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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

RENO STATION

JOB #: 196-2018-10-93-C

October 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **November 19, 2018**

Prepared by:

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Project Team Lead, Customer Service, Air Services

Reviewed by:

On behalf of: Cheri Sinclair, B.Sc.
Supervisor, Customer Service, Air Services

SUMMARY

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

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

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

All data collected this month were within the Alberta Ambient Air Quality Objectives and Guidelines (November, 2018).

SO_2: On October 19 at hour 08:00, an additional zero-span check was triggered to assess span response, following the monthly calibration on October 18. One hour of downtime was incurred as a result.

TRS: The initial attempt at the routine monthly calibration on October 18 was aborted as the AMD's calibration requirements were not met when the analyzer was tested at Mid point. Troubleshooting traced the problem to the calibration gas. A successful monthly calibration was subsequently completed on October 19, using an alternate calibration gas. Seven hours of downtime were incurred due to the unsuccessful calibration attempt and the troubleshooting/ corrective actions performed around it.

THC/CH_4/NMHC: After a gas cylinder exchange event on October 1, the analyzer failed to relight due to a configuration error. This problem was corrected via remote connection and the analyzer resumed normal operation on October 2. Thirty-three hours of downtime were incurred due to this event.

The summary of results is presented on the following pages.

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

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

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee Reno Station						MAXIMUM VALUES							OPERATIONAL TIME (%)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO_2 (ppb)	172	48	0	0	0	1	17	6	9.0	SW	0	1	99.9
TRS (ppb)	-	-	-	-	0.37	1.34	12	4	2.8	NNE	0.57	13	99.1
THC (ppm)	-	-	-	-	2.03	2.81	21	19	2.3	SSW	2.21	24	95.6
CH_4 (ppm)	-	-	-	-	2.03	2.81	21	19	2.3	SSW	2.20	24	95.6
NMHC (ppm)	-	-	-	-	0.00	0.02	19	10	3.3	S	0.00	1	95.6
RELATIVE HUMIDITY (%)	-	-	-	-	63	94	29	1	2.8	SW	87	12	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	939	953	9	11	10.1	ESE	951	9	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	2.7	19.8	17	13	12.4	WSW	12.9	17	100.0
STATION TEMPERATURE (°C)	-	-	-	-	22.1	23.7	18	13	10.5	W	23.2	17	100.0
VECTOR WS (kph)	-	-	-	-	2.2	19.9	20	13	-	W	11.7	20	100.0
VECTOR WD (sec)	-	-	-	-	217 (SW)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY

MONTHLY REPORT SUMMARY

Reno Station	Peace River Area Monitoring Program Committee
Plant Name / Location	Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2018	October

CONTINUOUS AMBIENT MONITORING

		ONE - HOUR AVERAGE		24 - HOUR AVERAGE	
PARAMETER	% TIME OPERATIONAL	MAXIMUM VALUES	NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO_2	99.9	0.001 ppm	0	0.000 ppm	0
TRS	99.1	0.001 ppm	-	0.001 ppm	-
THC	95.6	2.81 ppm	-	2.21 ppm	-
CH_4	95.6	2.81 ppm	-	2.20 ppm	-
NMHC	95.6	0.02 ppm	-	0.00 ppm	-
RH	100.0	94 %	-	87 %	-
BP	100.0	953 mb	-	951 mb	-
Ambient TPX	100.0	19.8 °C	-	12.9 °C	-
Station TPX	100.0	23.7 °C	-	23.2 °C	-
Wind Speed	100.0	19.9 kph	-	11.7 kph	-
Wind Direction	100.0	-	-	-	-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO_2 1-Hour Exceedances

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

SO_2 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 (SO_2), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH_4), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

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

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

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

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

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

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

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

Data contained in this monthly report has undergone verification and validation based on the requirements of the AMD (December, 2016) Chapter 6: Ambient Data Quality and Chapter 9: Reporting. The descriptions of the data verification and validation process can be found in Section 5 of this report. Instantaneous data, where applicable, is provided for reference purposes and has not undergone zero correction. The minimum and maximum statistics are highlighted in the data table and are for reference only. The highlighted cells are based on the software's interpretation of the exact position of the minimum or maximum value. The visual presentation of these statistics may not be the obvious choice in a data range due to rounding, truncating or analyzer specifications.

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

SULPHUR DIOXIDE (SO_2)

• Operational time for the monitoring period was 99.9%, equivalent to one hour of downtime.

• The routine monthly calibration was performed on October 18. The expected span value that was set following the daily zero-span check on October 19 was inaccurate, as the analyzer required a longer stabilization period. An additional zero-span check was later triggered at hour 08:00 to assess span response, incurring one hour of downtime on October 19. The expected span value was re-adjusted on October 20, following the daily zero-span check, in order to obtain a more representative reference concentration.

TOTAL REDUCED SULPHUR (TRS)

• Operational time for the monitoring period was 99.1%, equivalent to seven hours of downtime.

• The routine monthly calibration was attempted on October 18 but was aborted as AMD requirements were not met when the analyzer was tested at Mid point. Troubleshooting traced the problem to the calibration gas. The analyzer was restored to the as-found background settings, an additional zero-span check was successfully completed and the analyzer was returned to sampling mode. A successful monthly calibration was subsequently completed on October 19, using an alternate calibration gas. Seven hours of downtime were attributed to the unsuccessful calibration attempt and the troubleshooting/corrective actions performed around it.

TOTAL HYDROCARBONS (THC), METHANE (CH_4) and NON-METHANE HYDROCARBONS (NMHC)

• Operational time for the monitoring period was 95.6%, equivalent to thirty-three hours of downtime.

• The fuel (H_2) and carrier (N_2) gas cylinders were replaced on October 1. The analyzer, however, failed to relight after the gas exchange, despite several attempts by Reno site contacts, due to a configuration error. This problem was corrected via remote connection where a programming conflict was resolved. The analyzer resumed normal operations on October 2, following a successful zero-span check. Thirty-three hours of downtime were incurred due to this event.

• The routine monthly calibration was performed on October 18.

• The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month. A trigger test was performed during the routine monthly calibration on October 18 to assess the effectiveness of the canister system. No deficiencies were found.

WIND SPEED (WS) and WIND DIRECTION (WD)

• Operational time for the monitoring period was 100%.

• An anemometer sensor check was conducted on October 18. The result was satisfactory.

• 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%.

• A humidity sensor check was conducted on October 18. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

• Operational time for the monitoring period was 100%.

• A pressure sensor check was conducted on October 18. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor check was conducted on October 18. The result was satisfactory.

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.

All data collected this month were within the Alberta Ambient Air Quality Objectives and Guidelines (November, 2018).

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

Maxxam AIR SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring
Maxxam AIR SOP-00013: RM Young Wind Monitor Calibration
Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A UV Fluorescent Analyzer
Total Reduced Sulphur - Thermo 43i - TLE UV Fluorescent Analyzer
Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
Wind System - RM Young Unit
Relative Humidity - RM Young Unit
Barometric Pressure - Met One Unit
Ambient Temperature - RM Young Unit
Datalogger - Envidas Ultimate

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

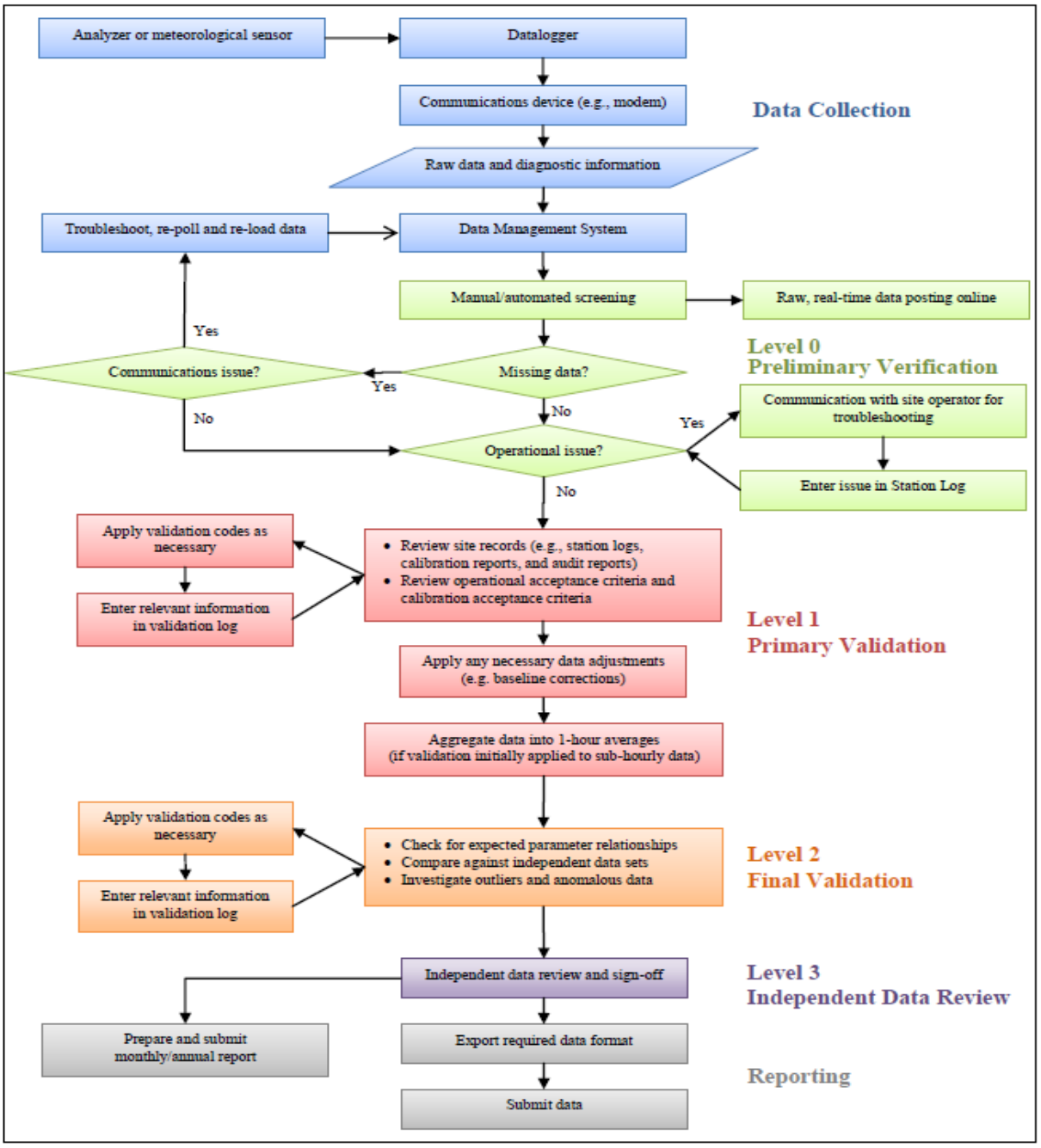
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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

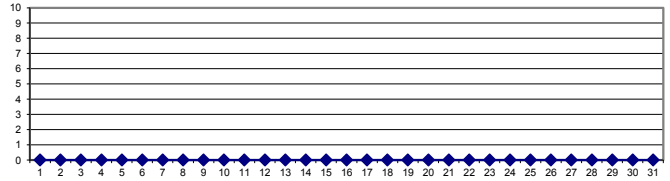
SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)

HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																												
1	**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
2	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
3	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
4	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
5	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
6	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
7	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
8	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
9	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
10	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
11	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
12	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
13	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
14	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
15	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
16	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	24
17	0	0	0	0	0	**S**	**1**	0	0	0	1	0	1	0	1	0	0	0	1	1	1	0	0	0	0	**1**	0	24
18	0	0	0	0	**S**	0	1	1	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	1	0	24
19	0	0	0	**S**	0	0	0	0	**S1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
20	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
21	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
22	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	24
23	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
24	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
25	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
26	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
27	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
28	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
29	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
30	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
31	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
HOURLY MAX	0	0	0	0	0	0	1	1	0	0	1	0	1	0	1	0	0	0	1	1	1	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				

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 October 2018

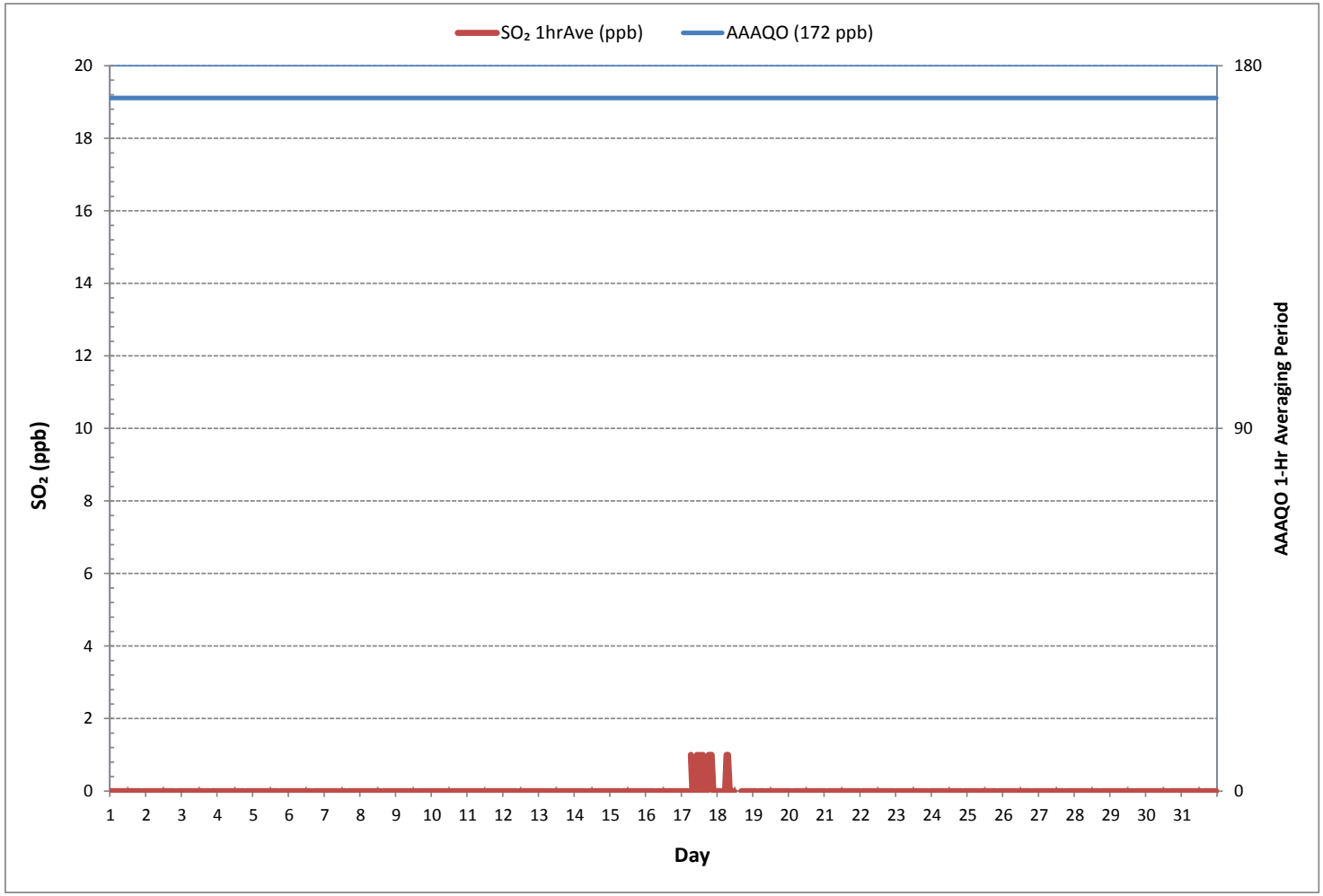


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 ppb | 24-HR 48 ppb

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:			0				
NUMBER OF 24-HR EXCEEDANCES:			0				
NUMBER OF NON-ZERO READINGS:			9				
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	1	ppb	@ HOUR	6	ON DAY	17	
MAXIMUM 24-HR AVERAGE:	0	ppb			ON DAY	1	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:			743	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			99.9	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:			0	ppb

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



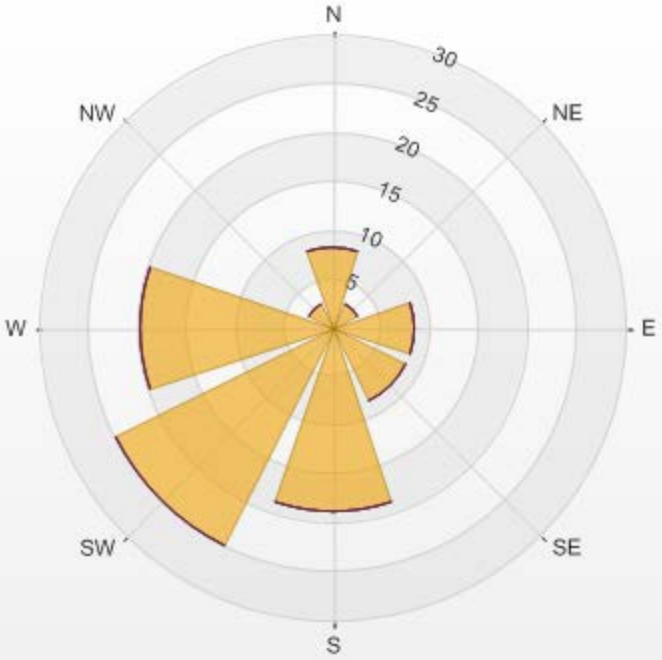
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO_2 [ppb]
Monthly: 18/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.80% Calm Avg: 0.00 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	8.2	0.0	0.0	0.0	0.0	8.2
NE	2.8	0.0	0.0	0.0	0.0	2.8
E	8.4	0.0	0.0	0.0	0.0	8.4
SE	8.5	0.0	0.0	0.0	0.0	8.5
S	18.8	0.0	0.0	0.0	0.0	18.8
SW	24.9	0.0	0.0	0.0	0.0	24.9
W	19.8	0.0	0.0	0.0	0.0	19.8
NW	2.8	0.0	0.0	0.0	0.0	2.8
Summary	94.2	0.0	0.0	0.0	0.0	94.2

% Icon Classes (ppb)	94 0-3	0 3-10	0 10-85	0 85-170	0 >170.0

PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 5.80% Calm Poll Avg: 0.00[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 18/10 Type: Span

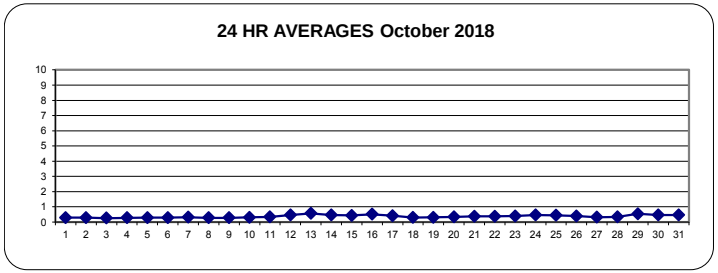
TOTAL REDUCED SULPHUR

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	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	0.26	0.25	0.26	0.26	0.26	0.25	0.26	0.32	0.32	0.31	0.29	0.30	0.30	0.29	0.29	0.29	0.29	0.28	0.30	0.29	0.30	S	0.32	0.31	0.25	0.32	0.29	24
2	0.31	0.31	0.34	0.33	0.31	0.32	0.31	0.34	0.29	0.28	0.29	0.27	0.26	0.26	0.25	0.27	0.26	0.25	0.25	0.25	S	0.31	0.28	0.28	0.25	0.34	0.29	24
3	0.28	0.27	0.27	0.28	0.28	0.28	0.28	0.28	0.29	0.26	0.26	0.25	0.26	0.26	0.25	0.24	0.24	0.24	0.24	S	0.27	0.26	0.25	0.24	0.24	0.29	0.26	24
4	0.24	0.24	0.24	0.23	0.25	0.25	0.24	0.25	0.28	0.28	0.30	0.29	0.29	0.29	0.28	0.27	0.28	0.27	S	0.35	0.32	0.31	0.30	0.29	0.23	0.35	0.28	24
5	0.29	0.27	0.28	0.29	0.30	0.31	0.31	0.30	0.31	0.29	0.31	0.29	0.29	0.29	0.28	0.27	0.30	S	0.30	0.32	0.29	0.29	0.28	0.27	0.27	0.32	0.29	24
6	0.29	0.28	0.29	0.27	0.29	0.29	0.31	0.33	0.33	0.30	0.29	0.27	0.28	0.27	0.26	0.27	S	0.29	0.29	0.30	0.34	0.27	0.27	0.27	0.26	0.34	0.29	24
7	0.29	0.30	0.27	0.28	0.29	0.28	0.30	0.33	0.32	0.34	0.34	0.33	0.32	0.31	0.34	S	0.36	0.36	0.35	0.36	0.33	0.31	0.32	0.32	0.27	0.36	0.32	24
8	0.31	0.30	0.28	0.29	0.29	0.29	0.27	0.30	0.29	0.28	0.28	0.28	0.27	0.27	S	0.29	0.29	0.28	0.26	0.28	0.28	0.28	0.27	0.28	0.26	0.31	0.28	24
9	0.27	0.27	0.28	0.28	0.29	0.29	0.29	0.28	0.29	0.29	0.29	0.28	0.28	S	0.29	0.28	0.27	0.29	0.30	0.29	0.27	0.27	0.27	0.28	0.27	0.30	0.28	24
10	0.29	0.29	0.28	0.28	0.29	0.29	0.29	0.31	0.30	0.30	0.30	0.31	S	0.36	0.32	0.33	0.32	0.31	0.31	0.31	0.30	0.33	0.34	0.35	0.28	0.36	0.31	24
11	0.37	0.40	0.36	0.32	0.34	0.30	0.29	0.32	0.30	0.30	0.30	S	0.31	0.30	0.29	0.31	0.33	0.37	0.35	0.34	0.35	0.36	0.36	0.33	0.29	0.40	0.33	24
12	0.42	0.37	0.47	0.66	**1.34**	0.67	0.41	0.36	0.33	0.35	S	0.37	0.34	0.33	0.35	0.35	0.35	0.35	0.36	0.37	0.40	0.49	0.54	0.54	0.33	**1.34**	0.46	24
13	0.61	0.70	0.73	0.66	0.76	0.90	1.00	0.89	0.75	S	0.35	0.34	0.32	0.33	0.32	0.35	0.36	0.46	0.54	0.59	0.51	0.51	0.66	0.58	0.32	1.00	**0.57**	24
14	0.51	0.48	0.48	0.64	0.65	0.55	0.50	0.55	S	0.43	0.43	0.46	0.42	0.41	0.46	0.52	0.45	0.37	0.35	0.35	0.35	0.38	0.43	0.42	0.35	0.65	0.46	24
15	0.40	0.40	0.40	0.44	0.46	0.49	0.50	S	0.51	0.47	0.44	0.40	0.41	0.43	0.40	0.39	0.36	0.47	0.45	0.36	0.41	0.42	0.39	0.39	0.36	0.51	0.43	24
16	0.82	1.24	0.65	0.87	0.91	0.55	S	0.59	0.41	0.42	0.42	0.41	0.32	0.33	0.33	0.36	0.36	0.39	0.34	0.35	0.38	0.50	0.46	0.41	0.32	1.24	0.51	24
17	0.38	0.43	0.40	0.38	0.37	S	0.41	0.44	0.51	0.43	0.43	0.41	0.40	0.38	0.38	0.39	0.39	0.41	0.41	0.41	0.40	0.40	0.40	0.39	0.37	0.51	0.41	24
18	0.40	0.40	0.40	0.41	S	0.38	0.38	0.34	Y	Y	Y	Y	Y	Y	S1	0.28	**0.21**	0.21	0.22	0.23	0.21	0.24	0.25	0.23	**0.21**	0.41	0.30	17
19	0.27	0.43	0.45	S	0.37	0.37	0.36	0.37	C	C	C	C	0.30	0.28	0.27	0.25	0.26	0.29	0.27	0.28	0.28	0.28	0.29	0.30	0.25	0.45	0.31	24
20	0.30	0.33	S	0.35	0.36	0.38	0.33	0.34	0.35	0.35	0.31	0.32	0.32	0.33	0.31	0.32	0.32	0.32	0.32	0.32	0.32	0.31	0.32	0.33	0.30	0.38	0.33	24
21	0.35	S	0.35	0.34	0.34	0.34	0.34	0.33	0.32	0.34	0.35	0.34	0.34	0.33	0.33	0.34	0.33	0.36	0.43	0.58	0.50	0.44	0.42	0.40	0.32	0.58	0.37	24
22	S	0.41	0.38	0.37	0.35	0.35	0.35	0.36	0.35	0.35	0.35	0.38	0.35	0.34	0.34	0.35	0.38	0.41	0.39	0.38	0.36	0.37	0.37	S	0.34	0.41	0.37	24
23	0.40	0.40	0.36	0.34	0.34	0.37	0.40	0.40	0.38	0.37	0.41	0.39	0.38	0.38	0.37	0.38	0.41	0.40	0.42	0.55	0.52	0.42	S	0.38	0.34	0.55	0.40	24
24	0.39	0.39	0.42	0.45	0.47	0.47	0.41	0.48	0.43	0.47	0.46	0.52	0.49	0.46	0.47	0.45	0.47	0.74	0.67	0.47	0.45	S	0.42	0.39	0.39	0.74	0.47	24
25	0.47	0.47	0.43	0.55	0.46	0.50	0.48	0.43	0.49	0.47	0.49	0.49	0.44	0.42	0.42	0.39	0.45	0.45	0.38	0.41	S	0.44	0.45	0.40	0.38	0.55	0.45	24
26	0.37	0.36	0.36	0.37	0.35	0.42	0.40	0.37	0.43	0.46	0.38	0.37	0.36	0.35	0.36	0.38	0.38	0.41	0.41	S	0.46	0.44	0.36	0.33	0.33	0.46	0.39	24
27	0.36	0.37	0.34	0.33	0.34	0.30	0.32	0.30	0.31	0.33	0.34	0.34	0.33	0.32	0.32	0.32	0.32	0.30	S	0.31	0.31	0.32	0.31	0.33	0.30	0.37	0.32	24
28	0.51	0.48	0.43	0.44	0.37	0.32	0.30	0.31	0.29	0.31	0.28	0.27	0.27	0.27	0.28	0.28	0.27	S	0.37	0.32	0.34	0.34	0.35	0.32	0.27	0.51	0.34	24
29	0.34	0.50	0.58	0.56	0.48	0.48	0.47	0.48	0.54	0.48	0.44	0.42	0.45	0.48	0.45	0.42	S	0.56	0.68	0.75	0.85	0.69	0.67	0.72	0.34	0.85	0.54	24
30	0.56	0.44	0.40	0.38	0.38	0.45	0.47	0.50	0.47	0.43	0.49	0.48	0.42	0.39	0.36	S	0.54	0.62	0.59	0.56	0.42	0.50	0.41	0.48	0.36	0.62	0.47	24
31	0.59	0.63	0.63	0.53	0.48	0.63	0.48	0.50	0.39	0.48	0.43	0.42	0.40	0.37	S	0.37	0.36	0.41	0.42	0.51	0.48	0.34	0.29	0.36	0.29	0.63	0.46	24
HOURLY MAX	0.82	1.24	0.73	0.87	1.34	0.90	1.00	0.89	0.75	0.48	0.49	0.52	0.49	0.48	0.47	0.52	0.54	0.74	0.68	0.75	0.85	0.69	0.67	0.72				
HOURLY AVG	0.39	0.41	0.39	0.41	0.43	0.40	0.38	0.39	0.38	0.36	0.36	0.36	0.34	0.34	0.33	0.33	0.34	0.37	0.38	0.39	0.38	0.37	0.37	0.36				

