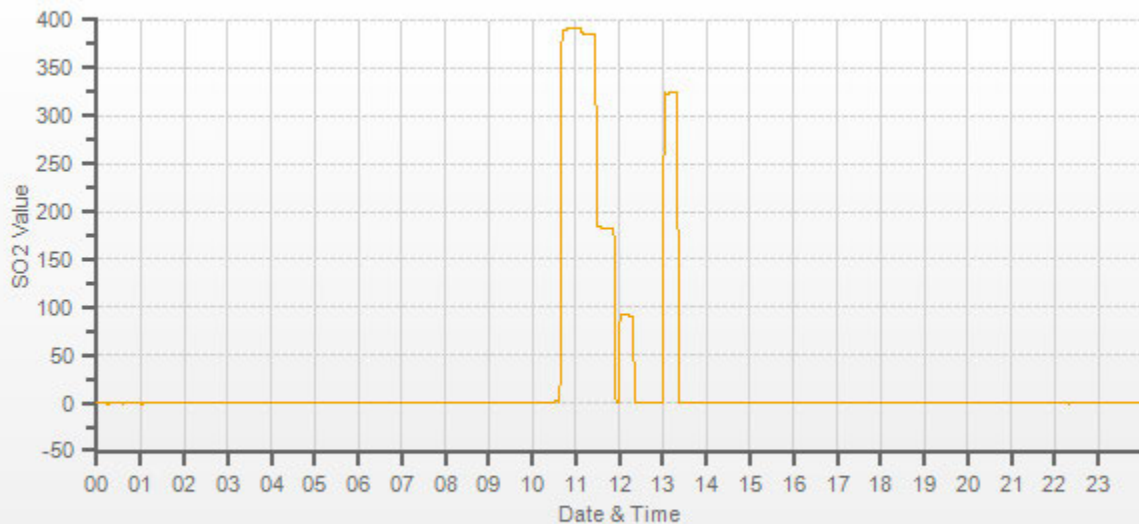


As found:	As left:
SLOPE: 0.982	SLOPE: 0.968
OFFSET: 45.5	OFFSET: 45.5
HVPS: 763	HVPS: 763
DCPS: 2561	DCPS: 2561
RCELL TEMP: 50.0	RCELL TEMP: 50.0
BOX TEMP: 29.5	BOX TEMP: 30.3
PMT TEMP: 7.2	PMT TEMP: 7.2
IZS TEMP: 45.1	IZS TEMP: 45.0
Converter Temp: n/a	Converter Temp: n/a
PRES: 24.8	PRES: 24.6
SAMP FL: 674	SAMP FL: 672
PMT: 63.2	PMT: 63.6
UV LAMP: 2181	UV LAMP: 2288
LAMP RATIO: 97.4	LAMP RATIO: 102.2
STR. LGT: 22.3	STR. LGT: 22.3
DRK PMT: 25.6	DRK PMT: 25.7
DRK LMP: -17.0	DRK LMP: -17
Expected Value: 312.0	Expected Value: 324.4

Comments:

Flow measurements done after mid point.

SO2[ppb] Station: PRAMP_RENO Daily: 2017/04/07 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date:	April 6, 2017	Barometric Pressure:	27.47 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	22
Location/Station Name:	Reno	Weather Conditions:	Mainly sunny
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	9:30	Performed By/Reviewer:	Limin Li Trina Whitsitt
End Time 24 hr. (mst):	14:05	Cal Gas Expiry Date:	January 6, 2018
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA-CDN 101 s/n 534

Analyzer:

ID# or Serial Number:	1162420022	Range ppb:	100
Last Calibration Date:	March 1, 2017	As Found C.F.:	1.009
Previous C.F.:	1.000	New C.F.:	0.997

Calibrator:

Flow Meter ID's:	sn: 108646 / sn: 4425
Make & Model:	EnviroNics 2000
Serial #:	1991
Cal Gas Cylinder I.D. #:	BLM 002508
Cal Gas Conc. (ppm):	10.2

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO₂ Scrubber Check (10 mins.)