STATUS FLAG CODES

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

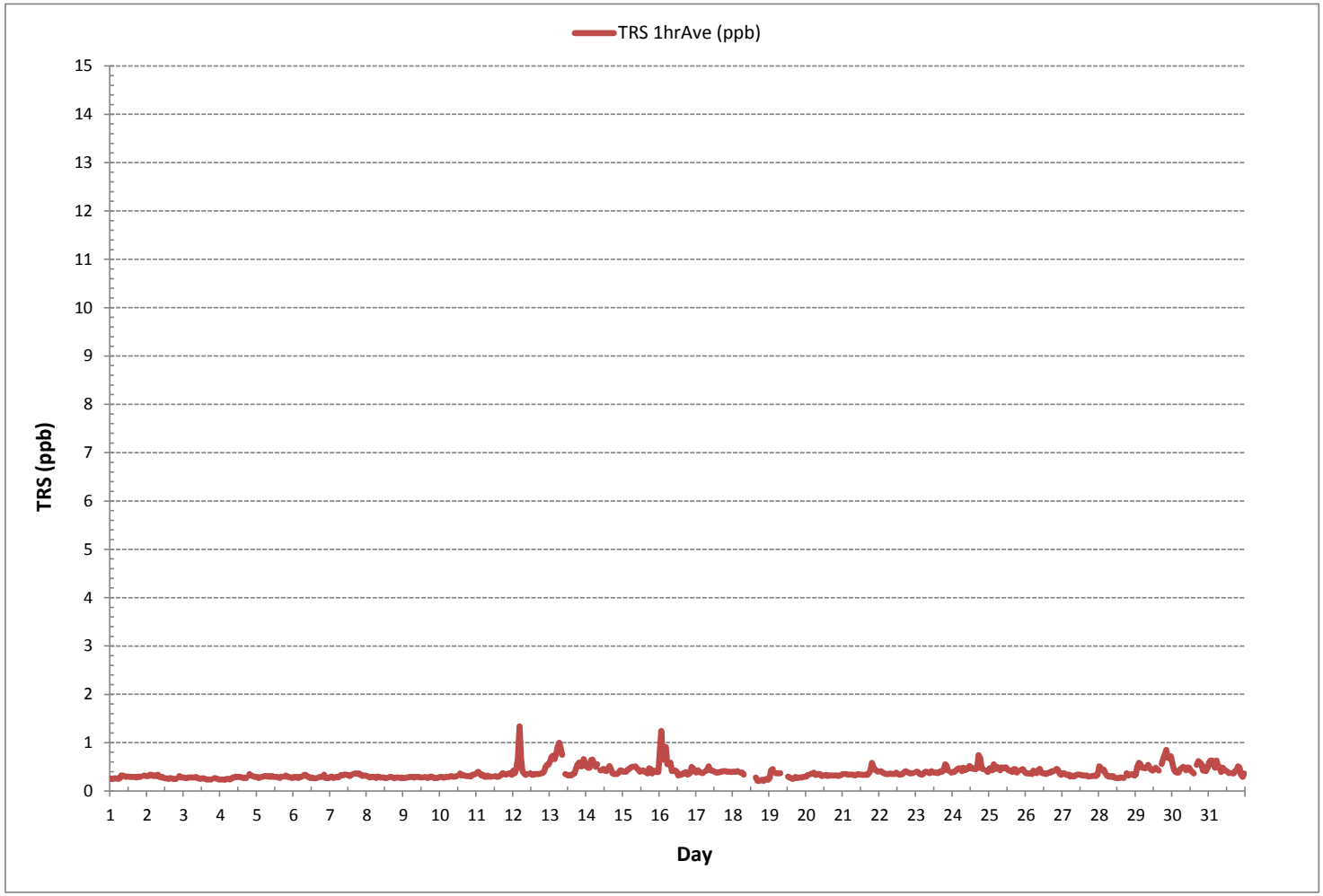


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		701				
MINIMUM 1-HR AVERAGE	0.21	ppb	@ HOUR	16	ON DAY	18
MAXIMUM 1-HR AVERAGE:	1.34	ppb	@ HOUR	4	ON DAY	12
MAXIMUM 24-HR AVERAGE:	0.57	ppb			ON DAY	13

IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	737	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.1	%
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:	0.37	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



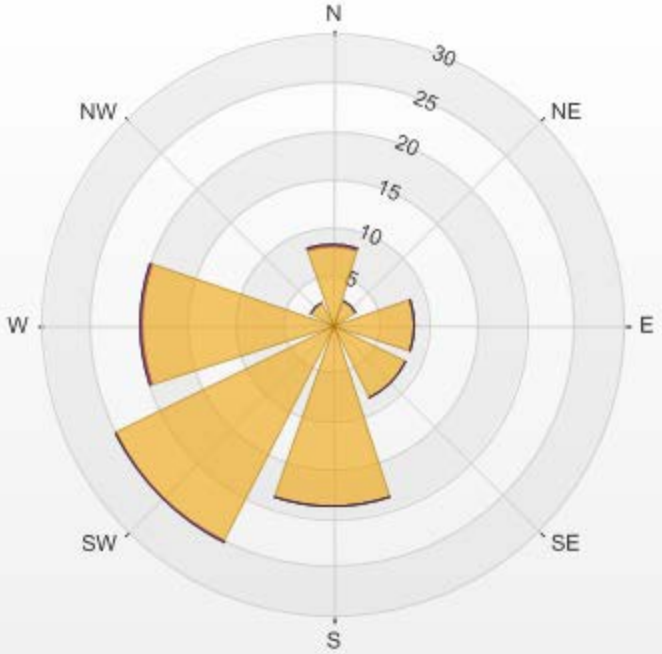
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 18/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.85% Calm Avg: 0.39 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	8.1	0.1	0.0	0.0	8.3
NE	2.7	0.0	0.0	0.0	2.7
E	8.4	0.0	0.0	0.0	8.4
SE	8.4	0.0	0.0	0.0	8.4
S	18.8	0.0	0.0	0.0	18.8
SW	25.0	0.1	0.0	0.0	25.1
W	19.7	0.1	0.0	0.0	19.8
NW	2.6	0.0	0.0	0.0	2.6
Summary	93.7	0.4	0.0	0.0	94.2

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

PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 5.85% Calm Poll Avg: 0.39[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 18/10 Type: Span

Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON

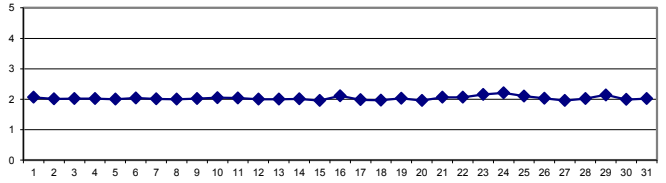
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST) / HR END (MST)	0:00 / 0:59	1:00 / 1:59	2:00 / 2:59	3:00 / 3:59	4:00 / 4:59	5:00 / 5:59	6:00 / 6:59	7:00 / 7:59	8:00 / 8:59	9:00 / 9:59	10:00 / 10:59	11:00 / 11:59	12:00 / 12:59	13:00 / 13:59	14:00 / 14:59	15:00 / 15:59	16:00 / 16:59	17:00 / 17:59	18:00 / 18:59	19:00 / 19:59	20:00 / 20:59	21:00 / 21:59	22:00 / 22:59	23:00 / 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																												
1	2.01	2.06	2.11	2.09	2.09	2.09	2.05	2.06	2.04	2.02	2.00	X	X	X	X	X	X	X	X	X	X	X	X	X	2.00	2.11	2.06	11
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	2.00	2.01	2.01	2.00	2.01	2.01	4
3	2.01	2.02	2.02	2.03	2.03	2.05	2.04	2.04	2.02	2.02	2.00	2.01	2.01	2.00	1.99	1.99	1.99	2.00	2.00	S	2.04	2.05	2.03	2.00	1.99	2.05	2.02	24
4	2.00	2.00	2.00	2.01	2.04	2.10	2.05	2.03	2.05	2.05	2.04	2.03	2.01	2.00	1.99	2.00	2.00	2.00	S	2.02	2.02	2.01	2.01	2.01	1.99	2.10	2.02	24
5	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.01	2.00	2.00	2.00	S	2.00	2.00	2.02	2.01	2.00	2.02	2.00	2.02	2.00	24
6	2.05	2.07	2.05	2.07	2.06	2.10	2.10	2.03	2.03	2.02	2.03	2.02	2.03	2.03	2.03	2.03	S	2.03	2.02	2.02	2.03	2.03	2.03	2.02	2.02	2.10	2.04	24
7	2.02	2.02	2.02	2.01	2.00	2.00	2.01	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.01	S	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.02	2.01	24
8	2.01	2.00	1.99	1.99	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.99	1.99	1.99	S	1.99	1.99	1.99	2.00	2.00	2.02	2.02	2.01	1.99	1.98	2.02	2.00	24
9	2.00	2.00	2.01	2.02	2.04	2.01	2.00	2.00	2.00	2.00	2.08	1.99	1.99	S	2.00	2.00	2.01	2.02	2.07	2.04	2.00	2.03	2.01	2.04	1.99	2.08	2.02	24
10	2.05	2.01	2.02	2.06	2.01	2.04	2.04	2.04	2.05	2.05	2.07	2.05	S	2.12	2.06	2.06	2.06	2.05	2.05	2.04	2.04	2.04	2.04	2.04	2.01	2.12	2.05	24
11	2.06	2.05	2.04	2.03	2.06	2.05	2.04	2.17	2.07	2.10	2.12	S	2.08	2.06	2.01	2.02	2.02	2.02	2.01	2.00	1.99	1.99	1.99	1.99	1.99	2.17	2.04	24
12	2.00	1.98	2.00	2.01	2.01	1.99	2.00	2.00	2.00	2.00	S	2.02	2.02	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.98	2.02	2.00	24
13	1.99	2.01	2.00	2.00	2.01	2.01	2.01	2.01	2.01	S	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.03	2.00	2.01	2.09	2.02	1.98	2.09	2.00	24
14	2.00	1.99	2.00	2.19	2.20	2.08	2.09	2.14	S	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	2.20	2.01	24
15	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.96	1.96	1.98	1.96	1.96	1.97	1.96	1.98	1.96	24
16	2.24	2.54	2.39	2.61	2.37	2.06	S	2.06	1.99	1.99	2.00	1.99	1.97	1.97	1.98	1.98	1.99	1.99	1.98	1.97	2.12	2.25	2.04	2.01	1.97	2.61	2.11	24
17	1.96	1.97	1.96	1.96	1.96	S	1.99	2.00	2.09	2.00	1.99	1.98	1.99	1.98	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.09	1.98	24
18	1.96	1.96	1.97	1.97	S	1.99	1.98	1.98	C	C	C	C	C	**1.94**	1.95	1.96	1.96	1.97	1.97	1.98	1.97	1.96	1.95	1.96	**1.94**	1.99	1.97	24
19	1.96	2.16	2.23	S	2.03	2.00	2.00	2.01	2.13	2.05	2.07	2.04	2.01	1.99	1.99	1.99	2.00	2.00	2.00	2.00	1.98	1.98	2.00	2.00	1.96	2.23	2.03	24
20	1.97	2.04	S	1.99	1.99	1.97	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.97	1.96	1.95	1.95	1.94	2.04	1.96	24
21	1.96	S	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.98	2.07	2.34	**2.81**	2.23	2.17	2.17	2.11	1.96	**2.81**	2.06	24
22	S	2.14	2.07	2.00	2.00	1.98	2.03	2.02	2.09	1.99	2.00	2.01	2.00	2.01	2.00	2.03	2.10	2.14	2.16	2.05	2.13	2.14	2.20	S	1.98	2.20	2.06	24
23	2.13	2.23	2.16	2.03	2.03	2.08	2.18	2.23	2.14	2.05	2.07	2.04	2.05	2.07	2.06	2.08	2.11	2.09	2.21	2.75	2.33	2.22	S	2.10	2.03	2.75	2.15	24
24	2.17	2.17	2.20	2.28	2.47	2.27	2.26	2.30	2.15	2.13	2.16	2.21	2.14	2.15	2.12	2.11	2.15	2.48	2.37	2.14	2.12	S	2.09	2.05	2.05	2.48	**2.21**	24
25	2.28	2.17	2.09	2.33	2.15	2.21	2.23	2.18	2.24	2.20	2.11	2.09	2.04	2.03	2.02	2.00	2.07	2.08	1.96	1.95	S	1.96	1.96	1.96	1.95	2.33	2.10	24
26	1.96	1.95	1.96	1.96	1.96	2.07	1.96	2.00	2.14	2.08	2.00	1.99	1.99	2.01	2.02	2.03	2.05	2.12	2.06	S	2.17	2.15	2.01	2.00	1.95	2.17	2.03	24
27	1.98	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	S	1.96	1.97	1.97	1.98	1.98	1.95	1.98	1.96	24
28	2.21	2.14	2.18	2.19	2.05	2.13	2.00	2.04	1.99	1.99	1.96	1.96	1.95	1.95	1.96	1.98	1.96	S	2.01	1.97	1.97	1.96	1.97	1.98	1.95	2.21	2.02	24
29	1.98	1.97	1.99	1.99	2.01	2.04	2.06	2.10	2.17	2.15	2.11	2.08	2.05	2.03	2.01	2.01	S	2.04	2.25	2.32	2.57	2.43	2.47	2.46	1.97	2.57	2.14	24
30	2.20	2.02	1.97	1.97	1.97	1.98	1.98	1.98	1.99	1.99	1.98	1.98	1.97	1.97	1.97	S	1.98	2.03	2.00	1.97	1.96	1.96	1.96	2.00	1.96	2.20	1.99	24
31	2.08	1.99	2.03	2.03	1.99	2.33	2.06	2.24	2.01	1.99	1.99	1.98	1.98	1.97	S	1.97	1.97	1.96	1.96	1.98	2.00	1.98	1.99	2.00	1.96	2.33	2.02	24
HOURLY MAX	2.28	2.54	2.39	2.61	2.47	2.33	2.26	2.30	2.24	2.20	2.16	2.21	2.14	2.15	2.12	2.11	2.15	2.48	2.37	2.81	2.57	2.43	2.47	2.46				
HOURLY AVG	2.04	2.05	2.05	2.06	2.05	2.05	2.03	2.05	2.04	2.03	2.02	2.01	2.00	2.00	2.00	2.00	2.01	2.03	2.05	2.07	2.06	2.04	2.03	2.02				

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

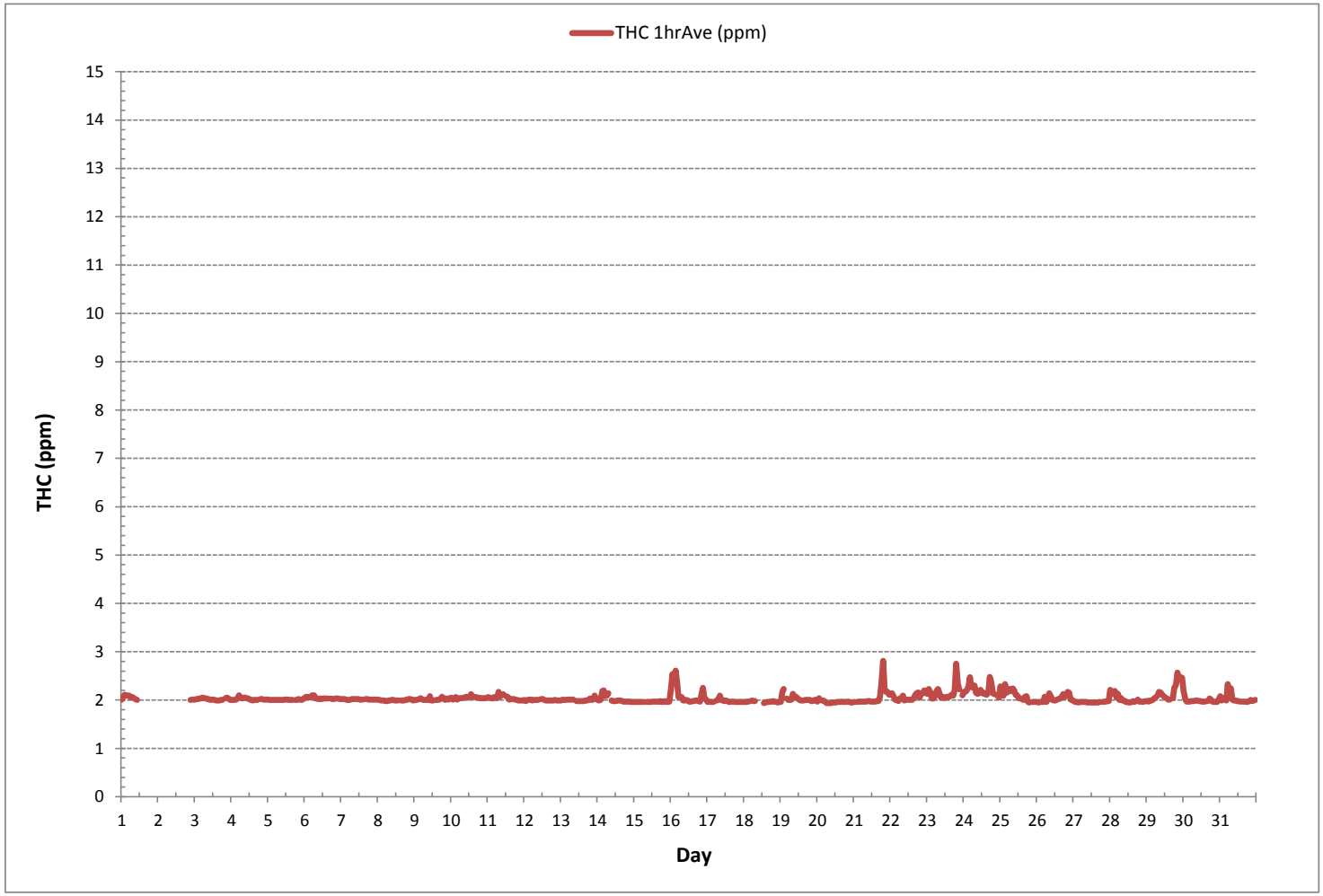
24 HR AVERAGES October 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			675				
MINIMUM 1-HR AVERAGE		1.94	ppm	@ HOUR	13	ON DAY	18
MAXIMUM 1-HR AVERAGE:		2.81	ppm	@ HOUR	19	ON DAY	21
MAXIMUM 24-HR AVERAGE:		2.21	ppm			ON DAY	24
IZS CALIBRATION TIME:	31	hrs		OPERATIONAL TIME:		711	hrs
MONTHLY CALIBRATION TIME:	5	hrs		AMD OPERATION UPTIME:		95.6	%
STANDARD DEVIATION:	0.10			MONTHLY AVERAGE:		2.03	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



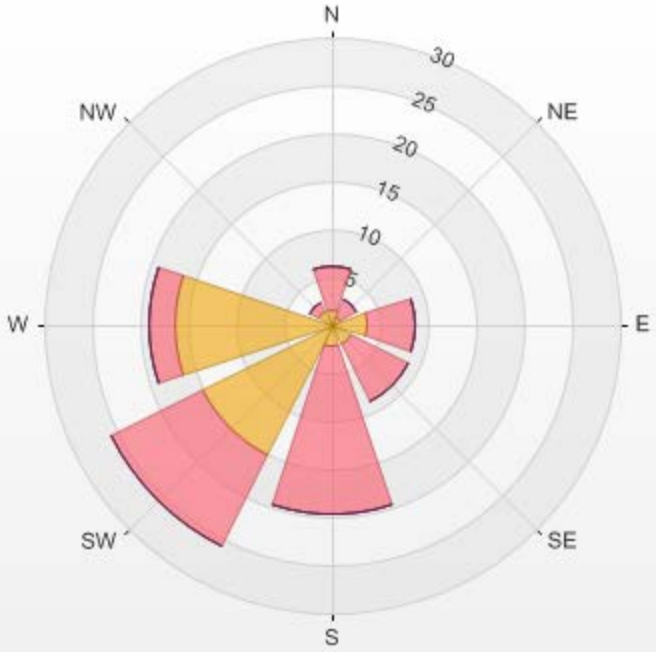
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 18/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.07% Calm Avg: 2.11 [ppm]

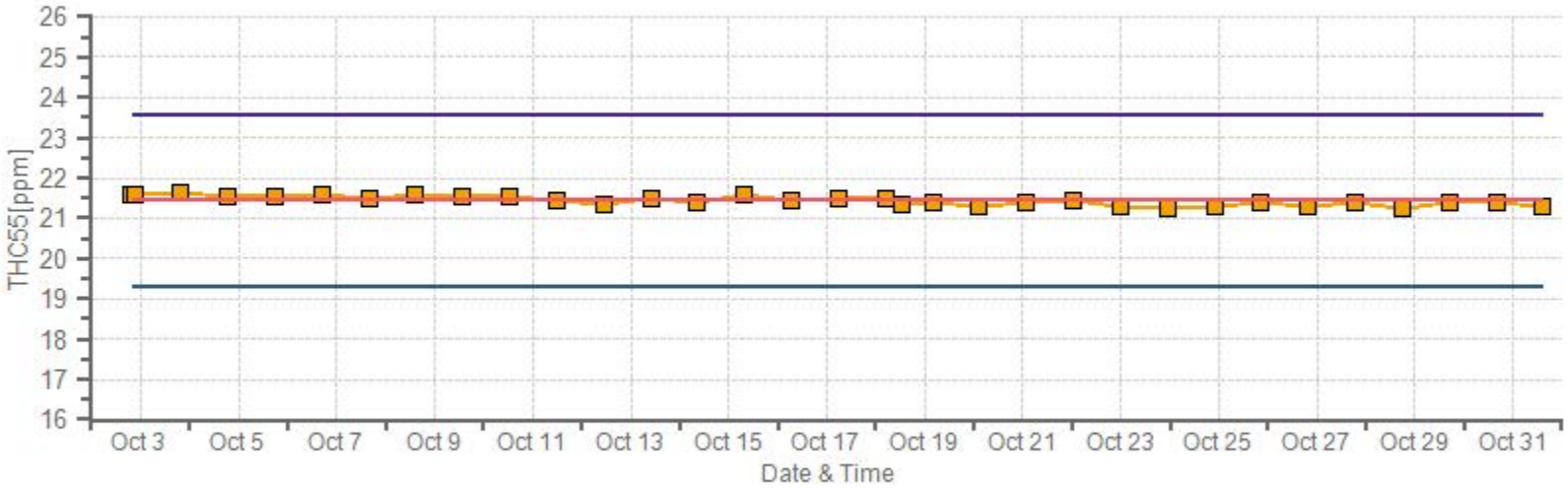
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	1.6	4.6	0.0	0.0	0.0	6.2
NE	1.0	1.9	0.0	0.0	0.0	3.0
E	3.9	4.9	0.0	0.0	0.0	8.7
SE	2.2	6.7	0.0	0.0	0.0	8.9
S	2.4	17.3	0.0	0.0	0.0	19.7
SW	15.1	10.7	0.0	0.0	0.0	25.8
W	16.4	2.7	0.0	0.0	0.0	19.1
NW	1.5	1.0	0.0	0.0	0.0	2.5
Summary	44.1	49.8	0.0	0.0	0.0	93.9

% Icon Classes (ppm)	44 0-2	50 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 6.07% Calm Poll Avg: 2.11[ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 18/10 Type: Span



Span Meas Span Ref Span Low Span High

METHANE

Maxxam
A Bureau Veritas Group Company

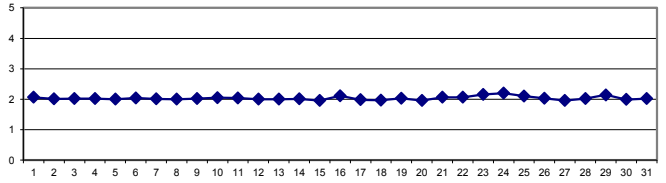
METHANE Hourly Averages (CH_4 ppm)

HR START (MST) / HR END (MST)	0:00 / 0:59	1:00 / 1:59	2:00 / 2:59	3:00 / 3:59	4:00 / 4:59	5:00 / 5:59	6:00 / 6:59	7:00 / 7:59	8:00 / 8:59	9:00 / 9:59	10:00 / 10:59	11:00 / 11:59	12:00 / 12:59	13:00 / 13:59	14:00 / 14:59	15:00 / 15:59	16:00 / 16:59	17:00 / 17:59	18:00 / 18:59	19:00 / 19:59	20:00 / 20:59	21:00 / 21:59	22:00 / 22:59	23:00 / 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																												
1	2.01	2.06	2.11	2.09	2.09	2.09	2.05	2.06	2.04	2.02	2.00	X	X	X	X	X	X	X	X	X	X	X	X	X	2.00	2.11	2.06	11
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	2.00	2.01	2.01	2.00	2.01	2.01	4
3	2.01	2.02	2.02	2.03	2.03	2.05	2.04	2.04	2.02	2.02	2.00	2.01	2.01	2.00	1.99	1.99	1.99	2.00	2.00	S	2.04	2.05	2.03	2.00	1.99	2.05	2.02	24
4	2.00	2.00	2.00	2.01	2.04	2.10	2.05	2.03	2.05	2.05	2.04	2.03	2.01	2.00	1.99	2.00	2.00	2.00	S	2.02	2.02	2.01	2.01	2.01	1.99	2.10	2.02	24
5	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.01	2.00	2.00	2.00	S	2.00	2.00	2.02	2.01	2.00	2.02	2.00	2.02	2.00	24
6	2.05	2.07	2.05	2.07	2.06	2.10	2.10	2.03	2.03	2.02	2.03	2.02	2.03	2.03	2.03	2.03	S	2.03	2.02	2.02	2.03	2.03	2.03	2.02	2.02	2.10	2.04	24
7	2.02	2.02	2.02	2.01	2.00	2.00	2.01	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.01	S	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.02	2.01	24
8	2.01	2.00	1.99	1.99	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.99	1.99	1.99	S	1.99	1.99	1.99	2.00	2.00	2.02	2.02	2.01	1.99	1.98	2.02	2.00	24
9	2.00	2.00	2.01	2.02	2.04	2.01	2.00	2.00	2.00	2.00	2.08	1.99	1.99	S	2.00	2.00	2.01	2.02	2.07	2.04	2.00	2.03	2.01	2.04	1.99	2.08	2.02	24
10	2.05	2.01	2.02	2.06	2.01	2.04	2.04	2.04	2.05	2.05	2.07	2.05	S	2.12	2.06	2.06	2.06	2.05	2.05	2.04	2.04	2.04	2.04	2.04	2.01	2.12	2.05	24
11	2.06	2.05	2.04	2.03	2.06	2.05	2.04	2.17	2.07	2.10	2.12	S	2.08	2.06	2.01	2.02	2.02	2.02	2.01	2.00	1.99	1.99	1.99	1.99	1.99	2.17	2.04	24
12	2.00	1.98	2.00	2.01	2.01	1.99	2.00	2.00	2.00	2.00	S	2.02	2.02	2.00	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.98	2.02	2.00	24
13	1.99	2.01	2.00	2.00	2.01	2.01	2.01	2.01	2.01	S	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.03	2.00	2.01	2.09	2.02	1.98	2.09	2.00	24
14	2.00	1.99	2.00	2.19	2.20	2.08	2.09	2.14	S	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	2.20	2.01	24
15	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.96	1.96	1.98	1.96	1.96	1.97	1.96	1.98	1.96	24
16	2.24	2.54	2.39	2.61	2.37	2.06	S	2.06	1.99	1.99	2.00	1.99	1.97	1.97	1.98	1.98	1.99	1.99	1.98	1.97	2.12	2.25	2.04	2.01	1.97	2.61	2.11	24
17	1.96	1.97	1.96	1.96	1.96	S	1.99	2.00	2.09	2.00	1.99	1.98	1.99	1.98	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.09	1.98	24
18	1.96	1.96	1.97	1.97	S	1.99	1.98	1.98	C	C	C	C	C	**1.94**	1.95	1.96	1.96	1.97	1.97	1.98	1.97	1.96	1.95	1.96	**1.94**	1.99	1.97	24
19	1.96	2.16	2.23	S	2.03	2.00	2.00	2.01	2.13	2.05	2.05	2.02	2.01	1.99	1.99	1.99	2.00	2.00	2.00	2.00	1.98	1.98	2.00	2.00	1.96	2.23	2.03	24
20	1.97	2.04	S	1.99	1.99	1.97	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.97	1.96	1.95	1.95	1.94	2.04	1.96	24
21	1.96	S	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.98	2.07	2.34	**2.81**	2.23	2.17	2.17	2.11	1.96	**2.81**	2.06	24
22	S	2.14	2.07	2.00	2.00	1.98	2.03	2.02	2.09	1.99	2.00	2.01	2.00	2.01	2.00	2.03	2.10	2.14	2.16	2.05	2.13	2.14	2.20	S	1.98	2.20	2.06	24
23	2.12	2.23	2.16	2.03	2.03	2.08	2.18	2.23	2.14	2.05	2.07	2.04	2.05	2.07	2.06	2.08	2.11	2.09	2.21	2.75	2.33	2.22	S	2.10	2.03	2.75	2.15	24
24	2.17	2.17	2.20	2.28	2.47	2.27	2.26	2.30	2.13	2.13	2.15	2.21	2.14	2.15	2.12	2.11	2.15	2.48	2.37	2.14	2.12	S	2.09	2.05	2.05	2.48	**2.20**	24
25	2.28	2.17	2.09	2.33	2.15	2.21	2.23	2.18	2.24	2.20	2.11	2.09	2.04	2.03	2.02	2.00	2.07	2.08	1.96	1.95	S	1.96	1.96	1.96	1.95	2.33	2.10	24
26	1.96	1.95	1.96	1.96	1.96	2.07	1.96	2.00	2.14	2.08	2.00	1.99	1.99	2.01	2.02	2.03	2.05	2.12	2.06	S	2.17	2.15	2.01	2.00	1.95	2.17	2.03	24
27	1.98	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	S	1.96	1.97	1.97	1.98	1.98	1.95	1.98	1.96	24
28	2.21	2.14	2.18	2.19	2.05	2.13	2.00	2.04	1.99	1.99	1.96	1.96	1.95	1.95	1.96	1.98	1.96	S	2.01	1.97	1.97	1.96	1.97	1.98	1.95	2.21	2.02	24
29	1.98	1.97	1.99	1.99	2.01	2.04	2.06	2.10	2.17	2.14	2.11	2.08	2.05	2.03	2.01	2.01	S	2.04	2.25	2.32	2.57	2.43	2.47	2.46	1.97	2.57	2.14	24
30	2.20	2.02	1.97	1.97	1.97	1.98	1.98	1.98	1.99	1.99	1.98	1.98	1.97	1.97	1.97	S	1.98	2.03	2.00	1.97	1.96	1.96	1.96	2.00	1.96	2.20	1.99	24
31	2.08	1.99	2.03	2.03	1.99	2.33	2.06	2.24	2.01	1.99	1.99	1.98	1.98	1.97	S	1.97	1.97	1.96	1.96	1.98	2.00	1.98	1.99	2.00	1.96	2.33	2.02	24
HOURLY MAX	2.28	2.54	2.39	2.61	2.47	2.33	2.26	2.30	2.24	2.20	2.15	2.21	2.14	2.15	2.12	2.11	2.15	2.48	2.37	2.81	2.57	2.43	2.47	2.46				
HOURLY AVG	2.04	2.05	2.05	2.06	2.05	2.05	2.03	2.05	2.04	2.03	2.02	2.01	2.00	2.00	2.00	2.00	2.01	2.03	2.05	2.07	2.06	2.04	2.03	2.02				

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

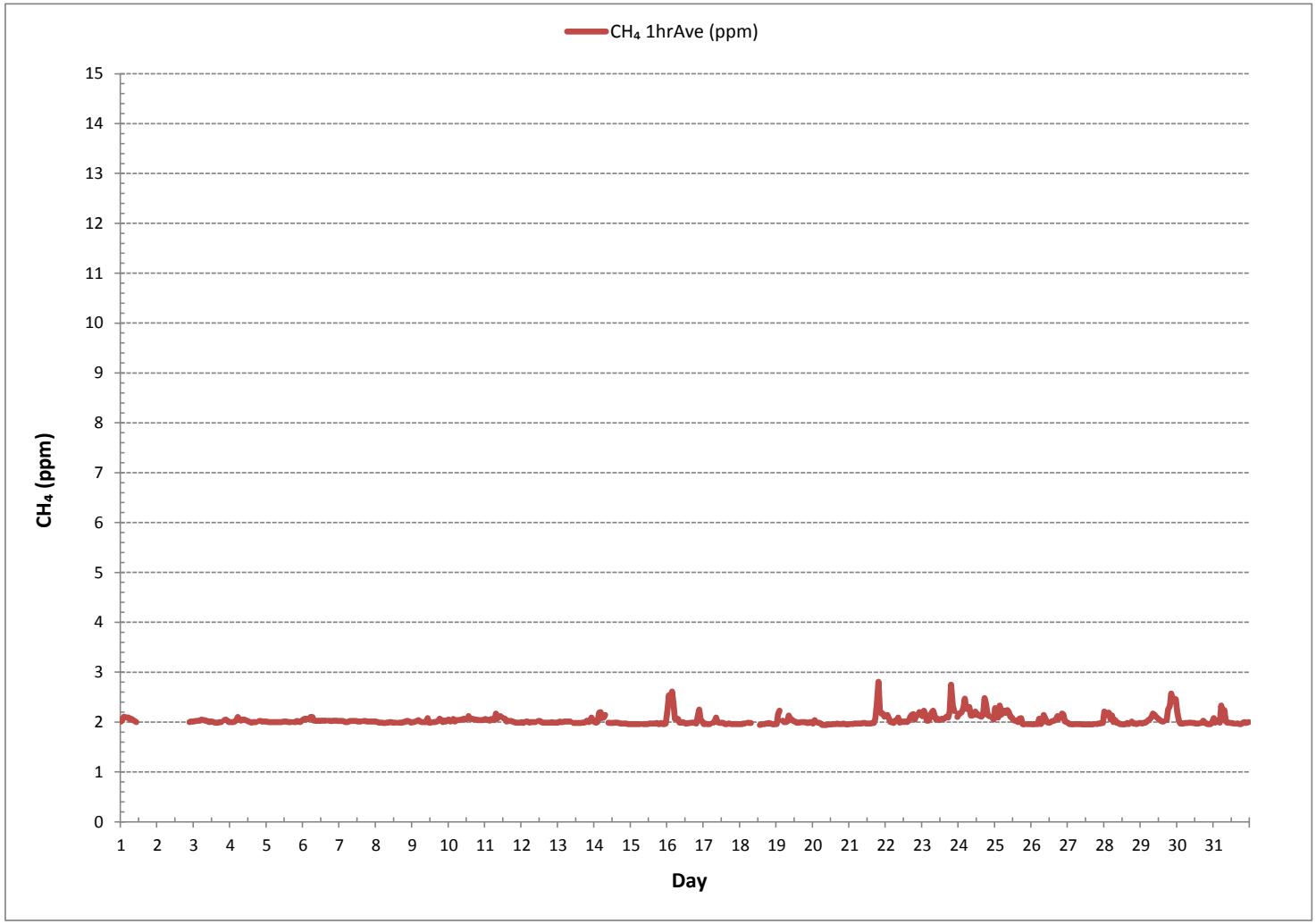
24 HR AVERAGES October 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		675					
MINIMUM 1-HR AVERAGE	1.94	ppm	@ HOUR	13	ON DAY	18	
MAXIMUM 1-HR AVERAGE:	2.81	ppm	@ HOUR	19	ON DAY	21	
MAXIMUM 24-HR AVERAGE:	2.20	ppm			ON DAY	24	
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:			711	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			95.6	%
STANDARD DEVIATION:	0.10		MONTHLY AVERAGE:			2.03	ppm

METHANE Hourly Averages (CH_4 ppm)



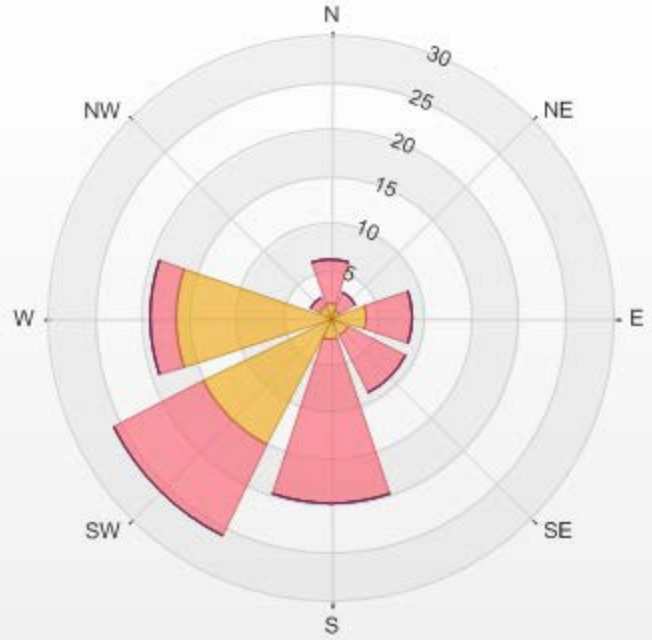
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-CH_4[ppm]
Monthly: 18/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.07% Calm Avg: 2.11 [ppm]

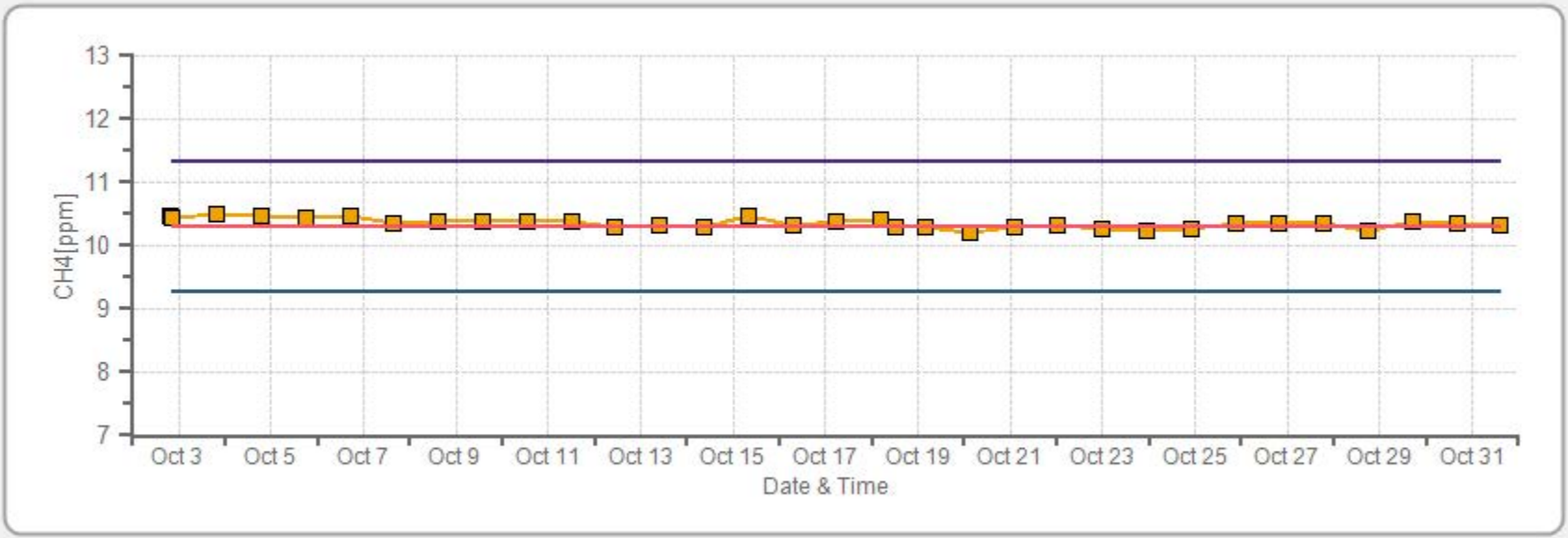
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	1.6	4.6	0.0	0.0	0.0	6.2
NE	1.0	1.9	0.0	0.0	0.0	3.0
E	3.9	4.9	0.0	0.0	0.0	8.7
SE	2.2	6.7	0.0	0.0	0.0	8.9
S	2.4	17.3	0.0	0.0	0.0	19.7
SW	15.1	10.7	0.0	0.0	0.0	25.8
W	16.4	2.7	0.0	0.0	0.0	19.1
NW	1.5	1.0	0.0	0.0	0.0	2.5
Summary	44.1	49.8	0.0	0.0	0.0	93.9

%	Icon	Classes (ppm)	44	0-2	50	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 6.07% Calm Poll Avg: 2.11[ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 18/10 Type: Span



NON-METHANE HYDROCARBON

Maxxam
A Bureau Veritas Group Company

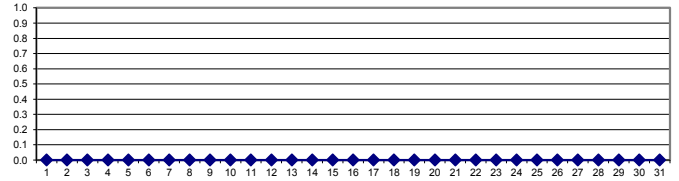
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																												
1	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	**0.00**	0.00	**0.00**	11
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	0.00	0.00	0.00	0.00	0.00	0.00	4
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	0.00	0.00	0.00	S	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	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
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	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
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	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
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	C	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	0.00	0.00	0.00	24
19	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	**0.02**	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	**0.02**	0.00	24
20	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
21	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
22	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
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	0.00	0.00	0.00	0.00	0.00	S	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	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.02	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	0.00	0.00	0.00	0.00	S	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	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
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	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
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	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
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	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
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
HOURLY MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	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				
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

STATUS FLAG CODES

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

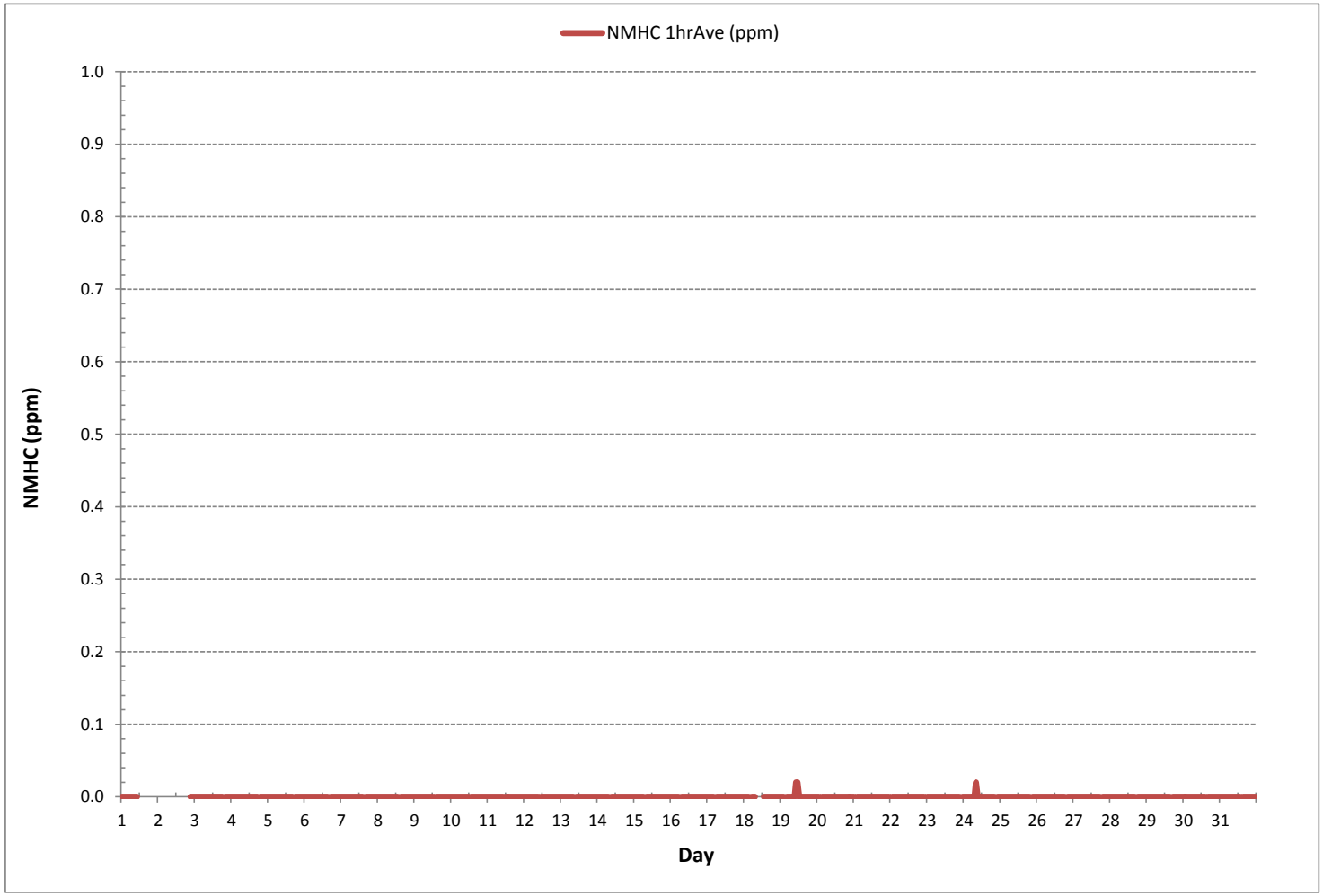
24 HR AVERAGES October 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			3				
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	0.02	ppm	@ HOUR	10	ON DAY	19	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	1	
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:			711	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			95.6	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:			0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-NMHC[ppm]
Monthly: 18/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

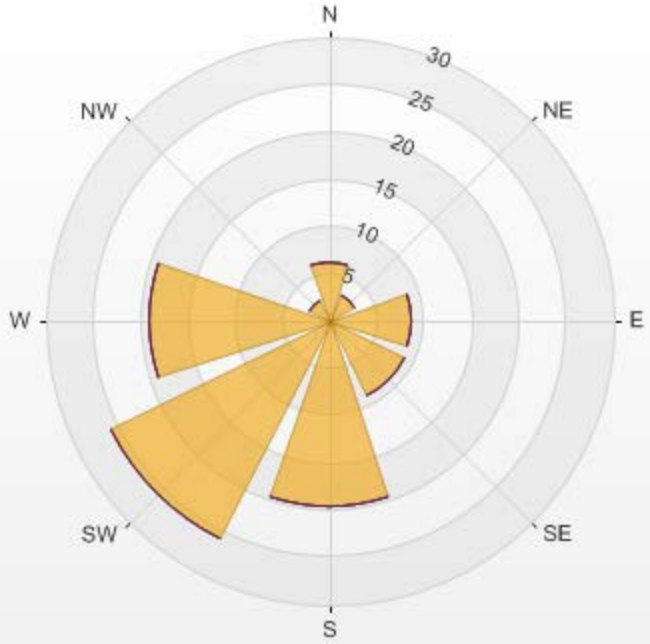
Calm: 6.07%

Calm Avg: 0.00 [ppm]

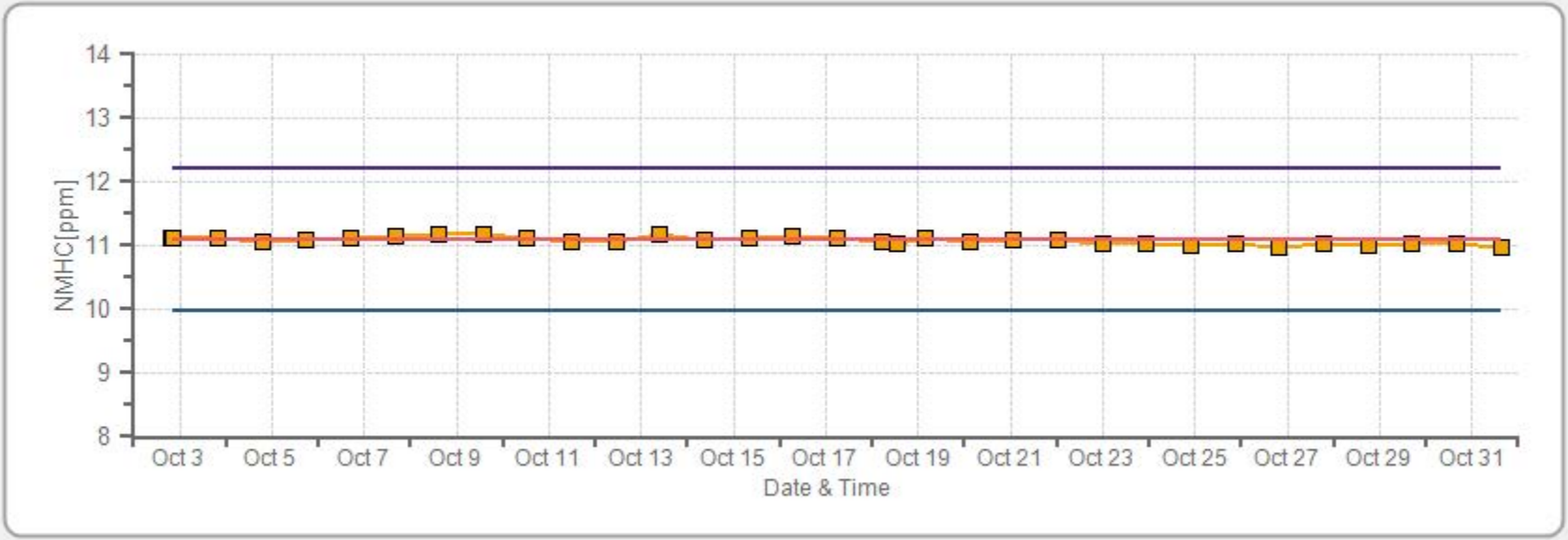
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	6.2	0.0	0.0	0.0	0.0	6.2
NE	3.0	0.0	0.0	0.0	0.0	3.0
E	8.7	0.0	0.0	0.0	0.0	8.7
SE	8.9	0.0	0.0	0.0	0.0	8.9
S	19.7	0.0	0.0	0.0	0.0	19.7
SW	25.8	0.0	0.0	0.0	0.0	25.8
W	19.1	0.0	0.0	0.0	0.0	19.1
NW	2.5	0.0	0.0	0.0	0.0	2.5
Summary	93.9	0.0	0.0	0.0	0.0	93.9

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

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 6.07% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 18/10 Type: Span



WIND SPEED

Maxxam
A Bureau Veritas Group Company

WIND SPEED Hourly Averages (WS kph)