Start/End Time 24 hr.:	11:45-11:57
Target Concentration (ppb):	780
Result (ppb):	0.1
Zero Corrected Result (ppb):	0

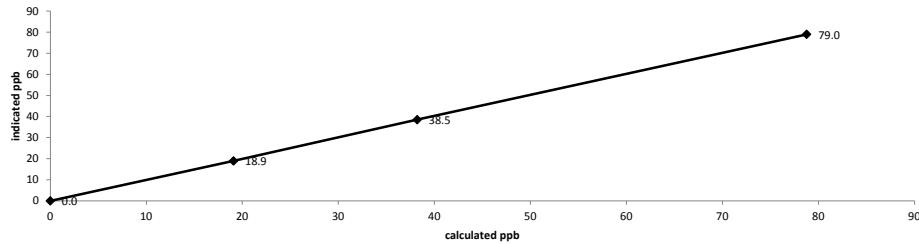
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	7389	0.00	7389	0.0	-0.2	n/a
as found high	7348	57.19	7405	78.8	77.9	1.009
adjusted zero	7389	0.00	7389	0.0	0.0	n/a
adjusted high	7348	57.19	7405	78.8	79.0	0.997
mid	7418	27.90	7446	38.2	38.5	0.993
low	7410	13.89	7424	19.1	18.9	1.010
calibrator zero	7456	0.00	7456	0.0	0.0	n/a
Average C.F. =						1.000

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.996		.95-1.05
b (Intercept as % of full scale) =	0.06%		± 3% F.S.
% change in C.F. from last cal =	-0.86%		± 10%

Thermo 43i Total Reduced Sulphur Analyzer Calibration



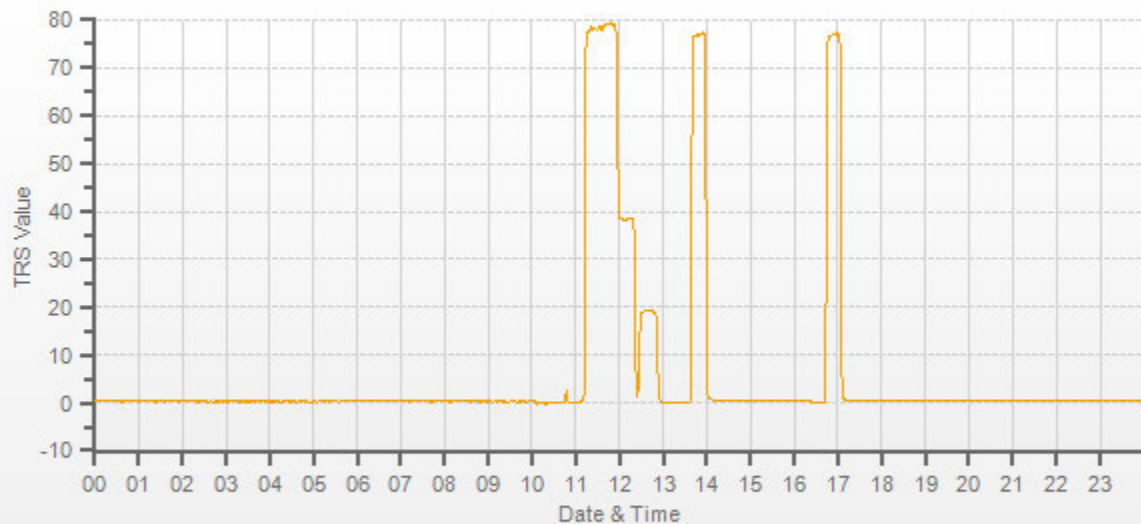
As found:	As left:
BKG: 2.3	BKG: 2.19
COEF: 0.999	COEF: 1.007
PMT: -706	PMT: -706
FLASH: 1010	FLASH: 1010
INTERNAL: 31.6	INTERNAL: 30.9
CHAMBER: 44.9	CHAMBER: 45.2
PERM OVEN GAS: 35.00	PERM OVEN GAS: 35
PERM OVEN HEATER: 34.14	PERM OVEN HEATER: 34.14
PRESSURE: 632.2	PRESSURE: 631.6
SAMPLE FLOW: 0.408	SAMPLE FLOW: 0.408
LAMP INTENSITY: 83	LAMP INTENSITY: 83
CONVERTER: 825	CONVERTER: 825
CONVERTER SET: 825	CONVERTER SET: 825
Expected Value: 73.9	Expected Value: 77.2

Comments:

The analyzer sample inlet filter was changed. The analyzer cooling fan filter(s) were cleaned.

Flow measurements done after mid point.

TRS[ppb] Station: PRAMP_RENO Daily: 2017/04/06 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]



Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date:	April 24, 2017	Barometric Pressure:	27.57 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	22
Location/Station Name:	Reno	Weather Conditions:	Light snow
Parameter:	Total Reduced Sulphur	Calibration Purpose:	repeat
Start Time 24 hr. (mst):	9:40	Performed By/Reviewer:	Limin Li Trina Whitsitt
End Time 24 hr. (mst):	13:10	Cal Gas Expiry Date:	January 6, 2018
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA-CDN 101 s/n 534

Analyzer:

ID# or Serial Number:	1162420022	Range ppb:	100
Last Calibration Date:	April 6, 2017	As Found C.F.:	1.036
Previous C.F.:	0.997	New C.F.:	0.999

Calibrator:

Flow Meter ID's:	sn:108646/sn:4425
Make & Model:	Sabio 2010
Serial #:	17200415
Cal Gas Cylinder I.D. #:	BLM 002508
Cal Gas Conc. (ppm):	10.2

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO₂ Scrubber Check (10 mins.)

Start/End Time 24 hr.:	11:45-11:57
Target Concentration (ppb):	780
Result (ppb):	0.1
Zero Corrected Result (ppb):	0

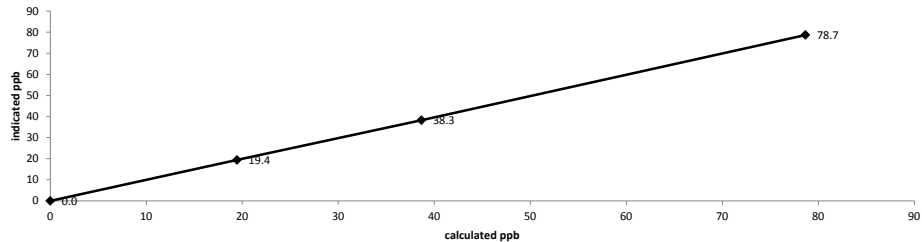
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	7173	0.00	7173	0.0	0.0	n/a
as found high	7106	55.22	7161	78.7	75.9	1.036
adjusted zero	7173	0.00	7173	0.0	0.0	n/a
adjusted high	7106	55.22	7161	78.7	78.7	0.999
mid	7346	27.95	7374	38.7	38.3	1.009
low	7369	14.08	7383	19.5	19.4	1.003
calibrator zero	7173	0.00	7173	0.0	0.1	n/a
Average C.F. =						1.004

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	1.000		.95-1.05
b (Intercept as % of full scale) =	0.11%		± 3% F.S.
% change in C.F. from last cal =	-3.94%		± 10%