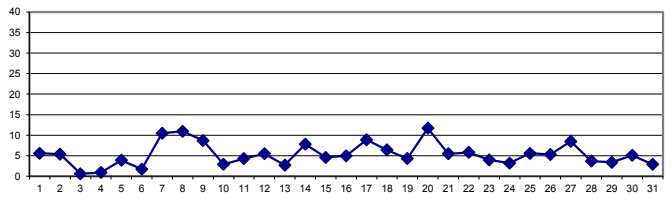
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.4	0.4	**0.1**	0.1	0.1	0.1	1.1	0.8	1.0	3.7	6.1	6.7	9.0	9.5	9.8	9.2	10.1	10.7	10.2	10.9	10.2	9.1	10.5	8.2	**0.1**	10.9	5.6	24
2	7.2	5.3	4.4	3.1	1.2	2.4	3.9	4.1	3.9	5.2	7.0	7.7	8.4	8.8	8.5	8.3	8.3	8.6	7.6	7.4	8.0	6.7	9.5	10.4	1.2	10.4	5.4	24
3	10.4	10.6	9.0	7.5	5.2	3.5	1.0	2.7	2.6	3.2	1.3	2.9	0.3	1.4	4.2	4.8	3.9	3.3	2.5	5.4	6.6	6.7	6.9	6.4	0.3	10.6	0.6	24
4	7.0	6.5	5.5	6.3	6.0	5.6	5.6	5.3	5.1	6.0	4.6	5.2	4.4	5.8	5.9	5.1	6.9	3.7	2.3	7.0	6.8	7.0	7.8	8.9	2.3	8.9	0.9	24
5	8.4	7.4	5.9	5.2	5.1	6.0	6.7	4.4	5.4	5.4	5.1	4.4	5.3	4.6	3.1	3.6	4.0	2.9	2.6	5.1	7.3	6.4	6.7	7.2	2.6	8.4	3.9	24
6	6.3	7.1	7.3	5.8	4.3	6.2	3.6	1.9	3.5	4.6	5.7	4.8	5.6	5.8	8.0	6.7	6.6	8.1	7.3	5.3	5.3	7.3	6.8	7.5	1.9	8.1	1.7	24
7	10.3	9.3	9.4	8.2	9.5	9.7	10.5	10.6	11.4	12.2	11.7	11.6	11.5	11.9	11.7	12.0	10.8	10.9	10.1	9.5	9.4	11.2	11.5	10.9	8.2	12.2	10.5	24
8	9.9	11.8	11.5	10.3	10.0	8.7	10.5	9.2	10.3	12.3	12.2	11.5	10.4	12.0	11.8	11.8	12.6	11.6	12.3	8.6	11.6	12.9	11.7	12.2	8.6	12.9	10.9	24
9	11.9	10.9	10.0	9.0	8.7	6.5	9.0	9.5	10.2	8.4	9.0	10.1	10.8	9.3	10.8	9.4	8.4	6.2	7.1	7.1	6.4	8.1	8.5	6.8	6.2	11.9	8.7	24
10	6.9	6.5	5.8	5.7	6.5	6.3	6.2	5.7	5.8	5.8	4.9	5.0	3.6	2.9	3.6	5.0	3.9	3.5	3.3	3.4	1.7	1.2	2.4	2.4	1.2	6.9	2.9	24
11	2.3	2.4	2.4	2.9	3.1	3.6	4.8	4.8	5.7	5.6	6.4	6.3	6.9	6.2	6.1	5.9	5.8	5.8	5.7	4.6	4.2	4.5	5.5	4.5	2.3	6.9	4.3	24
12	2.3	2.1	2.0	0.7	2.8	7.6	9.5	12.2	11.9	13.5	13.3	13.2	13.1	11.1	10.3	8.8	6.1	4.2	3.5	2.5	1.7	2.6	2.2	1.9	0.7	13.5	5.5	24
13	1.2	1.8	2.3	1.4	3.0	3.1	2.5	2.7	3.3	3.9	5.8	4.2	3.7	3.7	5.1	5.0	5.2	3.6	4.3	4.7	5.9	5.9	4.9	5.6	1.2	5.9	2.7	24
14	6.0	6.6	5.9	5.1	5.4	5.8	5.1	5.1	5.8	7.9	8.3	8.1	11.0	10.1	6.6	6.7	9.0	10.9	13.6	12.7	13.4	14.3	13.0	10.2	5.1	14.3	7.8	24
15	9.7	8.5	7.4	7.6	7.3	6.5	5.7	5.8	5.8	5.3	5.3	6.1	5.4	3.8	3.5	3.2	1.4	1.4	3.7	1.9	1.8	2.9	3.1	2.6	1.4	9.7	4.6	24
16	3.2	2.9	2.2	2.6	3.1	3.5	3.0	4.8	5.4	5.2	6.3	6.6	8.3	9.6	9.4	6.9	5.4	6.9	7.1	6.3	2.4	3.9	4.0	5.6	2.2	9.6	5.0	24
17	6.3	7.4	8.7	8.0	6.9	7.1	9.0	6.4	6.8	9.0	10.5	10.6	11.8	12.4	14.6	12.5	7.9	7.5	8.6	10.9	10.5	10.4	10.2	10.4	6.3	14.6	8.9	24
18	7.2	7.1	6.7	6.3	5.8	5.8	6.5	7.5	7.6	7.6	8.2	9.1	7.7	10.5	9.7	8.0	7.0	4.6	2.8	4.7	4.2	5.3	5.5	5.3	2.8	10.5	6.4	24
19	4.9	2.6	2.9	4.0	4.9	4.8	5.6	2.9	1.5	4.7	3.3	3.9	5.3	6.5	6.8	7.6	6.9	5.3	6.5	7.5	8.2	8.2	8.3	7.4	1.5	8.3	4.3	24
20	6.4	6.9	6.1	5.8	7.3	8.9	11.9	10.8	10.1	16.2	19.8	19.5	18.1	**19.9**	18.1	14.7	16.1	14.3	12.9	15.2	13.7	8.5	7.1	12.1	5.8	**19.9**	**11.7**	24
21	10.0	10.8	9.9	8.9	8.6	7.2	7.8	7.1	7.9	8.2	8.2	6.6	7.3	5.9	7.3	5.8	3.6	0.6	1.2	2.3	2.5	3.2	3.5	3.8	0.6	10.8	5.5	24
22	4.6	4.5	4.4	6.1	5.7	6.6	6.6	6.3	6.3	7.1	8.5	7.7	6.9	6.6	6.6	5.7	4.5	4.1	4.3	5.3	5.5	5.8	5.7	4.7	4.1	8.5	5.8	24
23	5.1	5.9	6.6	7.2	7.7	7.8	5.9	4.1	4.7	5.0	4.7	4.8	5.1	4.9	4.7	4.3	3.0	0.6	0.3	0.7	2.8	2.0	2.5	1.3	0.3	7.8	4.0	24
24	0.5	0.3	0.6	0.2	1.4	1.7	1.1	3.8	4.2	4.5	4.4	2.3	4.8	5.9	4.9	5.4	4.4	3.2	2.5	4.3	5.9	5.2	4.2	5.7	0.2	5.9	3.2	24
25	3.5	3.6	3.8	3.8	3.8	3.7	3.7	4.4	4.6	4.3	4.7	4.4	4.9	6.2	5.9	6.3	3.9	5.3	11.1	10.7	9.4	7.9	7.9	8.7	3.5	11.1	5.6	24
26	9.6	7.3	7.0	7.8	7.0	7.0	10.0	3.6	1.8	5.5	6.4	4.0	3.4	3.7	3.8	2.8	1.6	4.1	3.3	4.4	4.9	6.8	8.3	9.6	1.6	10.0	5.3	24
27	9.8	8.5	8.9	11.5	9.8	10.3	11.0	14.1	11.8	14.8	12.5	10.2	9.5	10.7	10.0	8.2	6.5	6.4	4.6	5.7	5.5	5.0	4.0	3.3	3.3	14.8	8.5	24
28	2.8	3.3	2.4	2.0	5.8	6.7	5.2	5.2	6.8	8.0	9.1	10.4	14.5	10.8	7.9	5.8	5.2	2.6	6.2	5.1	4.4	2.6	1.4	0.6	0.6	14.5	3.7	24
29	1.0	2.8	4.2	3.9	3.8	4.6	1.9	2.5	2.3	3.0	4.2	3.6	5.5	6.4	7.1	6.2	3.9	2.5	1.8	3.0	2.6	2.8	2.4	2.8	1.0	7.1	3.4	24
30	3.2	4.3	5.7	4.6	5.3	4.7	4.4	4.4	4.9	5.8	6.0	7.1	9.6	7.2	8.0	7.0	3.1	1.6	2.7	5.3	5.9	6.3	6.0	3.7	1.6	9.6	5.1	24
31	3.1	3.8	4.0	4.1	2.8	3.2	2.1	3.3	4.7	6.4	8.1	8.8	6.2	7.2	6.8	8.3	7.4	3.8	4.6	4.3	9.6	11.1	11.0	10.1	2.1	11.1	2.9	24
HOURLY MAX	11.9	11.8	11.5	11.5	10.0	10.3	11.9	14.1	11.9	16.2	19.8	19.5	18.1	19.9	18.1	14.7	16.1	14.3	13.6	15.2	13.7	14.3	13.0	12.2				

STATUS FLAG CODES

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

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

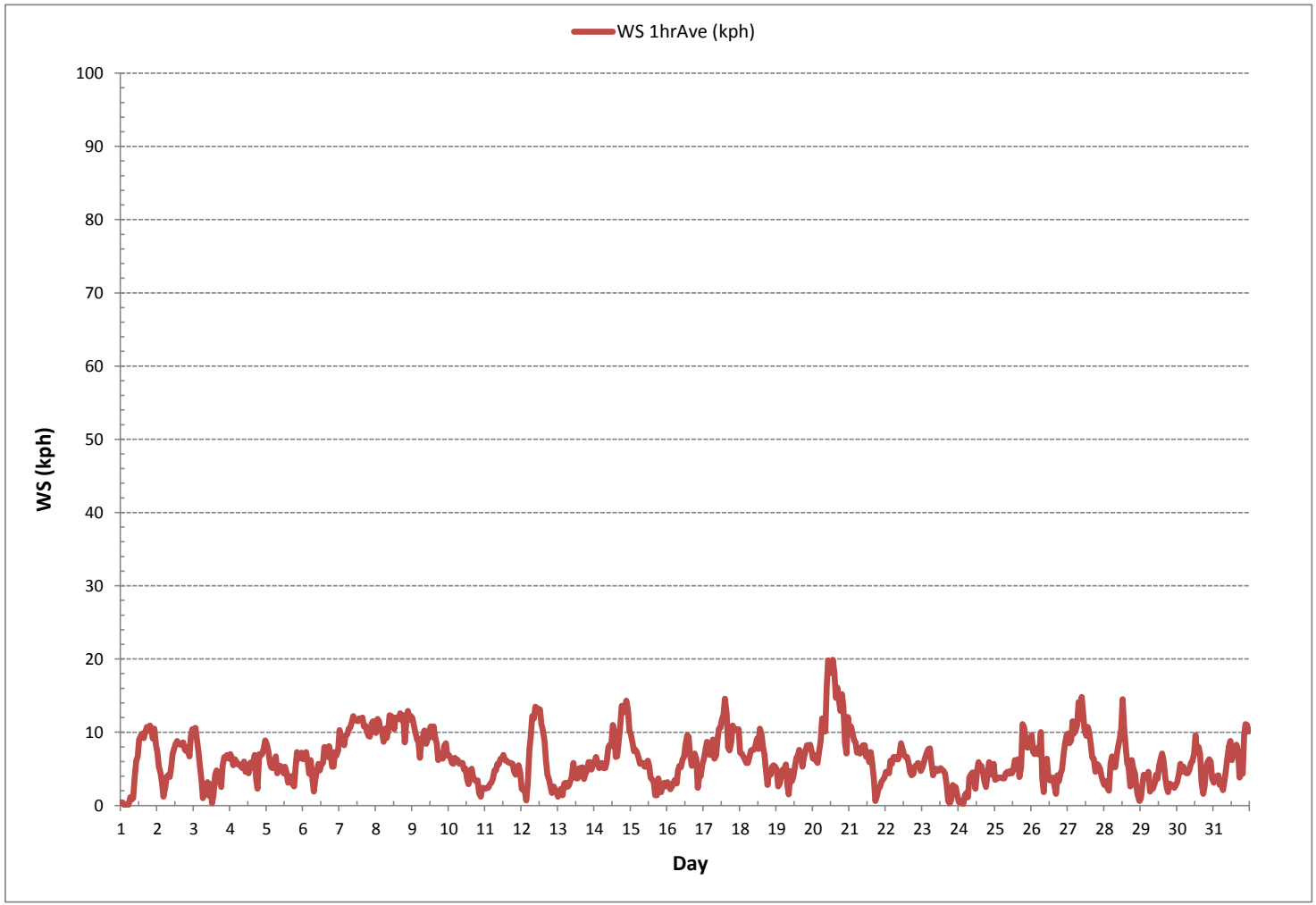
24 HR AVERAGES October 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		744					
MINIMUM 1-HR AVERAGE	0.1	kph	@ HOUR	2	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	19.9	kph	@ HOUR	13	ON DAY	20	
MAXIMUM 24-HR AVERAGE:	11.7	kph			ON DAY	20	
			OPERATIONAL TIME:			744	hrs
MONTHLY CALIBRATION TIME:	0	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	3.3		MONTHLY AVERAGE:			2.2	kph

WIND SPEED Hourly Averages (WS kph)



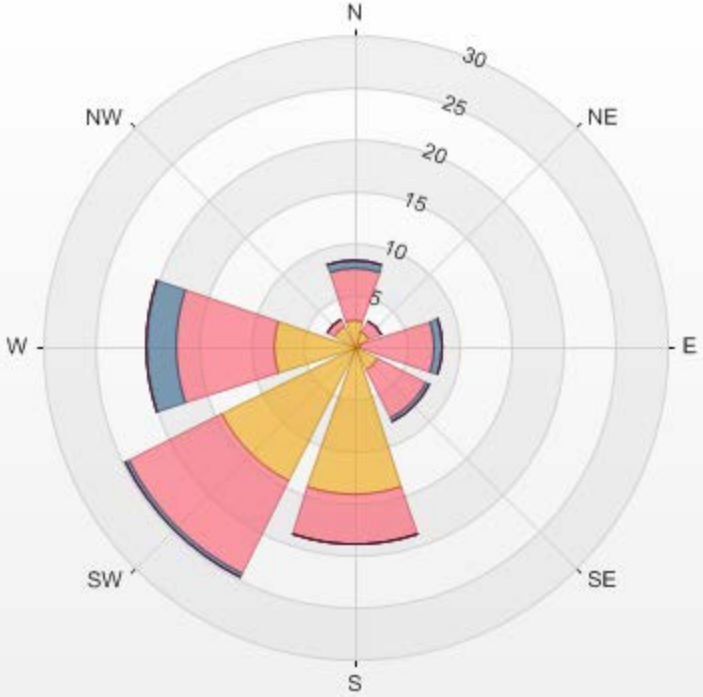
Wind: PRAMP_RENO
Monitor: WSP [kph]
Monthly: 18/10
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.65%

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	2.6	5.1	0.7	0.0	0.0	0.0	8.3
NE	1.6	1.2	0.0	0.0	0.0	0.0	2.8
E	0.7	7.0	0.8	0.0	0.0	0.0	8.5
SE	2.4	5.2	0.4	0.0	0.0	0.0	8.1
S	14.3	4.7	0.0	0.0	0.0	0.0	19.0
SW	14.4	10.0	0.4	0.0	0.0	0.0	24.7
W	7.8	9.4	2.8	0.0	0.0	0.0	20.0
NW	2.2	0.8	0.0	0.0	0.0	0.0	3.0
Summary	45.8	43.4	5.1	0.0	0.0	0.0	94.4

% Icon Classes (kph)	46 1.8-6.0	43 6.0-12.0	5 12.0-20.0	0 20.0-29.0	0 29.0-39.0	0 >39.0

PRAMP_RENO 2018/10/01 00:00 - 2018/10/31 23:00 Calm: 5.65% Calm Wind Avg Speed: 0.96(kph)



WIND DIRECTION

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

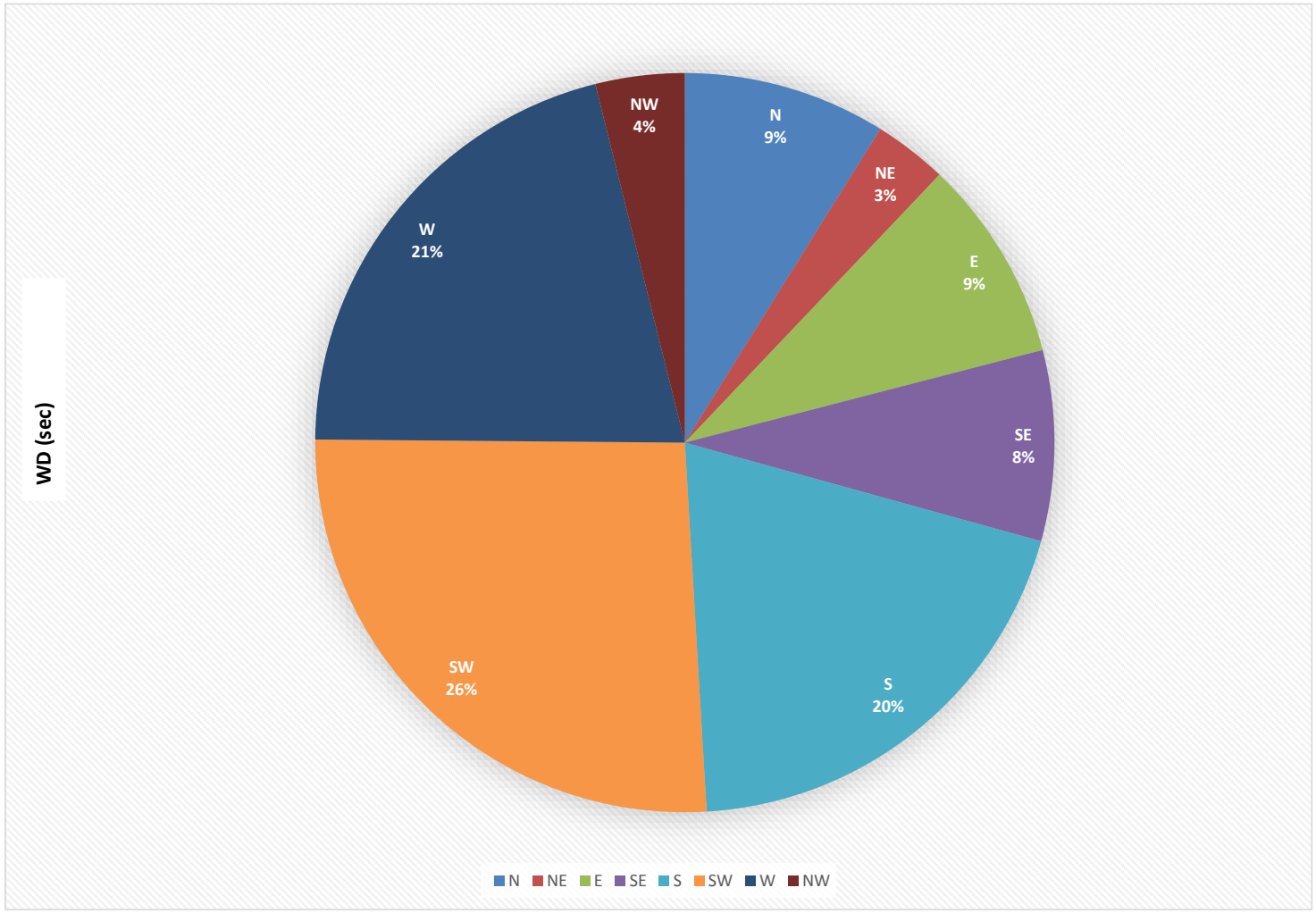
STATUS FLAG CODES

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

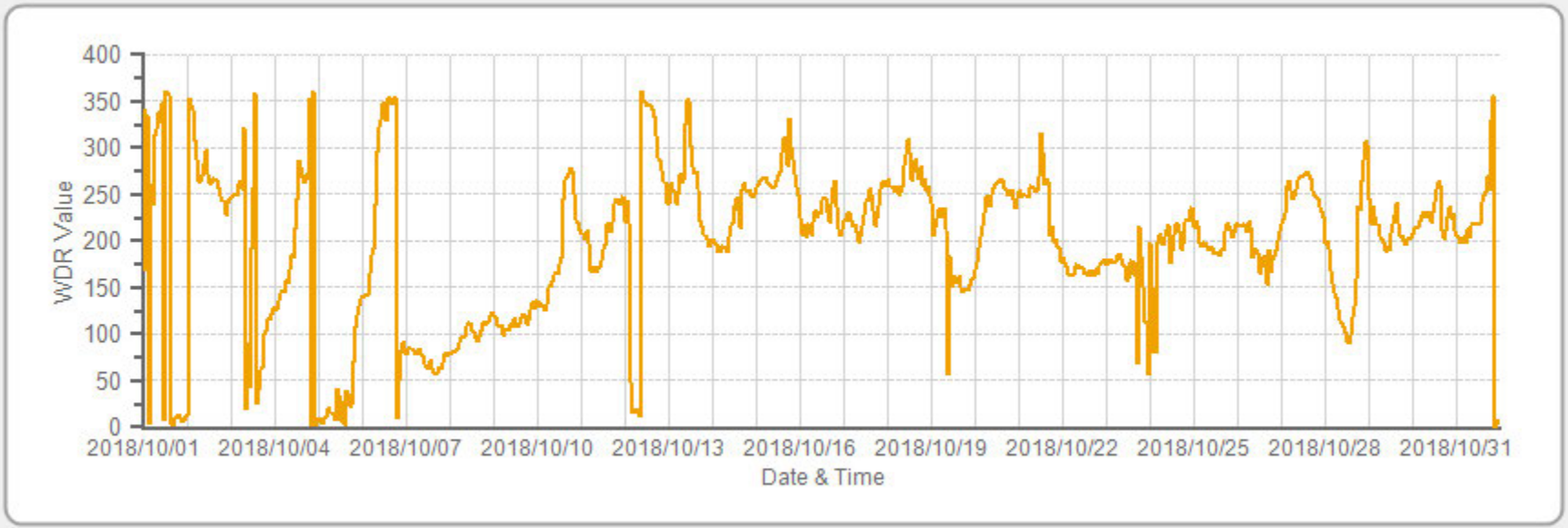
LAST CALIBRATION:	April 5, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	80		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	217 (SW)	

WIND DIRECTION Hourly Averages (WD)



WDR[degwdr] Station: PRAMP_RENO Monthly: 18/10 Type: AVG 1 Hr. [1 Hr.]



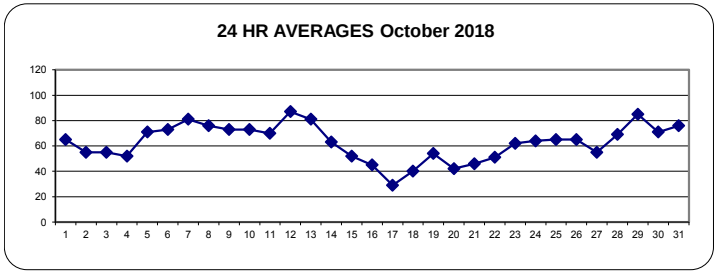
RELATIVE HUMIDITY

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

STATUS FLAG CODES

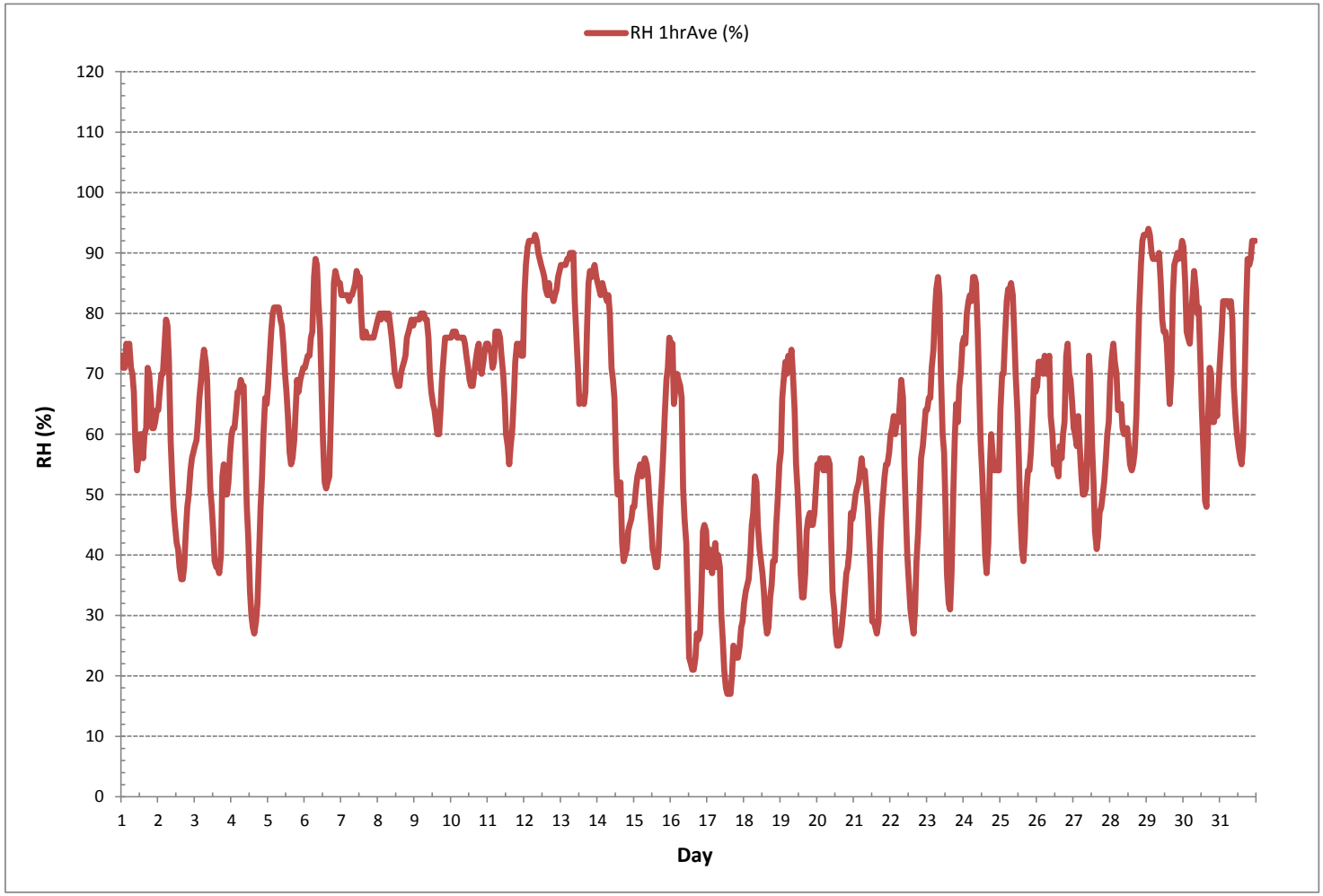
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	17	%	@ HOUR	13	ON DAY	17	
MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR	1	ON DAY	29	
MAXIMUM 24-HR AVERAGE:	87	%			ON DAY	12	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	18		MONTHLY AVERAGE:			63	%