Thermo 43i Total Reduced Sulphur Analyzer Calibration

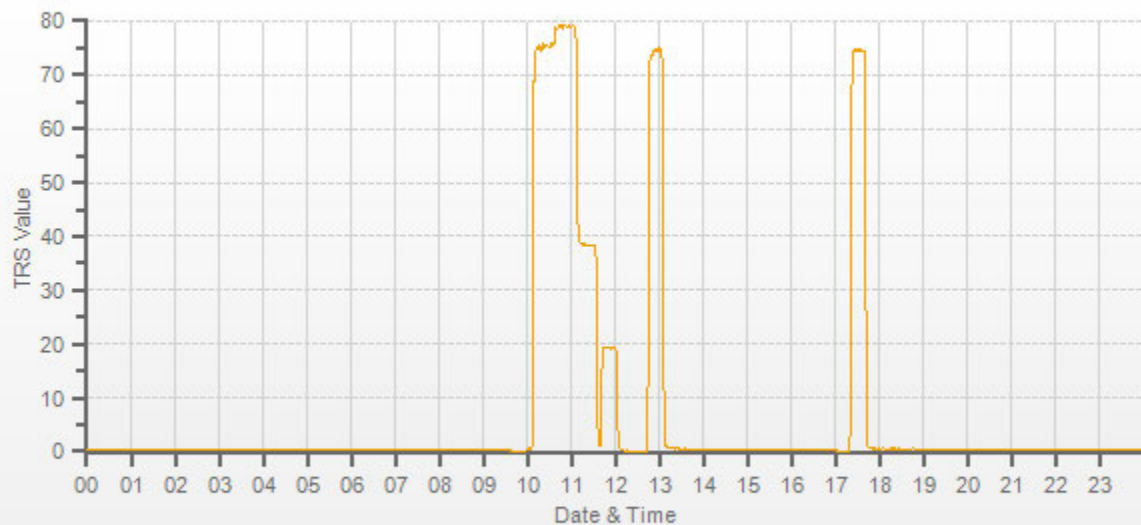


As found:	BKG:	2.18	As left:	BKG:	2.23
	COEF:	1.007		COEF:	1.036
	PMT:	-706		PMT:	-706
	FLASH:	1008		FLASH:	1007
	INTERNAL:	30.7		INTERNAL:	31
	CHAMBER:	44.9		CHAMBER:	45
	PERM OVEN GAS:	35.00		PERM OVEN GAS:	35
	PERM OVEN HEATER:	34.14		PERM OVEN HEATER:	34.14
	PRESSURE:	634.3		PRESSURE:	639.2
	SAMPLE FLOW:	0.408		SAMPLE FLOW:	0.411
	LAMP INTENSITY:	83		LAMP INTENSITY:	83
	CONVERTER:	825		CONVERTER:	825
	CONVERTER SET:	825		CONVERTER SET:	825
	Expected Value:	76.9		Expected Value:	74.5

Comments:

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

Flow measurements done after mid point.



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 6, 2017	Barometric Pressure:	27.47 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	23
Location/Station Name:	Reno	Weather Conditions:	Mainly sunny
Parameter:	CH ₄ / NMHC / THC	Calibration Purpose:	routine monthly
Start/End Time 24 hr. (mst):	13:30/16:45	Performed By/Reviewer:	Limin Li Trina Whitsitt
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	November 24, 2022

Analyzer:		Correction Factors:	
ID# or Serial Number:	1314057759	Previous C.F.:	As Found C.F.:
Measured Flow:	1300	CH ₄ =	1.000
Last Calibration Date:	March 1, 2017	NMHC =	0.999
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC =	0.999

Calibrator:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm
Flow Meter ID's:	sn: 108646 / sn: 4425	
Make & Model:	Sabio 2010	
Serial #:	17200415	
Cal Gas Cylinder I.D. #:	LL165367	
CH ₄ Cylinder Conc. =	590.0	207.0 = C ₂ H ₆ Cylinder Conc.
CH ₄ as C ₂ H ₆ =	569.3	1159.3 = 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	2493	0.00	2493	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2495	64.89	2560	14.96	14.43	29.39	15.71	14.33	30.04	0.952	1.007	0.978
adjusted zero	2493	0.00	2493	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2495	64.89	2560	14.96	14.43	29.39	14.96	14.43	29.39	1.000	1.000	1.000
mid	2477	32.29	2509	7.59	7.33	14.92	7.47	7.28	14.75	1.016	1.006	1.011
low	2477	14.45	2491	3.42	3.30	6.72	3.36	3.28	6.64	1.018	1.007	1.013
calibrator zero	2484	0.00	2484	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =										1.012	1.004	1.008

Linear Regression/Calibration Results:				LIMITS
Correlation Coefficient =	CH ₄	NMHC	THC	> or = 0.995
Slope =	1.001	1.000	1.000	.95-1.05
b (Intercept as % of full scale) =	-0.25%	-0.09%	-0.17%	± 3% F.S.
% change in C.F. from last cal =	4.80%	-0.80%	2.08%	± 10%

As found:				As left:			
Interface Board Voltages:	Bias Supply:	-290.3		Calibration History cnt'd:	NM Peak Area:	89649	
Temperatures:	Detector Oven:	175.1		Crucial Settings:	Methane Start:	8	
	Filter:	175.0			Methane End:	16	
	Column Oven:	75.0			Backflush:	18	
	Internal:	35.5			NMHV Start:	26	
Cylinder Pressures/reg.:	Carrier:	1150	50		NMHC End:	56	
	Fuel:	600	50	Run History>1:	Date:	06MAR17	
	Span Gas:	2000	22		Time:	12:36	
	Zero Air Generator:	45			CH ₄ PK HT:	2481	
Internal Pressures:	Carrier:	31.3			CH ₄ RT:	11.6	
	Fuel:	41.6			CH ₄ Baseline:	2014	
	Air:	25.9			CH ₄ LOD:	71	
FID Status:	Status:	LIT			CH ₄ SD:	23	
	Counts:	24302			CH ₄ CONC:	1.94	
	Flame:	405.0			NM PK HT:	0	
	Det Base:	175			NM Peak Area:	0	
Flame and Power Stats:	Last Power On:	26Dec2016@17:38			NM CONC:	0.00	
	Flameouts:	1			NM Base Start:	1999	
	Det Oven at Start:	168.8			NM Base End:	2000	
	Col Oven at Start:	74.4			NM LOD:	6	
Calibration History:	Time:	01Mar17 11:03			NM Start IDX:	16	
	Type:	SPAN			NM End IDX:	81	
	Status:	GOOD			NM Max Slope:	4.3e-01	
	Check/Adjust:	ADJUST			NM Min Slope:	-4.3e-01	
	CH ₄ Span Conc:	14.76		Expected Values:	NM PT Count:	0	
	CH ₄ SP Ratio:	0.000784			Previous CH ₄ :	9.78	
	CH ₄ RT:	11.6			Previous NMHC:	13.86	
	CH ₄ PK IDX:	18			Previous THC:	23.65	
	CH ₄ PK HT:	18836			New CH ₄ :	8.72	
	NM Span Conc:	14.29			New NMHC:	11.09	
	NM SP Ratio:	0.000159			New THC:	19.85	