RELATIVE HUMIDITY Hourly Averages (RH %)



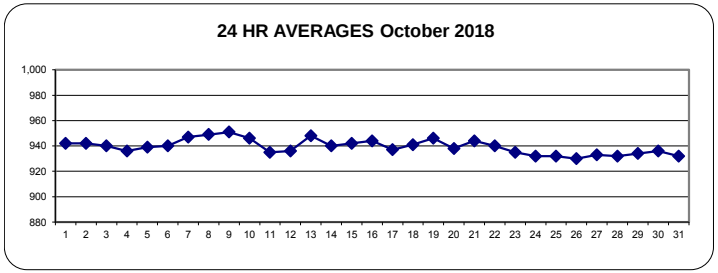
BAROMETRIC PRESSURE

BAROMETRIC PRESSURE Hourly Averages (BP mbar)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	940	939	939	939	939	939	939	939	940	940	941	941	942	942	942	943	943	944	944	945	946	946	947	947	939	947	942	24
2	947	947	946	946	945	945	945	945	944	944	943	942	941	940	940	939	938	938	937	937	937	937	937	937	937	947	942	24
3	937	938	938	938	938	939	939	940	941	941	941	941	941	941	941	940	940	940	940	939	939	939	939	939	937	941	940	24
4	938	938	937	937	937	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	937	937	938	936	938	936	24
5	938	938	939	939	939	939	940	940	940	940	940	940	940	940	940	940	939	939	939	939	938	938	938	937	937	940	939	24
6	937	936	936	936	936	936	936	937	937	938	939	939	940	940	941	941	942	942	943	944	944	944	944	944	936	944	940	24
7	944	945	945	945	945	945	945	945	945	946	946	946	947	947	947	948	948	949	949	949	950	950	950	950	944	950	947	24
8	950	951	951	951	951	951	950	950	950	950	950	950	949	949	949	948	948	948	948	948	948	948	948	949	948	951	949	24
9	949	950	950	950	951	951	951	951	952	952	952	**953**	952	952	951	951	951	950	950	950	950	950	949	949	949	**953**	**951**	24
10	948	948	947	947	947	947	946	946	946	946	946	946	945	945	945	945	945	945	945	945	945	944	944	943	943	948	946	24
11	943	942	942	941	940	939	938	938	937	936	935	935	934	933	932	932	931	931	931	930	930	930	930	929	929	943	935	24
12	929	928	928	**927**	927	927	928	929	930	932	934	935	937	938	939	941	942	942	943	944	944	945	945	945	**927**	945	936	24
13	945	946	946	946	946	947	947	947	948	949	949	949	949	949	949	949	949	949	948	948	948	947	947	947	945	949	948	24
14	946	945	944	944	943	942	942	941	941	941	940	940	939	939	938	938	938	938	938	938	938	938	939	939	938	946	940	24
15	940	940	941	941	941	941	941	941	941	942	942	942	942	942	943	943	943	944	944	945	945	945	945	945	940	945	942	24
16	945	945	945	945	945	945	945	945	946	945	945	945	945	944	944	943	943	942	942	942	942	942	941	941	941	946	944	24
17	941	941	940	940	940	940	939	939	938	938	937	937	936	936	935	935	935	935	935	934	934	935	935	935	934	941	937	24
18	936	936	937	937	937	937	937	938	939	939	940	941	941	941	941	942	943	943	944	944	945	945	946	946	936	946	941	24
19	947	947	947	948	948	948	949	949	949	950	950	950	949	949	948	947	946	945	944	942	941	940	939	938	938	950	946	24
20	938	937	937	937	937	937	937	937	937	938	937	937	937	938	938	938	938	939	939	939	939	939	939	940	937	940	938	24
21	940	941	941	941	942	942	943	944	944	945	945	945	945	945	945	945	945	945	944	944	944	944	944	944	940	945	944	24
22	944	943	943	943	942	941	941	941	941	941	941	940	940	940	939	939	939	938	938	938	938	938	937	937	937	944	940	24
23	937	937	937	937	936	936	936	936	936	936	936	936	936	935	935	934	934	934	933	933	933	933	932	932	932	937	935	24
24	932	932	932	932	932	932	932	932	932	933	933	933	933	933	933	933	932	932	932	932	932	932	932	932	932	933	932	24
25	932	932	932	932	932	932	932	932	932	933	933	933	932	932	932	931	931	931	931	932	932	932	932	932	931	933	932	24
26	932	932	932	932	931	931	932	932	931	931	931	930	930	929	929	929	929	929	929	929	928	928	928	928	928	932	930	24
27	928	928	929	929	929	930	930	931	932	932	933	934	935	936	936	936	936	937	937	937	937	937	937	936	928	937	933	24
28	936	936	935	935	934	933	933	933	932	932	931	931	930	929	929	929	929	930	930	930	931	931	931	931	929	936	932	24
29	932	932	932	932	932	932	933	933	933	934	934	934	935	935	935	935	935	935	935	935	935	935	935	935	932	935	934	24
30	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	935	935	935	935	934	934	936	936	24
31	934	934	933	933	932	932	931	931	930	931	931	930	930	930	929	929	930	931	931	932	933	934	936	937	929	937	932	24
HOURLY MAX	950	951	951	951	951	951	951	951	952	952	952	953	952	952	951	951	951	950	950	950	950	950	950	950				
HOURLY AVG	939	939	939	939	939	939	939	939	939	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939				

STATUS FLAG CODES

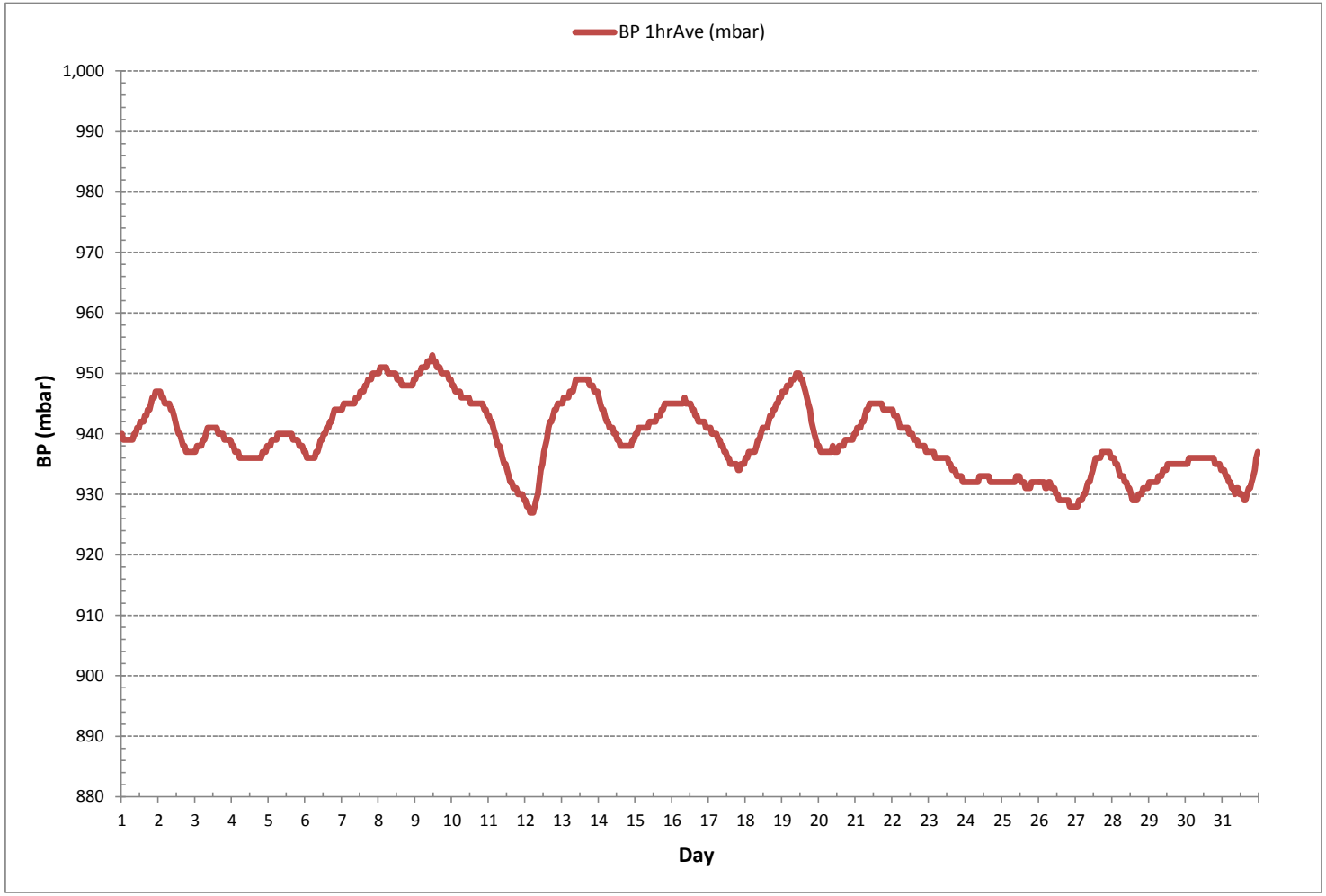
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	927	mbar	@ HOUR	3	ON DAY	12	
MAXIMUM 1-HR AVERAGE:	953	mbar	@ HOUR	11	ON DAY	9	
MAXIMUM 24-HR AVERAGE:	951	mbar			ON DAY	9	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	6		MONTHLY AVERAGE:			939	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

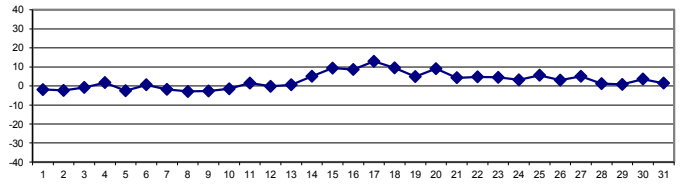
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																											
1	-4.4	-4.3	-4.3	-4.7	-4.5	-4.1	-3.3	-2.7	-1.9	-0.3	0.1	0.0	0.8	1.0	1.3	0.6	-0.2	-1.2	-1.7	-2.0	-2.1	-2.5	-2.8	-3.2	-4.7	1.3	-1.9	24
2	-3.4	-4.3	-5.4	-5.3	-6.1	-7.4	**-7.9**	-6.0	-2.7	-2.0	-1.5	-1.1	0.3	1.0	1.6	1.9	1.9	1.2	-0.5	-1.7	-2.3	-3.1	-2.8	-2.5	**-7.9**	1.9	-2.4	24
3	-2.7	-2.7	-3.3	-4.2	-4.9	-5.6	-5.9	-5.0	-3.6	-1.4	0.4	1.6	2.5	3.3	4.0	3.9	4.2	3.2	-0.6	-1.5	-0.2	-0.5	-0.3	-0.3	-5.9	4.2	-0.8	24
4	-0.3	-0.6	-0.7	-1.3	-1.7	-2.0	-2.0	-1.5	-0.4	1.8	3.6	4.8	6.4	7.0	7.3	7.7	7.6	6.5	3.7	2.1	0.7	-1.3	-2.7	-3.7	-3.7	7.7	1.7	24
5	-4.4	-4.7	-5.1	-5.4	-5.0	-4.7	-4.4	-4.1	-3.7	-3.3	-2.9	-2.1	-1.5	-0.7	0.6	0.9	0.6	0.0	-1.5	-2.2	-1.6	-1.7	-1.7	-1.6	-5.4	0.9	-2.5	24
6	-1.4	-1.4	-1.0	-0.9	-1.2	-0.4	-0.2	-0.3	-0.6	-0.9	0.0	1.9	3.6	5.0	4.9	4.2	4.0	2.5	0.9	-0.4	-0.7	-0.8	-1.0	-1.2	-1.4	5.0	0.6	24
7	-1.5	-1.7	-1.7	-1.8	-1.9	-2.2	-2.4	-2.3	-2.3	-2.2	-2.1	-1.8	-1.4	-0.7	-0.3	-0.6	-1.1	-1.5	-1.8	-2.1	-2.3	-2.5	-2.6	-2.8	-2.8	-0.3	-1.8	24
8	-3.0	-3.2	-3.4	-3.5	-3.7	-3.8	-4.0	-4.0	-3.7	-3.2	-2.7	-1.9	-1.2	-0.7	-0.8	-1.1	-1.6	-2.1	-2.5	-3.3	-3.7	-3.9	-4.1	-3.9	-4.1	-0.7	-2.9	24
9	-4.0	-4.0	-3.9	-4.0	-4.5	-4.6	-4.6	-4.7	-4.6	-4.0	-2.6	-1.9	-1.3	-0.7	-0.3	0.2	0.3	-0.7	-1.9	-2.6	-3.0	-2.5	-2.6	-2.8	-4.7	0.3	-2.7	24
10	-2.8	-2.8	-2.7	-2.8	-2.9	-2.8	-2.7	-2.6	-2.3	-1.7	-1.1	-0.4	0.3	0.3	0.2	-0.1	-0.4	-0.7	-1.1	-1.2	-1.3	-1.5	-1.7	-1.8	-2.9	0.3	-1.5	24
11	-1.9	-1.9	-1.9	-1.9	-2.6	-4.0	-3.5	-2.6	-2.0	-0.5	0.9	2.3	3.6	4.2	4.8	5.1	5.2	5.0	4.7	4.6	4.5	4.5	4.8	5.0	-4.0	5.2	1.5	24
12	4.0	3.5	3.1	2.9	2.8	2.3	0.4	-0.1	-0.5	-1.1	-1.6	-1.6	-1.4	-1.3	-1.2	-1.1	-1.2	-1.3	-1.6	-1.6	-1.6	-1.8	-1.8	-1.8	-1.8	4.0	-0.2	24
13	-1.9	-1.8	-1.7	-1.5	-1.5	-1.4	-1.2	-1.2	-1.0	0.4	1.2	1.5	2.4	2.8	3.9	4.8	4.9	3.0	1.1	0.3	1.0	0.6	-0.2	-0.3	-1.9	4.9	0.6	24
14	-0.6	-0.6	-0.9	-1.6	-1.8	-1.6	-1.6	-1.5	-0.1	2.8	4.9	6.8	9.3	10.5	10.1	10.6	11.5	10.7	10.1	9.4	9.0	9.1	9.1	9.0	-1.8	11.5	5.1	24
15	9.1	8.4	7.9	7.6	7.4	7.9	7.7	7.5	7.9	8.7	10.2	11.3	11.7	12.1	12.6	12.8	12.2	11.0	10.9	10.8	9.3	7.7	7.0	5.6	5.6	12.8	9.4	24
16	4.8	3.3	3.7	2.5	1.7	1.6	1.6	2.2	5.6	7.9	9.3	11.4	14.0	15.4	16.6	17.6	17.3	14.4	13.2	13.0	10.2	6.3	6.6	7.3	1.6	17.6	8.6	24
17	9.0	7.8	8.7	9.0	7.7	6.6	7.4	6.6	8.1	12.2	14.6	17.5	18.9	**19.8**	19.7	19.0	17.2	15.0	14.9	15.3	15.1	14.0	12.7	12.2	6.6	**19.8**	**12.9**	24
18	11.9	11.6	11.3	10.9	9.8	8.4	7.8	6.7	7.7	9.6	10.6	11.2	12.1	13.0	13.5	13.5	13.0	10.2	8.4	6.7	6.4	5.2	4.8	3.4	3.4	13.5	9.5	24
19	3.0	0.5	0.0	-0.8	-0.1	-0.9	-0.4	-0.9	0.0	3.0	6.2	7.5	9.2	10.7	11.7	11.6	10.4	8.1	7.1	6.3	6.8	6.9	6.2	5.5	-0.9	11.7	4.9	24
20	5.3	6.0	5.6	5.8	6.9	7.5	8.7	8.5	8.8	10.6	11.8	12.6	13.3	13.6	13.4	13.1	12.3	10.8	9.6	8.8	8.1	6.8	5.1	5.4	5.1	13.6	9.1	24
21	4.7	4.1	3.6	3.1	2.4	1.8	2.1	1.7	2.4	3.7	5.8	8.0	9.4	9.9	10.3	10.3	9.6	5.4	2.9	1.5	0.7	0.5	0.2	-0.1	-0.1	10.3	4.3	24
22	-0.8	-0.8	-0.9	-0.3	-0.7	-0.5	-0.7	-1.3	0.2	3.9	6.3	8.6	10.5	12.2	13.5	14.3	12.8	8.9	6.9	6.1	4.8	4.4	3.6	2.3	-1.3	14.3	4.7	24
23	2.1	1.6	1.8	1.1	1.0	0.4	-0.4	-0.5	0.8	4.2	6.5	7.6	9.5	12.1	13.5	13.7	11.7	7.0	4.4	2.7	3.0	1.8	1.3	0.3	-0.5	13.7	4.5	24
24	-0.2	-0.2	-1.7	-2.5	-2.5	-2.3	-2.9	-3.2	-2.2	0.2	2.4	5.1	7.3	8.9	10.7	11.4	9.6	5.4	3.8	5.4	6.2	6.1	6.7	6.6	-3.2	11.4	3.2	24
25	3.8	2.1	2.8	0.4	-0.8	-1.3	-1.0	-1.2	-0.1	3.2	5.3	7.1	9.1	12.1	14.0	13.9	12.1	8.8	9.3	8.9	8.2	7.2	5.5	4.5	-1.3	14.0	5.6	24
26	3.2	1.9	1.5	1.2	1.2	-0.2	0.5	-0.6	-0.7	2.9	4.0	5.1	5.2	6.2	6.6	5.5	5.2	4.1	4.2	2.5	1.5	2.7	3.7	4.4	-0.7	6.6	3.0	24
27	4.9	5.4	5.6	5.4	5.7	5.8	5.5	5.4	5.3	5.4	4.2	4.8	6.2	7.2	8.7	8.9	7.9	6.0	4.5	3.4	2.9	1.8	0.8	0.1	0.1	8.9	5.1	24
28	-1.8	-2.7	-2.2	-1.6	-0.9	0.0	-0.1	-0.1	1.1	1.9	2.1	2.6	3.8	4.6	4.8	4.5	3.9	2.7	2.1	1.6	0.9	0.4	0.4	0.6	-2.7	4.8	1.2	24
29	0.5	0.2	-0.2	-0.6	-1.4	-2.0	-2.6	-3.2	-3.1	-1.2	0.5	1.8	3.1	4.7	6.0	6.3	5.0	2.0	0.8	0.4	0.2	0.8	0.4	-0.3	-3.2	6.3	0.8	24
30	-1.4	0.3	1.8	2.1	2.6	2.2	1.8	0.9	1.8	2.7	3.4	5.5	6.3	7.5	9.0	8.8	6.2	3.4	3.4	4.6	4.1	3.4	3.9	3.0	-1.4	9.0	3.6	24
31	1.8	0.8	-0.6	-1.1	-1.1	-1.4	-1.1	-1.3	-0.4	2.6	4.1	5.3	6.0	6.7	6.6	6.0	4.6	3.5	2.9	1.3	-2.4	-3.2	-3.1	-3.0	-3.2	6.7	1.4	24
HOURLY MAX	11.9	11.6	11.3	10.9	9.8	8.4	8.7	8.5	8.8	12.2	14.6	17.5	18.9	19.8	19.7	19.0	17.3	15.0	14.9	15.3	15.1	14.0	12.7	12.2				
HOURLY AVG	1.0	0.6	0.5	0.2	0.0	-0.3	-0.3	-0.4	0.4	2.1	3.4	4.6	5.7	6.7	7.3	7.4	6.7	4.9	3.8	3.1	2.7	2.1	1.8	1.5				

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

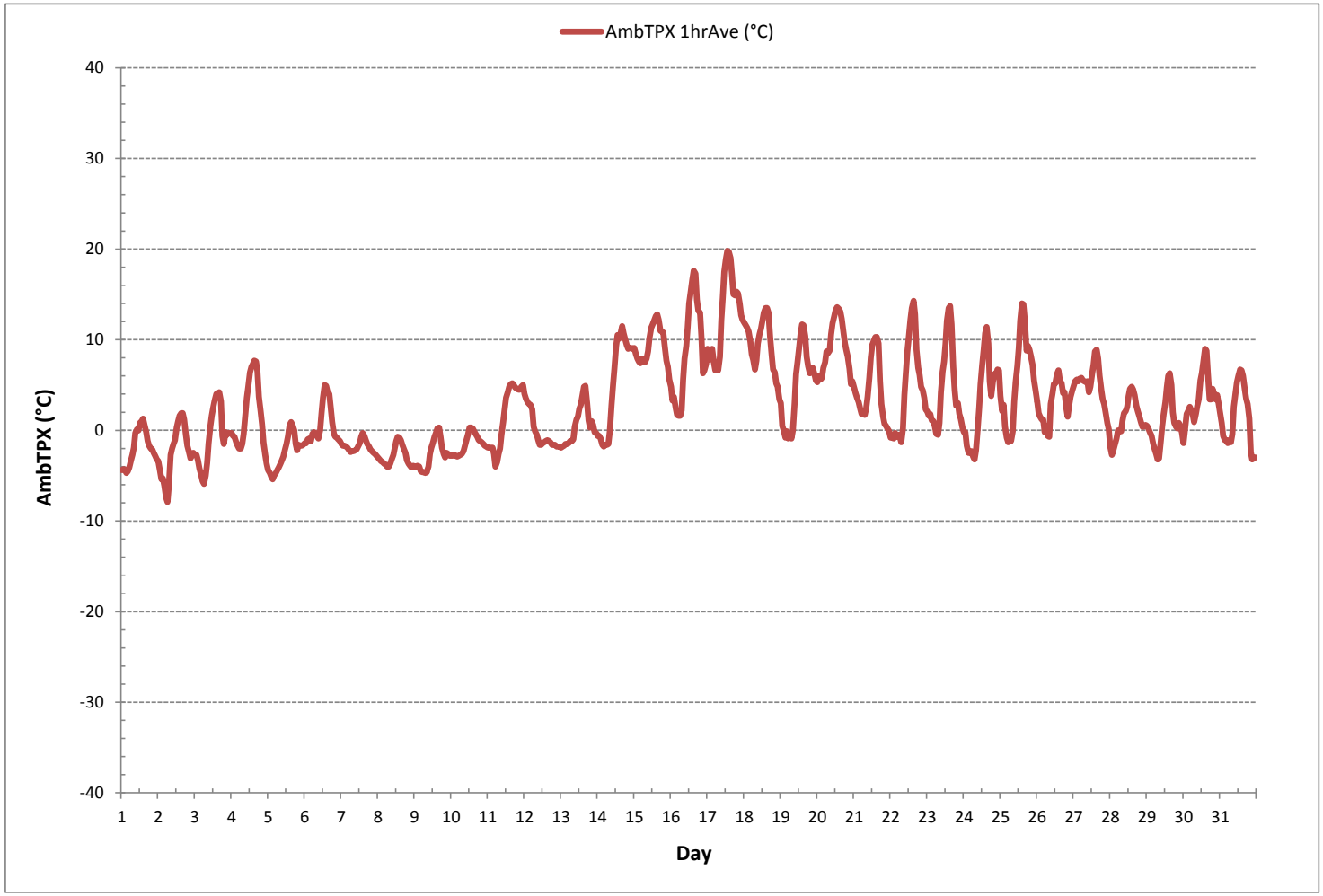
24 HR AVERAGES October 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-7.9	°C	@ HOUR	6	ON DAY	2	
MAXIMUM 1-HR AVERAGE:	19.8	°C	@ HOUR	13	ON DAY	17	
MAXIMUM 24-HR AVERAGE:	12.9	°C			ON DAY	17	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	5.2		MONTHLY AVERAGE:			2.7	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

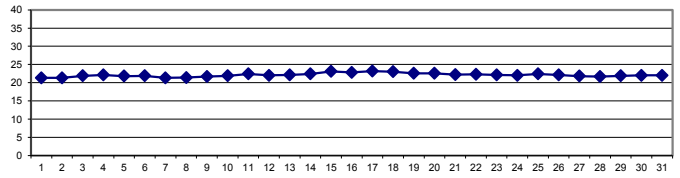
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																											
1	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.0	21.2	21.0	**20.8**	20.8	20.9	21.1	21.1	21.1	21.2	21.2	21.1	21.2	21.1	**20.8**	21.6	21.3	24
2	21.1	21.2	21.2	21.2	21.2	21.3	21.3	21.3	21.0	20.9	21.0	20.9	21.1	21.2	21.6	22.2	22.9	21.6	21.3	21.3	21.3	21.2	21.3	21.2	20.9	22.9	21.3	24
3	21.2	21.2	21.2	21.2	21.2	21.3	21.3	21.3	21.2	21.2	21.4	22.2	22.9	22.6	22.5	22.5	22.7	22.8	23.1	22.9	22.3	21.7	21.4	21.4	21.2	23.1	21.9	24
4	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.5	21.5	21.7	22.4	22.7	22.6	22.5	22.7	22.8	22.9	23.0	23.0	23.2	22.9	22.2	21.5	21.5	21.3	23.2	22.1	24
5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.5	21.4	21.2	21.4	21.4	21.8	22.7	22.8	22.7	22.9	22.9	22.3	21.8	21.3	21.4	21.4	21.2	22.9	21.8	24
6	21.4	21.4	21.4	21.4	21.4	21.3	21.3	21.3	21.4	21.2	21.3	21.9	22.8	22.4	22.5	22.7	22.8	22.9	22.9	22.5	22.1	21.8	21.4	21.3	21.2	22.9	21.9	24
7	21.4	21.3	21.4	21.3	21.4	21.4	21.3	21.4	21.3	21.3	21.3	21.3	21.3	21.2	21.2	21.2	21.3	21.2	21.3	21.3	21.3	21.3	21.4	21.4	21.2	21.4	21.3	24
8	21.3	21.4	21.3	21.4	21.3	21.4	21.4	21.4	21.3	21.4	21.3	21.3	21.2	21.3	21.6	21.5	21.3	21.3	21.4	21.4	21.5	21.5	21.5	21.6	21.2	21.6	21.4	24
9	21.6	21.5	21.5	21.5	21.6	21.6	21.6	21.6	21.6	21.5	21.3	21.1	21.1	21.5	21.8	22.1	22.7	23.0	22.1	21.5	21.6	21.6	21.6	21.6	21.1	23.0	21.7	24
10	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.5	21.7	21.7	22.3	22.6	22.7	22.7	22.5	22.3	22.1	21.8	21.5	21.6	21.6	21.6	21.5	22.7	21.9	24
11	21.6	21.6	21.6	21.7	21.6	21.7	21.6	21.7	21.7	21.5	21.9	22.7	23.1	23.1	23.1	23.1	23.2	23.1	23.2	23.1	23.2	23.2	23.1	23.2	21.5	23.2	22.4	24
12	23.1	23.2	23.2	23.2	23.2	23.2	23.0	22.6	22.1	21.6	21.5	21.5	21.4	21.5	21.4	21.3	21.4	21.5	21.4	21.5	21.6	21.6	21.6	21.5	21.3	23.2	22.0	24
13	21.6	21.6	21.5	21.6	21.5	21.5	21.5	21.5	21.5	21.6	22.0	22.6	22.9	22.8	22.7	22.7	22.9	23.0	23.1	22.9	22.6	22.2	21.8	21.5	21.5	23.1	22.1	24
14	21.5	21.6	21.5	21.6	21.6	21.6	21.6	21.6	21.7	21.7	22.4	22.9	22.8	22.9	23.0	23.1	23.2	23.1	23.0	23.1	23.1	23.1	23.1	23.1	21.5	23.2	22.4	24
15	23.1	23.1	23.0	23.1	23.0	23.1	23.0	23.1	23.1	23.1	23.1	23.1	23.2	23.3	23.2	23.3	23.2	23.3	23.2	23.2	23.1	23.1	23.1	23.1	23.0	23.3	23.1	24
16	23.1	23.1	23.0	22.7	22.2	21.8	21.5	21.6	21.7	22.6	22.9	23.0	23.0	23.1	23.2	23.3	23.4	23.5	23.3	23.3	23.2	23.0	23.1	23.1	21.5	23.5	22.8	24
17	23.1	23.0	23.0	23.1	23.0	23.2	23.1	23.1	23.1	22.9	23.0	23.1	23.3	23.4	23.5	23.5	23.5	23.5	23.4	23.3	23.4	23.2	23.3	23.2	22.9	23.5	**23.2**	24
18	23.2	23.2	23.1	23.1	23.1	23.1	23.1	23.0	22.2	23.5	23.4	23.6	23.6	**23.7**	23.6	23.6	23.6	23.3	23.3	22.7	22.0	21.9	21.9	21.9	21.9	**23.7**	23.0	24
19	21.9	21.9	21.8	21.9	21.9	21.9	21.9	22.0	22.3	22.4	22.9	22.3	22.9	23.0	23.3	23.4	23.5	23.3	23.3	23.4	23.3	23.1	22.9	22.5	21.8	23.5	22.6	24
20	22.0	22.1	22.1	21.9	21.9	22.0	22.2	22.2	22.3	22.8	23.2	23.1	23.1	23.2	23.2	23.3	23.3	23.3	23.3	23.0	22.5	22.0	21.8	21.9	21.8	23.3	22.6	24
21	21.8	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.6	21.6	22.2	22.8	22.9	22.9	23.1	23.2	23.2	22.6	21.9	21.9	21.9	21.9	21.9	21.6	23.2	22.2	24
22	21.9	21.9	21.9	21.9	21.9	21.8	21.7	21.7	21.7	21.5	21.7	22.6	22.7	22.9	23.1	23.4	23.3	23.2	23.2	23.3	22.9	22.4	21.8	21.7	21.5	23.4	22.3	24
23	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.5	21.6	22.4	22.7	22.8	23.0	23.3	23.2	23.1	23.0	22.3	21.7	21.7	21.7	21.7	21.5	23.3	22.1	24
24	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.8	21.7	21.6	21.3	21.4	22.3	22.8	22.8	23.0	23.0	23.1	23.0	22.4	22.0	21.8	21.6	21.7	21.3	23.1	22.0	24
25	21.6	21.7	21.6	21.7	21.7	21.7	21.7	21.7	21.7	21.5	21.5	22.1	22.9	23.1	23.2	23.3	23.2	23.2	23.2	23.2	23.3	23.2	23.0	22.6	21.5	23.3	22.4	24
26	21.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.5	21.3	21.7	22.3	22.7	23.1	23.2	23.3	23.2	22.9	22.8	22.1	21.7	21.5	21.5	21.3	23.3	22.1	24
27	21.7	21.6	21.6	21.6	21.6	21.5	21.7	21.6	21.6	21.6	21.7	21.6	21.6	21.7	22.2	23.0	23.0	22.7	22.1	21.6	21.7	21.6	21.7	21.7	21.5	23.0	21.8	24
28	21.6	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.7	21.7	21.6	21.6	21.6	21.6	21.7	21.7	21.6	21.6	21.7	21.7	21.6	21.6	21.6	21.7	21.6	21.7	21.7	24
29	21.7	21.7	21.6	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.4	21.3	21.4	21.9	22.8	22.9	23.1	22.8	21.9	21.7	21.7	21.7	21.7	21.7	21.3	23.1	21.9	24
30	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.7	21.7	21.7	21.7	21.8	22.1	22.4	22.9	23.0	23.1	22.8	22.2	21.8	21.6	21.7	21.7	21.6	21.6	23.1	22.0	24
31	21.6	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.6	21.4	21.8	22.3	22.9	23.1	23.2	23.0	22.6	22.1	21.6	21.6	21.6	21.6	21.6	21.4	23.2	22.0	24
HOURLY MAX	23.2	23.2	23.2	23.2	23.2	23.2	23.1	23.1	23.1	23.5	23.4	23.6	23.6	23.7	23.6	23.6	23.6	23.5	23.4	23.4	23.4	23.2	23.3	23.2				
HOURLY AVG	21.8	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	22.1	22.3	22.4	22.6	22.7	22.8	22.7	22.6	22.4	22.2	22.0	21.9	21.9				

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

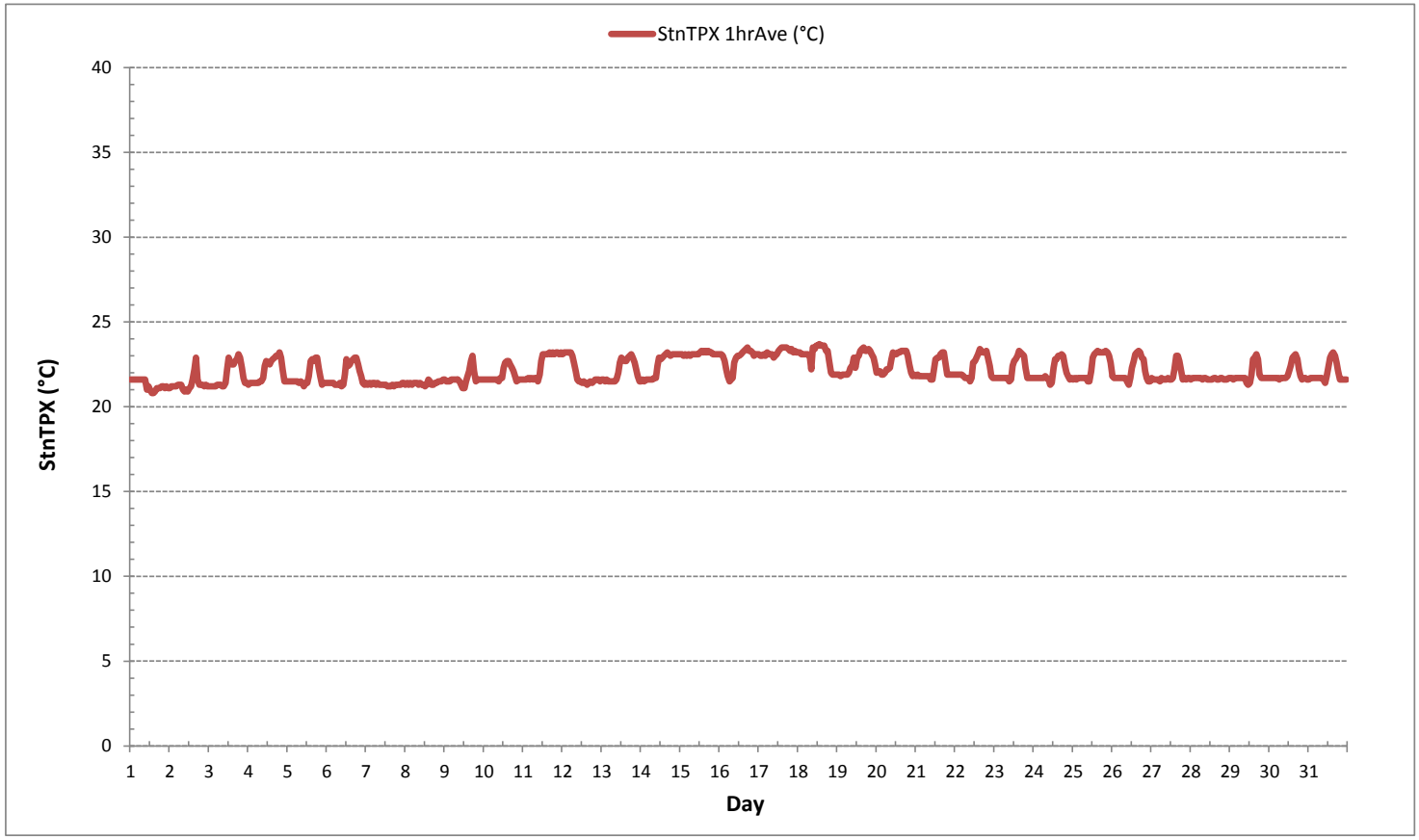
24 HR AVERAGES October 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	20.8	°C	@ HOUR	13	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	23.7	°C	@ HOUR	13	ON DAY	18	
MAXIMUM 24-HR AVERAGE:	23.2	°C			ON DAY	17	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.7		MONTHLY AVERAGE:			22.1	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100A Sulphur Dioxide Analyzer Calibration

Date:	October 18, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.68	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 181341226 expires June 7, 2020	22.6	°C
Location/Station Name:	RENO	**Weather Conditions:**	Mainly sunny		
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	11:48	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	15:52	**Cal Gas Expiry Date:**	December 8, 2019		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a		

Analyzer:

Serial Number/Owner:	841	Maxxam	**Range ppb:**	500
Last Calibration Date:	September 13, 2018		**As Found C.F.:**	0.967
Previous C.F.:	0.997		**New C.F.:**	1.001

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2019
Calibrator ID/Expiry Date:	Sabio id# 17200415 expires August 21, 2019
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

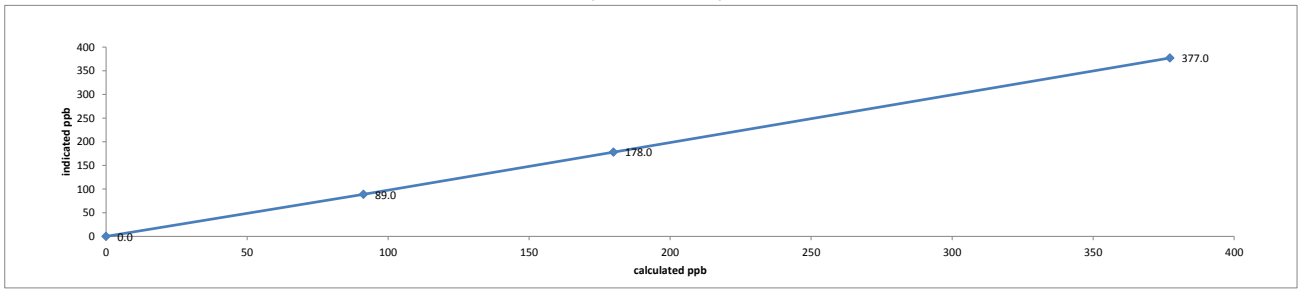
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**			
as found zero	6010	0.00	6010	0.0	0.3	n/a
as found high	5966	45.20	6011	379.7	393	0.967
adjusted zero	6020	0.00	6020	0.0	0	n/a
adjusted high	5982	45.02	6027	377.2	377	1.001
mid	5996	21.44	6017	179.9	178	1.011
low	6003	10.87	6014	91.3	89	1.026
calibrator zero	6020	0.00	6020	0.0	0	n/a
					Average C.F.=	1.012

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.999**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.26%**	**± 3% F.S.**
% change in C.F. from last cal=	**3.01%**	**± 10%**

API 100A Sulphur Dioxide Analyzer Calibration



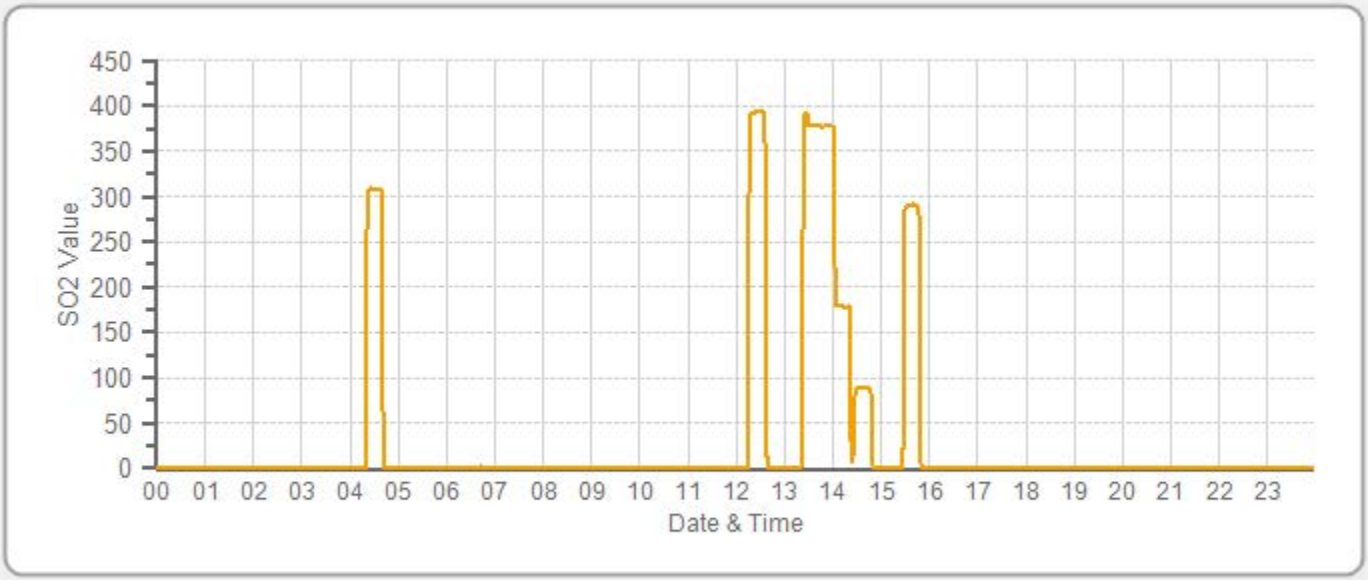
	As found:		As left:
Slope:	1.118	Slope:	1.072
Offset:	48.6	Offset:	49.0
Hvps:	763	Hvps:	763
Dcps:	2559	Dcps:	2559
Rcell Temp:	50.0	Rcell Temp:	49.7
Box Temp:	31.0	Box Temp:	32.2
Pmt Temp:	7.1	Pmt Temp:	7.0
Izs Temp:	35.3	Izs Temp:	35.1
Pres:	24.8	Pres:	25.0
Samp Fl:	668	Samp Fl:	680
Pmt:	65.1	Pmt:	63.5
Uv Lamp:	1919.3	Uv Lamp:	1969.8
Lamp Ratio:	95.0	Lamp Ratio:	97.5
Str Lgt:	27.2	Str Lgt:	26.3
Drk Pmt:	25.1	Drk Pmt:	25.0
Drk Lmp:	-17.1	Drk Lmp:	-17.1
Expected Value:	305.7	Expected Value:	290.2

Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

SO2[ppb] Station: PRAMP_RENO Daily: 18/10/18 Type: AVG 1 Min. [1 Min.]



TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	October 19, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	28.01	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 181341226 expires June 7, 2020	22	°C
Location/Station Name:	RENO	**Weather Conditions:**	Mainly sunny		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	7:53	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	11:46	**Cal Gas Expiry Date:**	August 23, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CD Nova CDN-101 #534		

Analyzer:

Serial Number/Owner:	1162460022 Maxxam	**Range ppb:**	100
Last Calibration Date:	September 13, 2018	**As Found C.F.:**	0.984
Previous C.F.:	0.998	**New C.F.:**	0.999

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018
Calibrator ID/Expiry Date:	Environics id# 1991 expires March 15, 2019
Cal Gas Cylinder I.D. # :	LL119500
Cal Gas Conc. (ppm):	9.8

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	**Oct 18** 08:43/09:02
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	0.1
Analyzer Response: (ppb):	0.1
Zero Corrected Result (ppb):	0.0

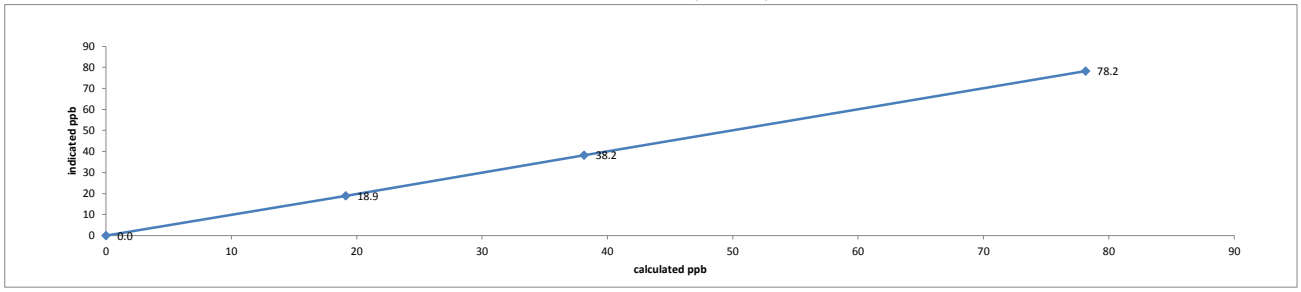
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**		
as found zero	7470	0.00	7470	0.0	0.06	n/a
as found high	7407	59.81	7467	78.5	79.84	0.984
adjusted zero	7482	0.00	7482	0.0	0.00	n/a
adjusted high	7425	59.69	7485	78.2	78.22	0.999
mid	7451	29.11	7480	38.1	38.21	0.998
low	7462	14.59	7477	19.1	18.87	1.013
calibrator zero	7482	0.00	7482	0.0	0.00	n/a
					Average C.F.=	1.004

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.998**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.10%**	**± 3% F.S.**
% change in C.F. from last cal=	**1.41%**	**± 10%**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



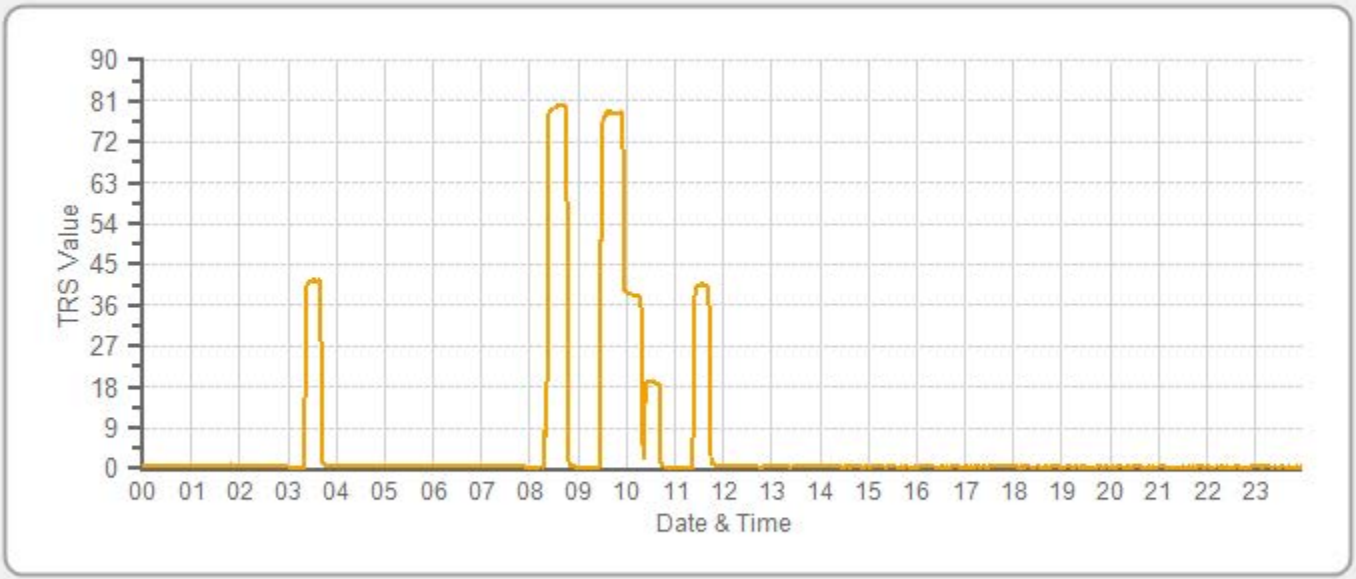
As found:		As left:	
Bkg:	2.13	Bkg:	2.20
Coef:	0.943	Coef:	0.927
Pmt:	-706.7	Pmt:	-706.7
Flash:	993	Flash:	993
Internal:	29.2	Internal:	29.2
Chamber:	45.0	Chamber:	45.0
Perm Oven Gas:	35.00	Perm Oven Gas:	35.00
Perm Oven Heater:	34.13	Perm Oven Heater:	34.13
Pressure:	637.7	Pressure:	637.7
Sample Flow:	0.409	Sample Flow:	0.409
Lamp Intensity:	83	Lamp Intensity:	83
Converter:	825	Converter:	825
Converter Set:	825	Converter Set:	825
Averaging Time:	120	Averaging Time:	120
Expected Value:	41.6	Expected Value:	40.8

Comments:

The manifold blower was found to be working normally.

The calibration gas was changed and the calibration was repeated.

TRS[ppb] Station: PRAMP_RENO Daily: 18/10/19 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	October 18, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.68	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 181341226 expires June 7, 2020	22.6	°C
Location/Station Name:	RENO	**Weather Conditions:**	Mainly sunny		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	routine monthly		
Start/End Time 24 hr. (mst):	08:35/12:33	**Performed By/Reviewer:**	LIMIN LI	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

Serial Number/Owner:	1314057759	Maxxam
Measured Flow:	1231 sccm	
Last Calibration Date:	September 13, 2018	
Range ppm:	20 CH4/20 NMHC/40 THC	

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	0.996	1.001	0.998
NMHC =	1.001	1.006	1.001
THC =	0.999	1.003	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018		
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018		
Calibrator ID/Expiry Date:	Sabio id# 17200415 expires August 21, 2019		
Cal Gas Cylinder I.D. # :	LL168404		
CH4 Cylinder Conc.=	597.0	206.0	**=C_3H_8 Cylinder Conc.**
CH_4 expressed as C_3H_8=	566.5	1163.5	**=total CH4 equivalent**

Standard Calibration Points for Analyzer Range of 20/20/40 ppm

Point	CH4	NMHC	THC
High	**13.00**	**13.00**	**26.00**
Mid	**7.00**	**7.00**	**14.00**
Low	**3.00**	**3.00**	**6.00**

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

Calibrator Flow Rates (cc/min)										Correction Factors:		
Point	**Diluent**	**Cal Gas**	**Total Flow**	**Calculated CH_4 (ppm)**	**Calculated NMHC (ppm)**	**Calculated THC (ppm)**	**Indicated CH_4 (ppm)**	**Indicated NMHC (ppm)**	**Indicated THC (ppm)**	**CH_4**	**NMHC**	**THC**
as found zero	3453	0.00	3453	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	3358	84.37	3442	14.63	13.89	28.52	14.62	13.81	28.43	1.001	1.006	1.003
adjusted zero	3471	0.00	3471	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	3390	84.01	3474	14.44	13.70	28.14	14.47	13.68	28.15	0.998	1.001	1.000
mid	3440	42.17	3482	7.23	6.86	14.09	7.27	6.86	14.13	0.995	1.000	0.997
low	3461	21.14	3482	3.62	3.44	7.06	3.65	3.45	7.10	0.993	0.997	0.995
calibrator zero	3471	0.00	3471	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.995	0.999	0.997

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.002**	**0.998**	**1.000**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.06%**	**0.04%**	**0.05%**	**± 3% F.S.**
% change in C.F. from last cal=	**-0.50%**	**-0.45%**	**-0.42%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-289.7		Calibration History cnt'd:	NM Peak Area:	86449
Temperatures:	Detector Oven:	175		Crucial Settings:	Methane Start:	8
	Filter:	175			Methane End:	16
	Column Oven:	75.0			Backflush:	18
	Internal:	33.2			NMHV Start:	26
Cylinder Pressures/reg.:	Carrier:	2500	50		NMHC End:	56
	Fuel:	1250	50	Run History>1:	Date:	18OCT18
	Span Gas:	550	24		Time:	08:08
	Zero Air Generator:	50			CH_4 PK HT:	2529
Internal Pressures:	Carrier:	31.73			CH_4 RT:	11.6
	Fuel:	41.6			CH_4 Baseline:	1994
	Air:	25.9			CH_4 LOD:	66
FID Status:	Status:	LIT			CH_4 SD:	22
	Counts:	23930			CH_4 CONC:	1.96
	Flame:	405.0			NM PK HT:	0
	Det Base:	175			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	02Oct18 16:42			NM CONC:	0.00
	Flameouts:	1			NM Base Start:	1969
	Det Oven at Start:	45			NM Base End:	1965
	Col Oven at Start:	26.6			NM LOD:	4
Calibration History:	Time:	18OCT18 :0944			NM Start IDX:	11
	Type:	SPAN			NM End IDX:	58
	Status:	GOOD			NM Max Slope:	5.6e-01
	Check/Adjust:	ADJUST			NM Min Slope:	-9.2e-01
	CH_4 Span Conc:	14.44			NM PT Count:	0
	CH_4 SP Ratio:	0.000767		Expected Values:	Previous CH4:	10.3
	CH_4 RT:	11.6			Previous NMHC	11.09
	CH_4 PK IDX:	18			Previous THC:	21.43
	CH_4 PK HT:	18817			New CH4:	10.30
	NM Span Conc:	13.70			New NMHC	11.09
	NM SP Ratio:	0.000158			New THC:	21.43

Comments:

The analyzer sample inlet filter was changed.