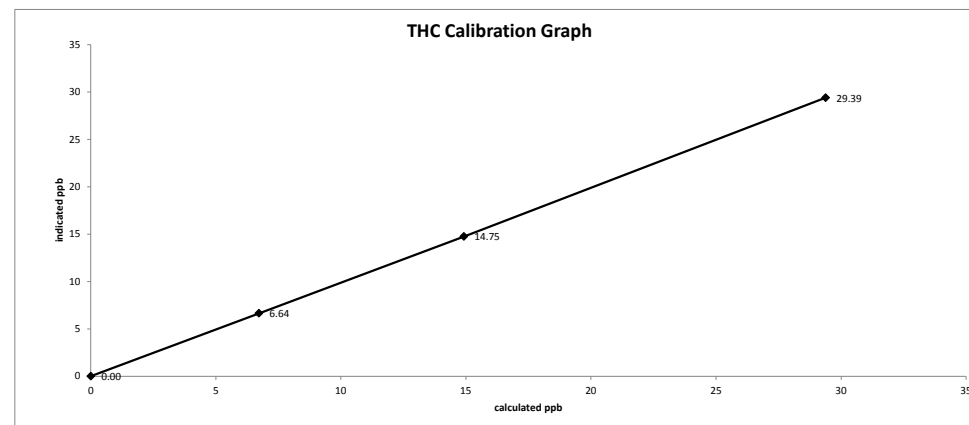
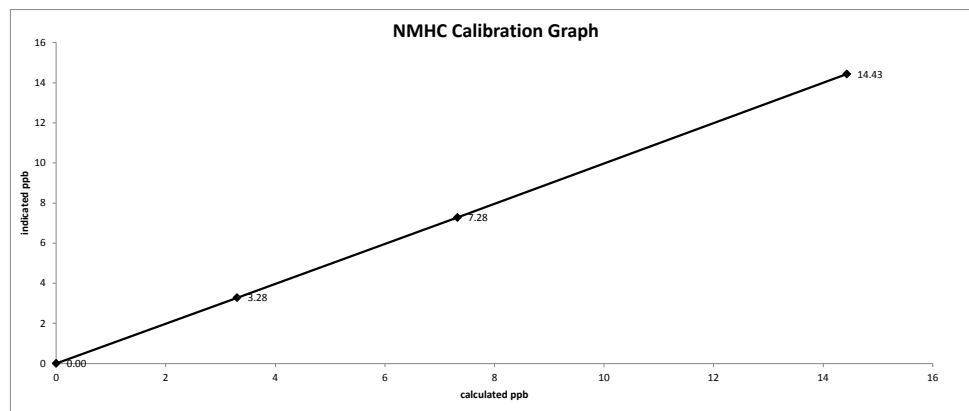
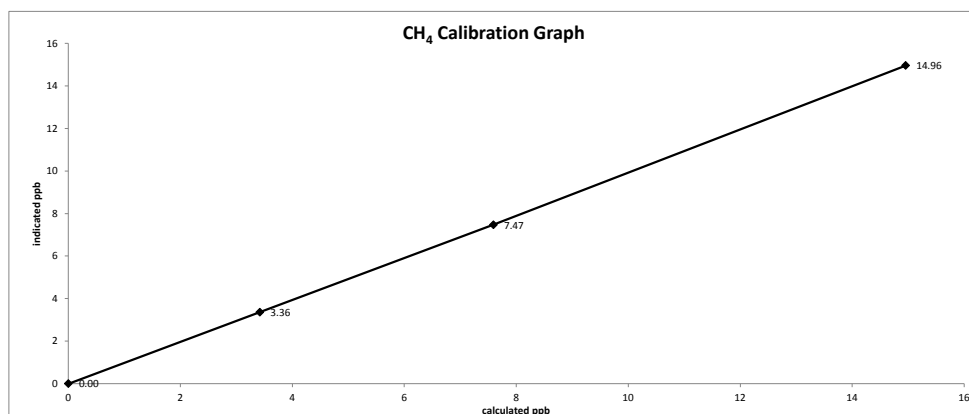
Comments:
The analyzer sample inlet filter was changed.

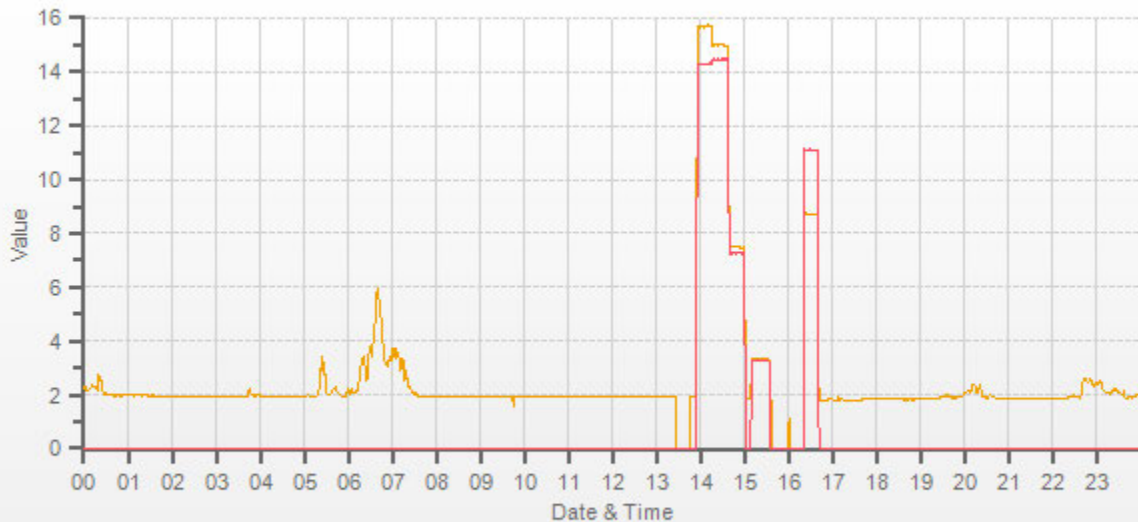
A new span gas cylinder was installed.
The analyzer cooling fan filter(s) were cleaned.

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

Span gas changed.
Flow measurements done after mid point.

Date:	April 6, 2017	Start/End Time 24 hr. (mst):	13:30/16:45
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	Reno	Calibration Method:	Gas Dilution





CH4[ppm] NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP
Audit Location: Reno
Audit Date: February 16, 2017

Performed By: Chris Wesson
Reviewed By: Trina Whitsitt
Start /EndTime (mst): 10:34/11:22

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	149769	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	November 15, 2016	Direction Unit Output Range:	0-360

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	17.6	17.7	17.6	0.999
2000	35.3	35.4	35.3	0.998
3000	52.9	53.0	53.0	0.999
4000	70.6	70.7	70.6	0.999
5000	88.2	88.3	88.3	0.999
6000	105.8	106.0	106.0	0.998
7000	123.5	123.8	123.8	0.997
8000	141.1	141.5	141.5	0.997
9000	158.8	159.3	159.3	0.997
10000	176.4	177.1	177.1	0.996
The audit meets AMD requirements.			Average Correction Factor=	0.998

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	354	0.2	1.5	0.9
30	330	30	328	0.3	1.9	1.1
60	300	61	299	-0.5	1.4	0.9
90	270	90	270	-0.3	0.5	0.4
120	240	120	240	-0.4	0.2	0.3
150	210	150	211	0.0	-0.6	0.3
180	180	180	181	0.0	-1.0	0.5
210	150	210	150	0.4	0.1	0.3
240	120	239	121	1.4	-0.8	1.1
270	90	269	91	1.0	-0.9	1.0
300	60	299	61	1.2	-0.9	1.0
330	30	328	29	1.9	1.2	1.5
355	0	354	0	0.8	0.2	0.5
The audit meets AMD requirements.			Average Absolute Degrees Difference=			0.8

Comments:



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: Christopher Wesson

Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>N/A</u>
Serial Number	<u>17200415</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>May 2015</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL42475</u>	Barometric Pressure	<u>N/A</u>
NO/NOx Concentration	<u>48.5/48.5</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
5029	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5030	80.6	0.777	0.777	0.805	-0.005	0.800	4%	3%
5025	39.4	0.380	0.380	0.394	-0.002	0.392	4%	3%
5028	19.8	0.191	0.191	0.198	-0.001	0.197	4%	3%
Absolute Average Percent Difference							3.65%	3.09%

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)=	1.0360	0.90-1.10	m (Slope)=	1.0295
b (Intercept % of FS)=	0.0110	± 3% F.S.	b (Intercept % of FS)=	0.0293

Flow	O ₂ Conc	NO Decrease	NO	NO ₂	NOx	% Diff. Vs Audit gas	
5030	Lamp C.	0.000	0.804	-0.004	0.800	NO ₂	% Diff. Limit
5030	1.388	0.495	0.309	0.491	0.800	0%	± 10%
5030	0.745	0.241	0.563	0.239	0.802	1%	± 10%
5030	0.367	0.091	0.713	0.089	0.801	2%	± 10%
Absolute Average Percent Difference							1% ± 10%

LINEAR REGRESSION ANALYSIS

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

NO ₂		LIMITS
Correlation=	1.0000	≥ 0.995
m (Slope)=	0.9988	0.90-1.10
b (Intercept % of FS)=	-0.2760	± 3% F.S.

AENV Standards		NO _x 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>
		Last Calibration Date	<u>May 18, 2016</u>
		Full Scale (ppm)	<u>1.0</u>

COMMENTS: Contains 50.3 ppm SO₂. Flows not measured as per Chapter 7, Section 5 of AMD.

Auditor: Al Clark
Operator Signature: [Signature]

Date: May 18, 2016
Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Mike</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>EnviroNics 2000</u>	Make/Model	<u>Bios Defender 530</u>
Serial Number	<u>1991</u>	Serial Number	<u>HI148944 Lo 152019</u>
Last Verification Date	<u>March 31, 2016</u>	Temperature (°C)	<u>24.5</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>699</u>
NO [PPM]	<u>49.0</u> NOx [PPM] <u>49.0</u>		
Expiry Date	<u>December 8, 2019</u>		

Dilution Flow (sccm)			
Pt. #1 <u>4902</u>	Pt. #2 <u>4935</u>	Pt. #3 <u>4957</u>	
Gas Flow (sccm)			
Pt. #1 <u>79.3</u>	Pt. #2 <u>38.7</u>	Pt. #3 <u>19.4</u>	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4976	0.0	0.0000	0.0000	0.0001	0.0000	0.0001	Limit ± 10%	
4981	79.3	0.7801	0.7801	0.7898	0.0000	0.7898	1%	1%
4972	38.7	0.3814	0.3814	0.3841	0.0002	0.3843	1%	1%
4976	19.4	0.1910	0.1910	0.1913	0.0003	0.1916	0%	0%
Absolute Average Percent Difference							1%	1%

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

<u>NO</u>	<u>LIMITS</u>	<u>NOx</u>
Correlation= 1.0000	≥ 0.990	Correlation= 1.0000
m (Slope)= 1.0130	0.90-1.10	m (Slope)= 1.0129
b (Intercept % of FS)= -0.1190	± 3% F.S.	b (Intercept % of FS)= -0.1029

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4981	0.000	0.0000	0.7925	-0.0001	0.7924	NO ₂	% Diff. Limit
4981	0.400	0.5347	0.2578	0.5279	0.7857	-1%	± 10%
4981	0.200	0.2490	0.5435	0.2478	0.7913	0%	± 10%
4981	0.090	0.1090	0.6835	0.1095	0.7927	1%	± 10%
Absolute Average Percent Difference						0%	± 10%

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

<u>NO₂</u>	<u>LIMITS</u>
Correlation= 1.0000	≥ 0.995
m (Slope)= 0.9864	0.90-1.10
b (Intercept % of FS)= 0.1136	± 3% F.S.