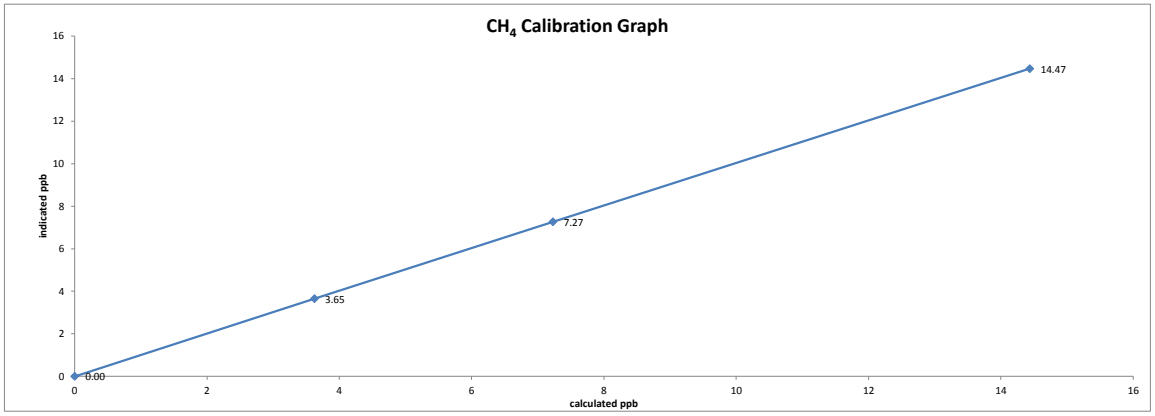
A new nitrogen cylinder was installed.

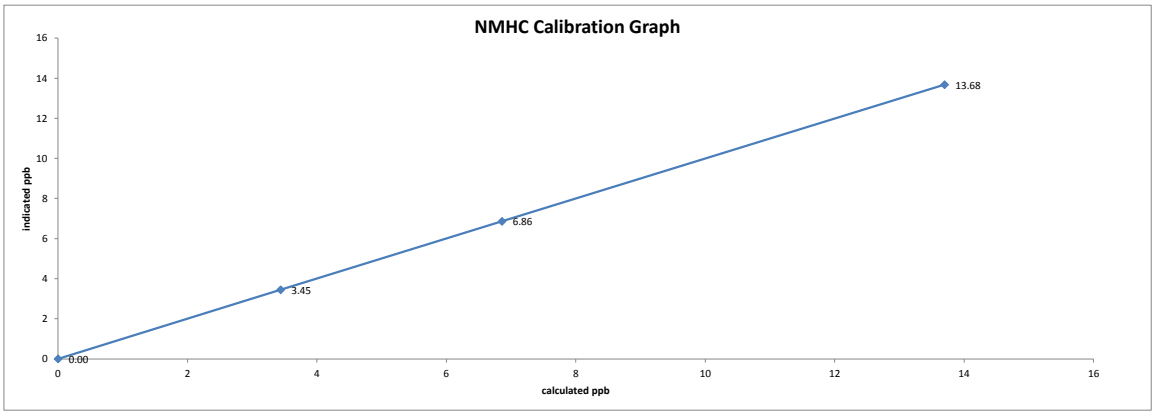
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

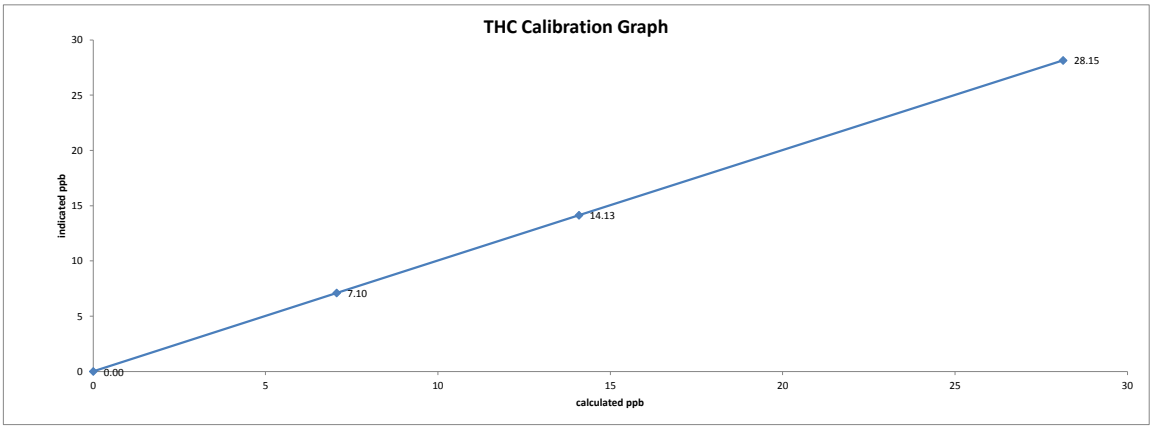
The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

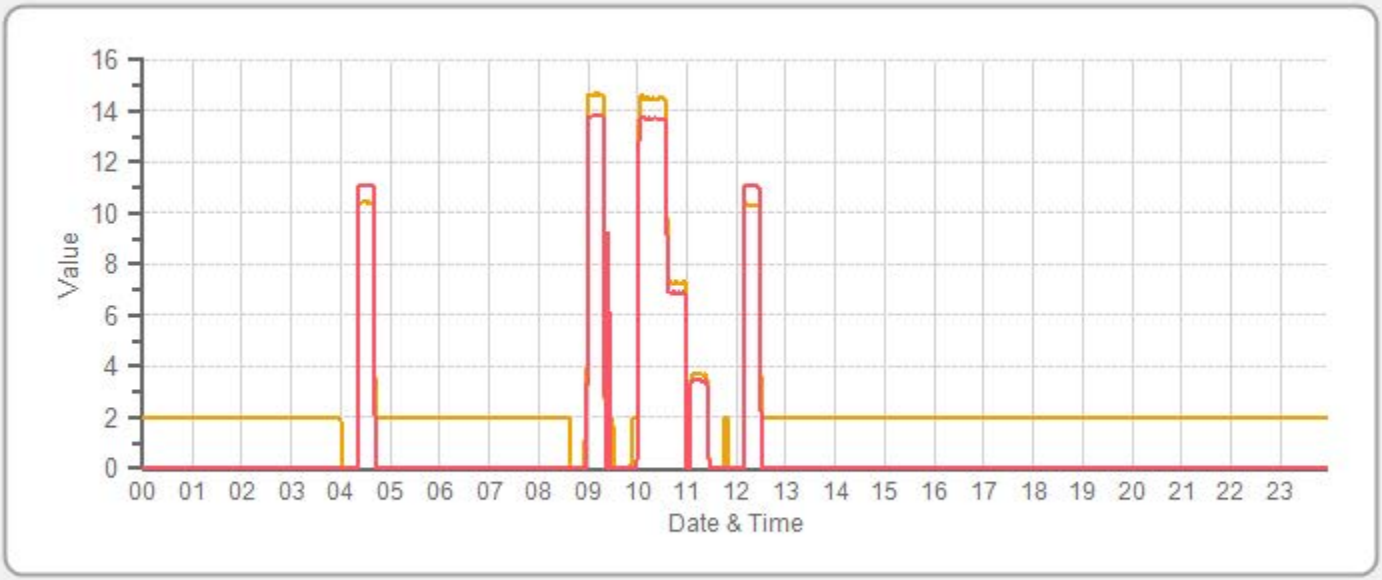
Date:	October 18, 2018	Start/End Time 24 hr. (mst):	08:35/12:33
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	RENO	Calibration Method:	Gas Dilution







Station: PRAMP_RENO Daily: 18/10/18 Type: AVG 1 Min. [1 Min.]



WIND SYSTEM

Meteorological Sensor Audit/Calibration

Location Information

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

Wind Sensor Information

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

Wind Calibrator Information

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

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

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

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

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

Comments:

METEOROLOGICAL SYSTEMS CHECK

Meteorological System Checklist

Date:	October 18, 2018		
Technician:	Limin Li		
Reviewer:	Rob Fisher		
Station:	PRAMP RENO		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43172VC	60837897
Barometric Pressure Sensor:	MetOne	92	R12877
Relative Humidity Sensor:	RM Young	43172VC	60837897
Anemometer:	RM Young	05305VK	149769
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	September 12, 2018		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 181341226 expires June 7, 2020		
Reference Temperature (^{o}C):	10.9		
Station - Ambient Temperature (^{o}C):	10.7		
Temperature Difference (^{o}C):	0.2		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	September 12, 2018		
Reference Barometer ID:	Brunton 05535 expires December 15, 2018		
Reference Pressure - Units/Reading:	inHg	27.74	
Station Pressure - Units/Reading:	inHg	27.77	
Pressure Tolerance +/- 15% of error:	24 - 32	-0.11%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	September 12, 2018		
Reference Hygrometer ID:	F.S. 181341226 expires June 7, 2020		
Reference Hygrometer % RH- Reading:	43.70		
Station Hygrometer % RH- Reading:	40.00		
RH Tolerance +/- 15% of difference:	37.15 - 50.26	8.5%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	September 12, 2018	Previous check date:	September 12, 2018
Wind Speed Observed (kph):	5 ~ 15	Wind Direction Observed:	W
Wind speed on Data Logger (kph):	10	Wind Direction on Data Logger:	W
		Wind Direction Pass/Fail?:	Pass

CALIBRATORS

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-130A

Company Maxxam **Operator:** Mike

Calibrator:

Make/Model	Sabio	
Serial Number	17200415	
Last Verification Date	May 16, 2017	
NO Cylinder S/N	LL104183	
NO [PPM]	50.8 NOx [PPM]	50.9
Expiry Date	October 24, 2020	

Flow Measurement Device:

Make/Model	Bios Definer 220
Serial Number	H=128686; L=129069
Temperature (°C)	22.2 C
Barometric Pressure	706.1mmHg

Dilution Flow (sccm)

Pt. #1 5057 Pt. #2 5055 Pt. #3 5070

Gas Flow (sccm)

Pt. #1 77.4 Pt. #2 37.9 Pt. #3 19.1

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5102	0.0	0.0000	0.0000	0.0001	-0.0002	-0.0001	Limit ± 10%	
5057	77.4	0.7775	0.7779	0.7973	0.0012	0.7985	3%	3%
5055	37.9	0.3809	0.3816	0.3896	0.0000	0.3896	2%	2%
5070	19.1	0.1914	0.1918	0.1962	0.0000	0.1962	2%	2%
						Absolute Average Percent Difference	2%	2%

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

NO		LIMITS	NOx	
Correlation=	1.0000	≥ 0.990	Correlation=	1.0000
m (Slope)=	1.0253	0.90-1.10	m (Slope)=	1.0266
b (Intercept % of FS)=	-0.0176	± 3% F.S.	b (Intercept % of FS)=	-0.0763

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
						NO_2	% Diff. Limit
5057	0.0	0.0000	0.7868	0.0006	0.7874		
5057	500.0	0.5003	0.2865	0.5016	0.7875	0%	± 10%
5057	275.0	0.2802	0.5066	0.2797	0.7862	0%	± 10%
5057	100.0	0.1053	0.6815	0.1046	0.7863	-1%	± 10%
				Absolute Average Percent Difference		0%	± 10%

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

NO_2		LIMITS
Correlation=	1.0000	≥ 0.995
m (Slope)=	1.0020	0.90-1.10
b (Intercept % of FS)=	-0.0259	± 3% F.S.

AENV Standards

Audit Calibrator

Make/Model	Thermo 146i
Serial/AMU Number	1809
SRM Gas Cylinder No.	APEX1170572
Cylinder Conc. (ppm)	49.99

NO_X Analyzer

Make/Model	Thermo 42i
Serial/AMU Number	1868
Last Calibration Date	August 16, 2018
Full Scale (ppm)	1.0
Cylinder Gas Expiry Date	November 15, 2020

COMMENTS:

Auditor: Shea Beaton Date: August 21, 2018

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-560A

Company: Maxxam **Operator:** Chris W

Calibrator:				**Flow Measurement Device:**	
Make/Model	Environics 2000			Make/Model	Mesa Defender 530
Serial Number	1991			Serial Number	L-153351 H-152571
Last Verification Date	March 2017			Temperature (°C)	25.0 C
NO Cylinder S/N	LL108015			Barometric Pressure	695 mmHg
NO [PPM]	52.2	NOx [PPM]	52.3		
Expiry Date	Oct 2020				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4988	75.1	0.786	0.787	0.785	-0.002	0.783	0%	-1%
4988	36.5	0.382	0.383	0.382	0.001	0.383	0%	0%
4988	18.3	0.192	0.192	0.190	0.000	0.190	-1%	-1%
						Absolute Average Percent Difference	0%	1%

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)=	0.9996	**0.90-1.10**	m (Slope)=	0.9956
b (Intercept % of FS)=	-0.0599	**± 3% F.S.**	b (Intercept % of FS)=	-0.0005

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4988	0.000	0.000	0.788	-0.001	0.787	NO_2	% Diff. Limit
4988	0.350	0.519	0.269	0.512	0.780	-1%	± 10%
4988	0.160	0.231	0.557	0.229	0.786	0%	± 10%
4988	0.070	0.099	0.689	0.097	0.787	-1%	± 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)=	0.9885	**0.90-1.10**
b (Intercept % of FS)=	-0.0567	**± 3% F.S.**

AENV Standards **Audit Calibrator**		**NO_X Analyzer**	
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	APEX1170572	Last Calibration Date	March 14, 2018
Cylinder Conc. (ppm)	49.99	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	November 2020

COMMENTS: Cylinder contains 47.9 ppm SO2.

Auditor: Al Clark Date: March 15, 2018

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

Alberta Government

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 [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Shea Beaton Date: January 26, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-213CGA

Company: Maxxam **Operator's Name:** C. Wesson

Cylinder #: LL119500 Concentration PPM: 9.8 Tolerance(%) 2 Certified By: Praxair

Expiry Date: August 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: September 22, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: January 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 23.5 C
B.P. 705 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980

Instrument Settings: Zero: 22.4 Span: 1.091 Range: 0.1

Last Calibration: Date: Sep 22/17 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
5000	0.0	0.0000			
5114	39.5	0.0734	0.00772	129.468	9.5
5096	18.5	0.0345	0.00363	275.459	9.5
5089	9.5	0.0178	0.00187	535.684	9.5
				Average Cylinder Concentration:	**9.5**

Previous Stated Concentration PPM: 9.8

Percent variance from Stated: **3**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [ ] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [X]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: September 22, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-488CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL168404 Conc CH4 (PPM) 597/206 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

Make/Model	R&R MFC 201		
Serial Number	AMU 1690		
Last Verification Date	December 13, 2017		
Gas Type	CH4	Conc.	990.4
Cylinder Number	5604875	Expiry Date	July 2021
Gas Type	C3H8	Conc.	246.5
Cylinder Number	XF003845B	Expiry Date	July 2022

Flow Measurement Device:

Make/Model	Mesa Definer 220
Serial Number	H-133034 / L-132702
Temp.°C	23.1 C
B.P.	707 mmHg

Reference Analyzer:

Make/Model: Teco 55i Serial/AMU Number: 2108

Instrument Settings Zero: N/A Span: N/A Range: 20.0

Last Calibration: Date: Dec 12/17 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.22	12.69	0.02	45.00	595	208
3547	39.8	6.64	6.42	0.01	89.12	592	208
3560	19.8	3.33	3.23	0.01	179.80	599	211
					Average Cylinder Concentration:	**595**	**209**

	CH4	C3H8
Previous Stated Concentration PPM:	597	206
Percent variance from Stated:	**0**	**1**

Cylinder gas tolerances based on CH4 only

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

APPENDIX III
MAXIMUM INSTANTANEOUS DATA

Maxxam
A Bureau Veritas Group Company

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	S	0	0	0	1	1	24
2	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	24
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	24
4	1	1	1	1	0	1	1	1	1	1	1	2	2	2	1	1	1	1	S	1	1	1	1	1	0	2	1	24
5	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	S	1	1	1	1	1	1	0	1	1	24
6	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	S	1	1	0	1	1	0	0	0	1	1	24
7	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	S	1	1	1	1	1	0	1	0	0	1	0	24
8	0	0	0	0	0	0	0	0	1	1	1	1	1	0	S	0	0	1	1	0	0	0	0	0	0	1	0	24
9	0	0	0	0	0	1	1	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	0	0	1	0	24
10	0	0	1	1	1	0	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
11	1	1	1	0	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
12	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	0	0	0	1	1	0	0	1	0	1	1	24
13	0	0	0	0	0	0	1	1	1	S	1	1	1	0	1	0	0	0	1	1	0	0	0	0	0	1	0	24
14	0	0	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
15	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	24
16	2	2	1	1	1	1	S	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
17	1	1	1	1	1	S	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1	24
18	1	1	1	1	S	1	2	1	1	1	1	1	C	C	C	C	0	1	0	1	1	1	1	0	0	2	1	24
19	1	1	1	S	0	0	1	1	S1	1	1	0	0	1	0	0	0	1	1	1	1	1	0	1	0	1	1	23
20	1	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	1	24
21	0	S	0	0	0	0	0	0	1	1	1	0	1	1	1	0	1	0	1	1	0	1	0	0	0	1	0	24
22	S	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	1	1	24
23	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	1	S	1	0	2	1	24
24	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	S	1	1	1	2	1	24
25	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1	24
26	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	1	1	24
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	0	1	1	24
28	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0	1	1	24
29	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	1	S	0	1	1	1	1	1	1	0	2	1	24
30	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	S	1	1	1	1	1	1	1	1	1	2	1	24
31	1	1	0	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0	1	1	24
HOURLY MAX	2	2	1	1	1	1	2	2	2	1	2	2	2	2	2	2	2	1	2	2	2	1	1	1				
HOURLY AVG	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				

STATUS FLAG CODES

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

MONTHLY SUMMARY

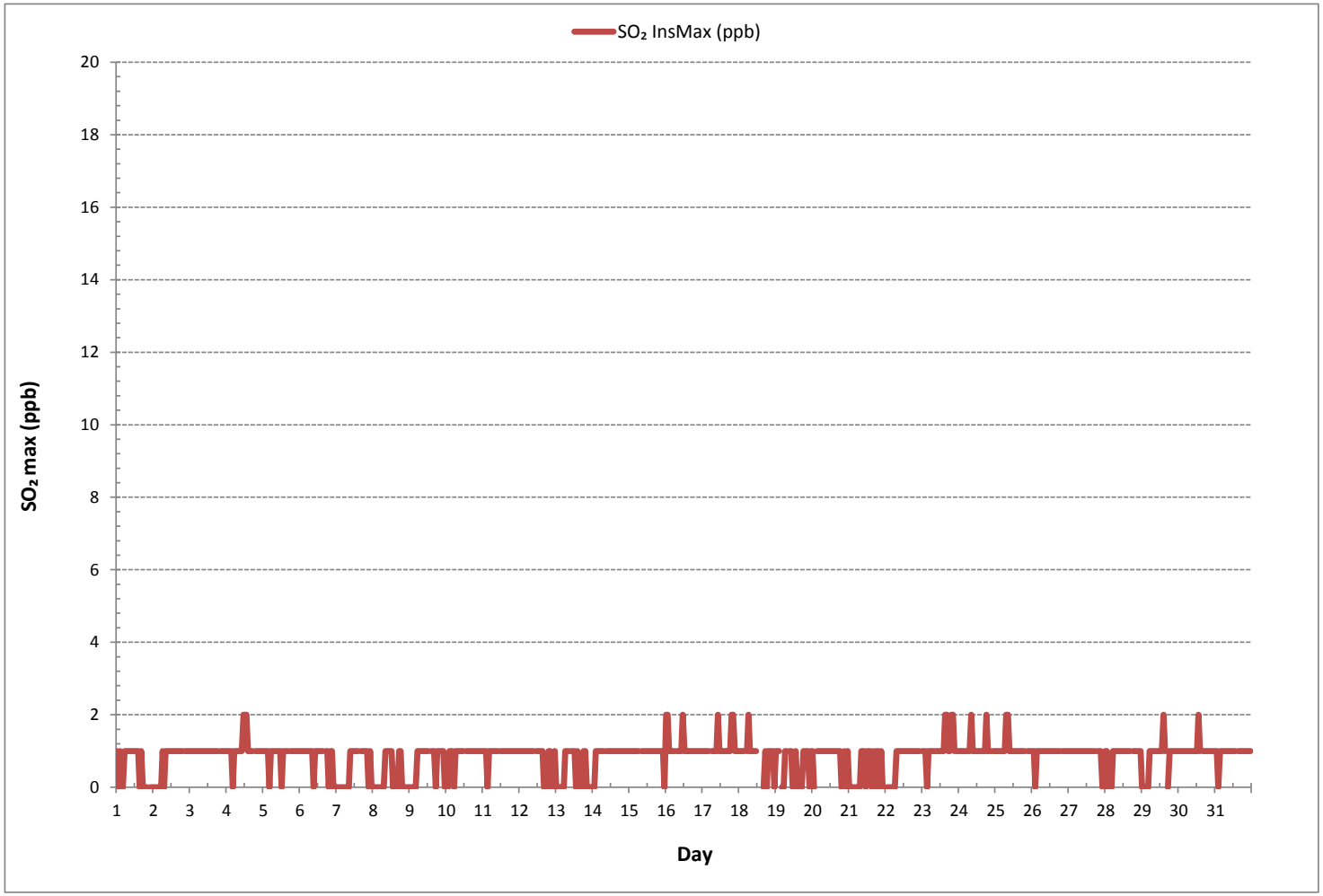
NUMBER OF NON-ZERO READINGS: 574

MAXIMUM INSTANTANEOUS VALUE: 2 ppb @ HOUR 11 ON DAY 4

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0

OPERATIONAL TIME: 743 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)