AENV Standards		NO_x Analyzer	
Audit Calibrator		Make/Model	<u>Thermo 42i</u>
Make/Model	<u>Thermo 146i</u>	Serial/AMU Number	<u>1868</u>
Serial/AMU Number	<u>1809</u>	Last Calibration Date	<u>March 15, 2017</u>
SRM Gas Cylinder No.	<u>CAL018140</u>	Full Scale (ppm)	<u>1.0</u>
Cylinder Conc. (ppm)	<u>48.79</u>	Cylinder Gas Expiry Date	<u>March 28, 2019</u>

COMMENTS: Gas has ~50ppm SO2

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: March 16, 2017
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-436CGA

Company: Maxxam **Operator's Name:** Chris
Cylinder #: EY0000769 **Concentration PPM:** 50.5 **Tolerance(%)** 1.6 **Certified By:** Praxair
Expiry Date: December 8, 2019

Reference Calibrator and Gas:

Make/Model: Thermo 146i
Serial Number: AMU 1809
Last Verification Date: January 26, 2017
Gas Type: SO2 **Conc.** 98.07
Cylinder Number: CAL016625
Expiry Date: January 5, 2019

Flow Measurement Device:

Make/Model: Bios Befiner 220
Serial Number: AMU1941
Temp. °C: 24.4
B.P. 704.7

Reference Analyzer:

Make/Model: Themro 43C **Serial/AMU Number:** AMU 1623
Instrument Settings: **Zero:** 9.5 **Span:** 1.023 **Range:** 1.0
Last Calibration: **Date:** 25-Jan-17 **C.F.** 1.000 **Done By:** SB

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
4911	0.0	0.000			
4918	77.4	0.801	0.01574	63.540	50.9
4918	38.5	0.398	0.00783	127.740	50.9
4915	19.2	0.196	0.00391	255.990	50.0
Average Cylinder Concentration:					50.6

Previous Stated Concentration PPM: 50.5

Percent variance from Stated: 0.2

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ **COMMENTS:** _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Shea Beaton
Operator Signature: _____

Date: January 26, 2017
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-338CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: BLM002508 Concentration PPM: 10.2 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU1690
Last Verification Date: March 31, 2015
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 689 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 14.5 Span: 1.035 Range: 0.1
Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000			
5080	38.2	0.0725	0.00752	132.984	9.6
5078	17.9	0.0340	0.00353	283.687	9.6
5066	9.1	0.0170	0.00180	556.703	9.5
Average Cylinder Concentration:					9.6

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: 6.0

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐ COMMENTS: _____
< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☒
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: March 31, 2015
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-029CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: LL165367 **Conc CH₄ (PPM)** 590/207 **Tolerance (%)** 2 **Certified By:** Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1691
Last Verification Date May 21, 2015
Gas Type CH₄ **Conc.** 999.2
Cylinder Number D751932
Gas Type C₃H₈ **Conc.** 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1650
Temp. °C 24.0 C
B.P. 703 mmhg

Reference Analyzer:

Make/Model Teco 55C **Serial/AMU Number:** 1643
Instrument Settings **Zero:** N/A **Span:** N/A **Range:** 20
Last Calibration: **Date:** May 21/15 **C.F.** 1.000 **Done By:** Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
2600	0.0	0.00	0.00	~~0.02005~~	~~49.883~~	~~602~~	~~206~~
2569	51.5	12.06	11.37	0.02005	49.883	602	206
3549	22.3	3.77	3.57	0.00628	159.148	600	207
3523	10.4	1.77	1.70	0.00295	338.750	600	209
Average Cylinder Concentration:						600	207

CH₄ **C₃H₈**
Previous Stated Concentration PPM: 590 207
Percent variance from Stated: 1.8 0.2

Cylinder gas tolerances based on CH₄ only

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ **COMMENTS:** _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark **Date:** May 21, 2015
Operator Signature: _____ **Location:** McIntyre Center Edmonton

APPENDIX III
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 (Last, First, Middle)	Position / Title of the Representative of the Person Responsible
Bim Adeniji	Project Manager Assistant, Customer Service, Air Services
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
☐ Yes ☒ No	
Name of External Person Certifying the Report (Last, First, Middle)	Position / Title of External Person Certifying the Report
NA	NA
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
NA	NA

I certify that I have reviewed and verified the submitted report. I also certify that the report presented with this certification form is complete, accurate and representative of the monitoring results and timeframe.



Signature of the Representative of the Person
Responsible / External Person Certifying the Report

May 24, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u>	Project #: <u>196-2017-04-93-C</u>
Site: <u>Reno Station</u>	Contact: <u>Lily Lin</u>

Level 0 Preliminary Verification



Date May 17, 2017

Level 1 Primary Validation



Date May 17, 2017

Level 2 Final Validation



Date May 24, 2017

Level 3 Independent Data Review



Date May 24, 2017

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.