Maxxam
A Bureau Veritas Group Company

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	0.45	0.40	0.44	0.43	0.45	0.42	0.47	0.50	0.50	0.48	0.44	0.44	0.44	0.43	0.47	0.44	0.41	0.44	0.45	0.44	0.46	S	0.47	0.43	0.40	0.50	0.45	24
2	0.47	0.46	0.51	0.46	0.47	0.49	0.51	0.52	0.48	0.45	0.45	0.47	0.43	0.42	0.43	0.45	0.44	0.45	0.47	0.45	S	0.48	0.46	0.49	0.42	0.52	0.46	24
3	0.48	0.46	0.47	0.47	0.50	0.47	0.49	0.47	0.48	0.45	0.47	0.48	0.45	0.47	0.45	0.47	0.43	0.44	0.47	S	0.49	0.45	0.48	0.44	0.43	0.50	0.47	24
4	0.45	0.43	0.44	0.44	0.44	0.45	0.43	0.45	0.47	0.50	0.48	0.50	0.46	0.49	0.48	0.43	0.46	0.42	S	0.52	0.52	0.47	0.48	0.47	0.42	0.52	0.46	24
5	0.47	0.46	0.45	0.45	0.46	0.49	0.49	0.47	0.48	0.48	0.50	0.47	0.51	0.47	0.44	0.48	0.49	S	0.49	0.54	0.48	0.55	0.48	0.45	0.44	0.55	0.48	24
6	0.47	0.46	0.47	0.45	0.48	0.47	0.52	0.53	0.52	0.49	0.51	0.45	0.51	0.46	0.48	0.45	S	0.49	0.48	0.50	0.54	0.44	0.45	0.46	0.44	0.54	0.48	24
7	0.47	0.47	0.46	0.47	0.48	0.44	0.46	0.48	0.49	0.48	0.50	0.48	0.45	0.49	0.48	S	0.52	0.50	0.49	0.52	0.51	0.47	0.48	0.47	0.44	0.52	0.48	24
8	0.49	0.46	0.42	0.44	0.43	0.44	0.42	0.46	0.44	0.42	0.42	0.42	0.45	0.44	S	0.46	0.43	0.46	0.41	0.43	0.45	0.44	0.44	0.46	0.41	0.49	0.44	24
9	0.44	0.45	0.45	0.45	0.47	0.46	0.48	0.46	0.47	0.49	0.49	0.46	0.50	S	0.45	0.45	0.43	0.50	0.48	0.50	0.46	0.45	0.47	0.49	0.43	0.50	0.47	24
10	0.45	0.45	0.49	0.48	0.48	0.45	0.46	0.48	0.49	0.49	0.51	0.51	S	0.56	0.51	0.50	0.52	0.50	0.48	0.52	0.49	0.53	0.52	0.54	0.45	0.56	0.50	24
11	0.60	0.59	0.57	0.52	0.53	0.51	0.44	0.50	0.49	0.49	0.52	S	0.50	0.48	0.48	0.52	0.50	0.54	0.53	0.51	0.52	0.54	0.51	0.51	0.44	0.60	0.52	24
12	0.60	0.54	0.62	1.28	**1.78**	1.33	0.55	0.52	0.47	0.51	S	0.56	0.49	0.48	0.49	0.50	0.51	0.49	0.51	0.50	0.54	0.68	0.67	0.72	0.47	**1.78**	0.67	24
13	0.79	0.88	0.89	0.87	1.04	1.05	1.19	1.04	0.94	S	0.49	0.48	0.45	0.50	0.48	0.51	0.52	0.69	0.70	0.84	0.70	0.69	1.04	0.95	0.45	1.19	0.77	24
14	0.65	0.64	0.73	0.89	0.87	0.88	0.70	0.77	S	0.62	0.61	0.63	0.63	0.61	0.67	0.67	0.70	0.55	0.60	0.50	0.54	0.55	0.67	0.63	0.50	0.89	0.67	24
15	0.58	0.58	0.60	0.62	0.68	0.67	0.68	S	0.73	0.66	0.65	0.56	0.61	0.61	0.58	0.60	0.54	0.77	0.82	0.56	0.62	0.63	0.62	0.57	0.54	0.82	0.63	24
16	1.72	1.66	1.28	1.34	1.28	0.91	S	1.12	0.61	0.67	0.61	0.59	0.51	0.49	0.51	0.51	0.52	0.57	0.54	0.55	0.64	0.78	0.69	0.59	0.49	1.72	0.81	24
17	0.53	0.78	0.56	0.52	0.53	S	0.59	0.60	0.76	0.59	0.57	0.57	0.54	0.50	0.56	0.50	0.51	0.55	0.52	0.56	0.49	0.52	0.56	0.50	0.49	0.78	0.56	24
18	0.50	0.51	0.51	0.52	S	0.50	0.56	0.52	Y	Y	Y	Y	Y	Y	S1	0.88	0.54	0.50	0.55	0.51	0.49	0.52	0.51	0.46	0.46	0.88	0.54	17
19	0.50	0.71	0.69	S	0.55	0.55	0.51	0.54	C	C	C	C	0.45	0.39	0.39	0.34	0.38	0.36	0.33	0.34	0.34	0.31	0.35	0.35	0.31	0.71	0.44	24
20	0.37	0.36	S	0.36	0.40	0.36	0.36	0.36	0.38	0.35	0.34	0.33	0.34	0.34	0.32	0.33	0.31	0.31	0.32	0.32	0.35	0.34	0.32	0.35	0.31	0.40	0.34	24
21	0.37	S	0.36	0.36	0.32	0.34	0.33	0.34	0.35	0.32	0.34	0.34	0.34	0.33	0.32	0.31	0.32	0.38	0.61	0.77	0.52	0.46	0.43	0.41	0.31	0.77	0.39	24
22	S	0.40	0.38	0.38	0.35	0.36	0.37	0.39	0.36	0.34	0.36	0.41	0.38	0.38	0.37	0.37	0.41	0.45	0.43	0.40	0.40	0.39	0.45	S	0.34	0.45	0.39	24
23	0.45	0.45	0.45	0.35	0.38	0.41	0.45	0.42	0.41	0.39	0.44	0.41	0.41	0.41	0.36	0.37	0.48	0.42	0.52	0.66	1.12	0.43	S	0.39	0.35	1.12	0.46	24
24	0.40	0.41	0.54	0.45	0.54	0.59	0.45	0.66	0.65	0.54	0.49	0.55	0.50	0.45	0.46	0.47	0.58	0.79	0.72	0.48	0.47	S	0.41	0.38	0.38	0.79	0.52	24
25	0.52	0.52	0.43	0.59	0.51	0.55	0.57	0.57	0.60	0.49	0.57	0.47	0.44	0.39	0.40	0.37	0.52	0.47	0.38	0.39	S	0.42	0.44	0.39	0.37	0.60	0.48	24
26	0.37	0.33	0.34	0.35	0.35	0.47	0.44	0.47	0.50	0.63	0.37	0.39	0.36	0.36	0.42	0.40	0.50	0.44	0.49	S	0.52	0.52	0.40	0.37	0.33	0.63	0.43	24
27	0.42	0.39	0.38	0.33	0.46	0.34	0.32	0.31	0.30	0.34	0.36	0.39	0.32	0.31	0.35	0.32	0.33	0.33	S	0.34	0.35	0.35	0.32	0.33	0.30	0.46	0.35	24
28	0.66	0.58	0.48	0.52	0.40	0.34	0.35	0.32	0.31	0.32	0.30	0.29	0.32	0.29	0.36	0.31	0.29	S	0.46	0.38	0.35	0.35	0.36	0.35	0.29	0.66	0.38	24
29	0.42	0.55	0.62	0.61	0.50	0.52	0.48	0.55	0.57	0.56	0.48	0.44	0.48	0.50	0.46	0.45	S	0.64	0.91	0.96	1.01	0.80	0.72	0.84	0.42	1.01	0.61	24
30	0.71	0.51	0.41	0.40	0.38	0.44	0.49	0.51	0.49	0.45	0.55	0.53	0.42	0.38	0.37	S	0.58	0.71	0.61	0.61	0.43	0.51	0.44	0.53	0.37	0.71	0.50	24
31	0.61	0.65	0.71	0.61	0.56	0.72	0.56	0.61	0.44	0.52	0.46	0.50	0.39	0.42	S	0.40	0.40	0.44	0.45	0.62	0.56	0.47	0.34	0.38	0.34	0.72	0.51	24
HOURLY MAX	1.72	1.66	1.28	1.34	1.78	1.33	1.19	1.12	0.94	0.67	0.65	0.63	0.63	0.61	0.67	0.88	0.70	0.79	0.91	0.96	1.12	0.80	1.04	0.95				
HOURLY AVG	0.55	0.55	0.54	0.55	0.57	0.55	0.50	0.53	0.51	0.48	0.47	0.47	0.45	0.44	0.45	0.46	0.47	0.50	0.52	0.52	0.53	0.50	0.50	0.49				

STATUS FLAG CODES

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

MONTHLY SUMMARY

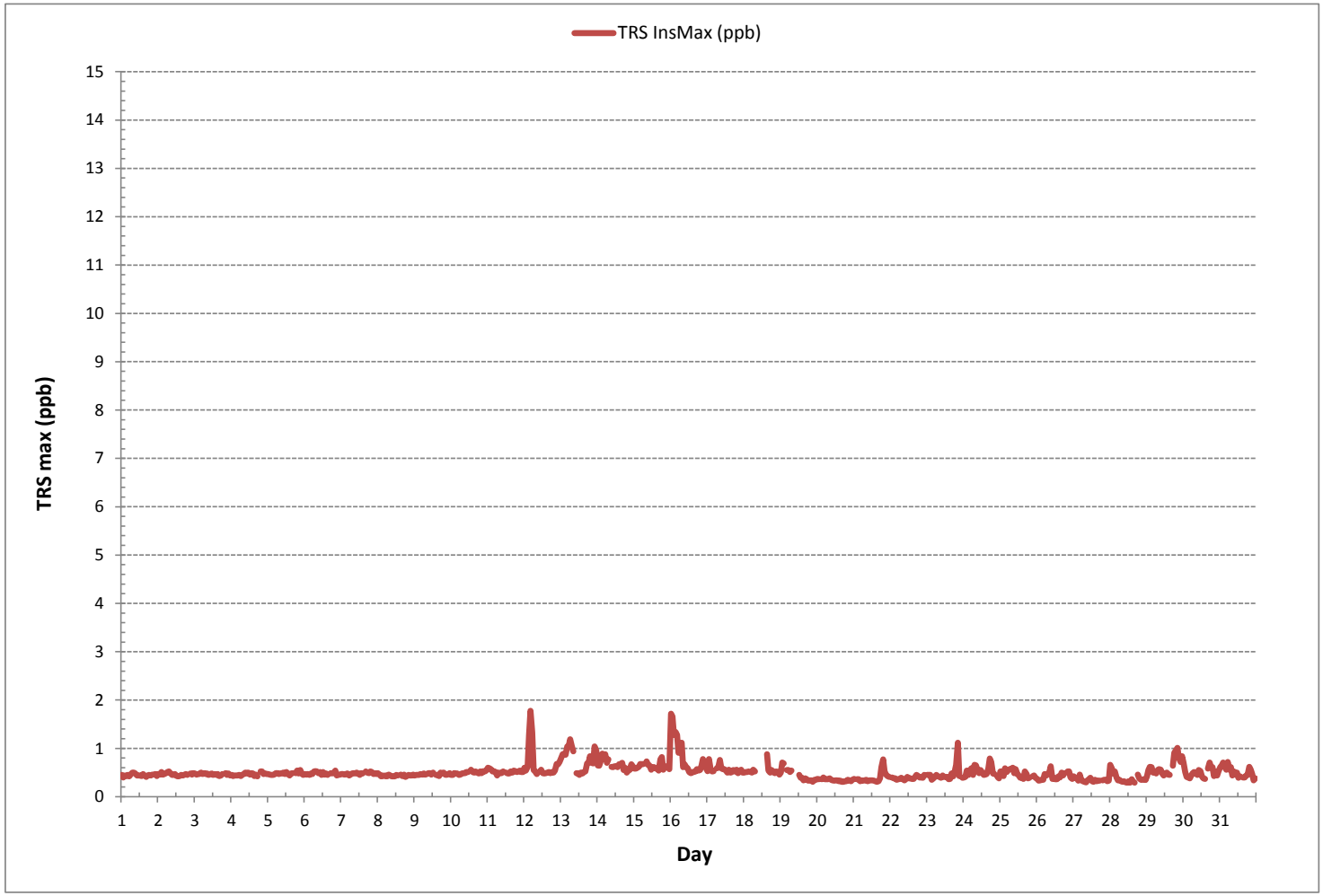
NUMBER OF NON-ZERO READINGS: 701

MAXIMUM INSTANTANEOUS VALUE: 1.78 ppb @ HOUR 4 ON DAY 12

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.17

OPERATIONAL TIME: 737 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



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	2.04	2.15	2.21	2.15	2.67	2.35	2.47	2.10	2.05	2.04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.04	2.67	2.22	10
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	2.01	2.02	2.02	2.01	2.02	2.02	4
3	2.02	2.03	2.03	2.03	2.07	2.27	2.07	2.07	2.04	2.03	2.03	2.02	2.02	2.01	2.00	2.00	2.00	2.02	2.01	S	2.12	2.12	2.09	2.03	2.00	2.27	2.05	24
4	2.03	2.06	2.04	2.12	2.11	2.36	2.11	2.08	2.16	2.14	2.08	2.09	2.03	2.01	2.00	2.01	2.01	2.01	S	2.03	2.19	2.11	2.41	2.02	2.00	2.41	2.10	24
5	2.08	2.02	2.01	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.01	2.01	S	2.00	2.01	2.05	2.04	2.02	2.11	2.00	2.11	2.02	24
6	2.08	2.11	2.09	2.13	2.22	2.24	2.23	2.05	2.04	2.04	2.05	2.04	2.05	2.04	2.04	2.04	S	2.04	2.03	2.03	2.04	2.04	2.04	2.03	2.03	2.24	2.07	24
7	2.03	2.03	2.02	2.02	2.02	2.02	2.07	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	S	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.07	2.03	24
8	2.02	2.00	2.00	2.00	1.99	2.00	1.99	1.99	2.00	2.02	2.02	2.01	2.01	2.00	S	2.01	2.01	2.02	2.03	2.03	2.04	2.04	2.03	2.01	1.99	2.04	2.01	24
9	2.02	2.02	2.04	2.04	2.08	2.06	2.03	2.03	2.02	2.26	2.67	2.05	2.01	S	2.02	2.02	2.03	2.06	2.09	2.08	2.01	2.06	2.06	2.08	2.01	2.67	2.08	24
10	2.08	2.04	2.09	2.09	2.03	2.09	2.06	2.06	2.07	2.11	2.20	2.12	S	2.34	2.08	2.07	2.07	2.06	2.06	2.05	2.08	2.08	2.08	2.05	2.03	2.34	2.09	24
11	2.14	2.07	2.06	2.04	2.26	2.23	2.14	2.45	2.28	2.92	2.36	S	2.17	2.11	2.04	2.03	2.03	2.03	2.02	2.01	2.00	2.00	2.00	1.99	1.99	2.92	2.15	24
12	2.05	1.99	2.01	2.29	2.02	2.01	2.01	2.01	2.00	2.01	S	2.03	2.03	2.01	2.00	2.00	2.00	2.00	2.01	2.00	2.03	2.01	2.04	2.00	1.99	2.29	2.02	24
13	2.01	2.02	2.01	2.02	2.02	2.02	2.03	2.03	2.03	S	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.01	2.17	2.02	2.02	2.35	2.30	1.99	2.35	2.04	24
14	2.01	2.00	2.20	2.46	2.54	2.38	2.32	2.27	S	2.06	2.00	1.99	1.99	1.99	1.99	2.00	2.04	1.98	1.97	1.97	1.98	2.04	1.98	1.97	1.97	2.54	2.09	24
15	1.97	1.96	1.96	1.97	1.97	1.96	1.98	S	1.97	1.97	1.97	1.98	1.98	1.99	1.98	1.98	1.99	2.00	1.98	1.98	2.00	1.99	1.98	2.14	1.96	2.14	1.98	24
16	2.64	4.93	4.06	3.87	2.90	2.27	S	2.52	2.00	2.01	2.01	2.00	1.99	1.98	1.98	1.99	2.00	2.00	1.99	1.98	2.88	2.96	2.20	2.31	1.98	4.93	2.50	24
17	1.97	1.97	1.97	1.99	1.97	S	2.00	2.02	2.44	2.01	2.00	1.99	2.00	1.99	1.99	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	2.44	2.00	24
18	1.97	1.97	1.97	1.98	S	1.99	1.99	1.99	C	C	C	C	C	1.95	1.95	1.96	1.97	1.97	1.99	2.01	1.99	1.97	1.97	1.97	1.95	2.01	1.98	24
19	1.99	2.73	3.24	S	2.46	2.06	2.03	2.08	2.76	2.25	2.25	2.25	2.06	2.03	2.04	2.09	2.01	2.04	2.03	2.06	1.99	2.01	2.12	2.15	1.99	3.24	2.21	24
20	2.03	2.23	S	2.00	2.00	2.00	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.99	1.97	1.97	1.96	1.95	2.23	1.98	24
21	1.97	S	1.97	1.97	1.98	1.98	1.99	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.99	1.99	2.35	3.42	3.89	2.47	2.37	2.38	2.27	1.97	3.89	2.21	24
22	S	2.37	2.44	2.05	2.13	2.03	2.27	2.25	2.26	2.08	2.17	2.10	2.07	2.12	2.07	2.16	2.46	2.48	2.45	2.23	2.35	2.50	2.44	S	2.03	2.50	2.25	24
23	2.46	2.56	2.49	2.08	2.08	2.35	2.35	2.43	2.34	2.15	2.18	2.08	2.11	2.12	2.16	2.16	2.24	2.12	2.87	3.30	2.77	2.34	S	2.17	2.08	3.30	2.34	24
24	2.62	2.31	2.62	2.35	3.69	2.44	2.52	2.63	2.87	2.25	2.29	2.43	2.26	2.22	2.14	2.20	2.32	2.64	2.63	2.30	2.19	S	2.20	2.07	2.07	3.69	2.44	24
25	2.58	2.40	2.49	3.59	2.33	2.60	2.53	2.33	2.41	2.45	2.27	2.26	2.15	2.19	2.09	2.12	2.33	2.28	1.98	1.96	S	1.98	1.97	1.97	1.96	3.59	2.32	24
26	1.97	1.96	1.96	1.97	1.97	2.52	1.98	2.28	2.43	2.27	2.07	2.07	2.05	2.08	2.10	2.22	2.19	2.28	2.36	S	2.43	2.40	2.02	2.01	1.96	2.52	2.15	24
27	2.00	1.97	1.97	1.96	1.96	1.97	2.02	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.97	S	1.97	1.98	1.98	1.99	2.03	1.96	2.03	1.97	24
28	2.73	2.28	2.32	2.35	2.28	2.25	2.13	2.12	2.04	2.03	1.97	1.97	1.96	1.96	2.01	2.01	2.00	S	2.24	1.98	1.98	1.97	1.98	1.98	1.96	2.73	2.11	24
29	1.99	1.99	2.01	2.00	2.02	2.06	2.08	2.18	2.29	2.26	2.18	2.14	2.12	2.04	2.02	2.02	S	2.19	2.88	2.66	2.87	2.79	2.80	2.79	1.99	2.88	2.28	24
30	2.60	2.15	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.99	2.00	1.98	1.98	1.97	S	1.99	2.25	2.07	1.99	1.97	1.97	1.97	2.37	1.97	2.60	2.05	24
31	2.24	2.03	2.17	2.26	2.06	2.62	2.41	2.87	2.08	2.00	1.99	1.99	1.99	1.98	S	1.98	1.98	1.97	1.97	2.01	2.02	2.01	2.00	2.01	1.97	2.87	2.12	24
HOURLY MAX	2.73	4.93	4.06	3.87	3.69	2.62	2.53	2.87	2.87	2.92	2.67	2.43	2.26	2.34	2.16	2.22	2.46	2.64	3.42	3.89	2.88	2.96	2.80	2.79				
HOURLY AVG	2.15	2.22	2.22	2.20	2.20	2.18	2.13	2.16	2.16	2.12	2.10	2.06	2.04	2.04	2.02	2.04	2.06	2.10	2.19	2.17	2.16	2.13	2.11	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

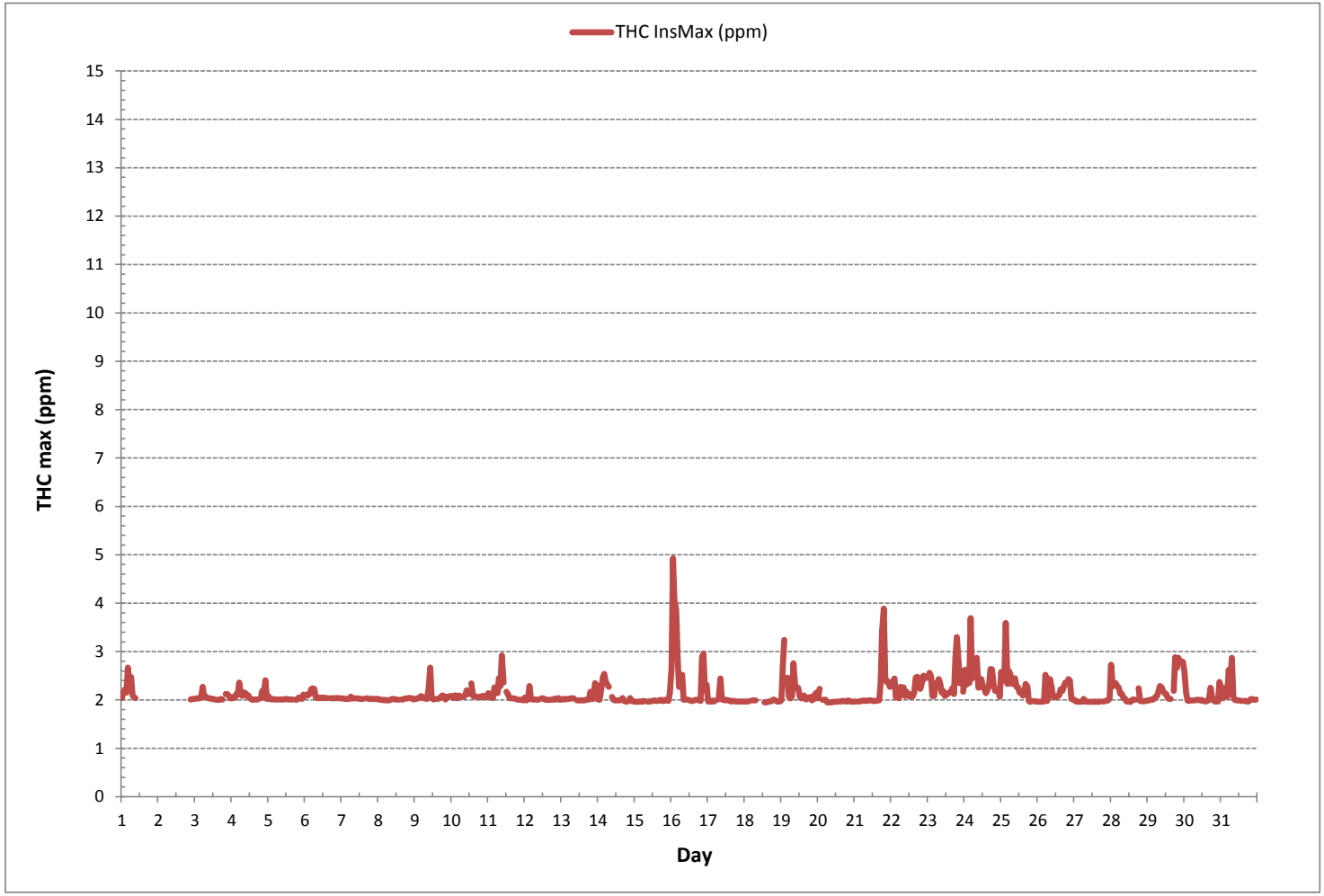
NUMBER OF NON-ZERO READINGS: 674

MAXIMUM INSTANTANEOUS VALUE: 4.93 ppm @ HOUR 1 ON DAY 16

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.27

OPERATIONAL TIME: 710 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



METHANE MAX Instantaneous Maximum (CH_4 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	2.04	2.15	2.21	2.15	2.67	2.35	2.47	2.10	2.05	2.04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.04	2.67	2.22	10
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	2.01	2.02	2.02	2.01	2.02	2.02	4
3	2.02	2.03	2.03	2.03	2.07	2.27	2.07	2.07	2.04	2.03	2.03	2.02	2.02	2.01	2.00	2.00	2.00	2.02	2.01	S	2.12	2.12	2.09	2.03	2.00	2.27	2.05	24
4	2.03	2.06	2.04	2.12	2.11	2.36	2.11	2.08	2.16	2.14	2.08	2.09	2.03	2.01	2.00	2.01	2.01	2.01	S	2.03	2.19	2.11	2.41	2.02	2.00	2.41	2.10	24
5	2.08	2.02	2.01	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.02	2.01	2.01	2.01	2.01	S	2.00	2.01	2.05	2.04	2.02	2.11	2.00	2.11	2.02	24
6	2.08	2.11	2.09	2.13	2.22	2.24	2.23	2.05	2.04	2.04	2.05	2.04	2.05	2.04	2.04	2.04	S	2.04	2.03	2.03	2.04	2.04	2.04	2.03	2.03	2.24	2.07	24
7	2.03	2.03	2.02	2.02	2.02	2.02	2.07	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	S	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.07	2.03	24
8	2.02	2.00	2.00	2.00	1.99	2.00	1.99	1.99	2.00	2.02	2.02	2.01	2.01	2.00	S	2.01	2.01	2.02	2.03	2.03	2.04	2.04	2.03	2.01	1.99	2.04	2.01	24
9	2.02	2.02	2.04	2.04	2.08	2.06	2.03	2.03	2.02	2.26	2.67	2.05	2.01	S	2.02	2.02	2.03	2.06	2.09	2.08	2.01	2.06	2.06	2.08	2.01	2.67	2.08	24
10	2.08	2.04	2.09	2.09	2.03	2.09	2.06	2.06	2.07	2.11	2.20	2.12	S	2.34	2.08	2.07	2.07	2.06	2.06	2.05	2.08	2.08	2.08	2.05	2.03	2.34	2.09	24
11	2.14	2.07	2.06	2.04	2.26	2.23	2.14	2.45	2.28	2.92	2.36	S	2.17	2.11	2.04	2.03	2.03	2.03	2.02	2.01	2.00	2.00	2.00	1.99	1.99	2.92	2.15	24
12	2.05	1.99	2.01	2.29	2.02	2.01	2.01	2.01	2.00	2.01	S	2.03	2.03	2.01	2.00	2.00	2.00	2.00	2.01	2.00	2.03	2.01	2.04	2.00	1.99	2.29	2.02	24
13	2.01	2.02	2.01	2.02	2.02	2.02	2.03	2.03	2.03	S	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.01	2.17	2.02	2.02	2.35	2.30	1.99	2.35	2.04	24
14	2.01	2.00	2.20	2.46	2.54	2.38	2.32	2.27	S	2.06	2.00	1.99	1.99	1.99	1.99	2.00	1.99	1.98	1.97	1.97	1.98	2.04	1.98	1.97	1.97	2.54	2.09	24
15	1.97	1.96	1.96	1.97	1.97	1.96	1.98	S	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.99	2.00	1.98	1.98	2.00	1.99	1.98	2.14	1.96	2.14	1.98	24
16	2.64	4.93	4.06	3.87	2.90	2.27	S	2.52	2.00	2.01	2.01	2.00	1.99	1.98	1.98	1.99	2.00	2.00	1.99	1.98	2.88	2.96	2.20	2.31	1.98	4.93	2.50	24
17	1.97	1.97	1.97	1.99	1.97	S	2.00	2.02	2.44	2.01	2.00	1.99	2.00	1.99	1.99	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	2.44	2.00	24
18	1.97	1.97	1.97	1.98	S	1.99	1.99	1.99	C	C	C	C	C	1.95	1.95	1.96	1.97	1.97	1.99	2.01	1.99	1.97	1.97	1.97	1.95	2.01	1.98	24
19	1.99	2.73	3.24	S	2.46	2.06	2.03	2.08	2.76	2.25	2.15	2.08	2.06	2.03	2.04	2.09	2.01	2.04	2.03	2.06	1.99	2.01	2.12	2.15	1.99	3.24	2.19	24
20	2.03	2.23	S	2.00	2.00	2.00	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.99	1.97	1.97	1.96	1.95	2.23	1.98	24
21	1.97	S	1.97	1.97	1.98	1.98	1.99	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.99	1.99	2.35	3.42	3.89	2.47	2.37	2.38	2.27	1.97	3.89	2.21	24
22	S	2.37	2.44	2.05	2.13	2.03	2.27	2.25	2.26	2.08	2.17	2.10	2.07	2.12	2.07	2.16	2.46	2.48	2.45	2.23	2.35	2.50	2.44	S	2.03	2.50	2.25	24
23	2.46	2.56	2.49	2.08	2.08	2.35	2.35	2.43	2.34	2.15	2.18	2.08	2.11	2.12	2.16	2.16	2.24	2.12	2.87	3.30	2.77	2.34	S	2.17	2.08	3.30	2.34	24
24	2.62	2.31	2.62	2.35	3.69	2.44	2.52	2.63	2.46	2.23	2.16	2.37	2.26	2.20	2.14	2.13	2.32	2.64	2.63	2.30	2.13	S	2.12	2.07	2.07	3.69	2.40	24
25	2.58	2.40	2.49	3.59	2.33	2.60	2.53	2.33	2.41	2.45	2.27	2.26	2.15	2.19	2.09	2.12	2.33	2.28	1.98	1.96	S	1.98	1.97	1.97	1.96	3.59	2.32	24
26	1.97	1.96	1.96	1.97	1.97	2.52	1.98	2.28	2.43	2.27	2.07	2.07	2.05	2.08	2.10	2.22	2.19	2.28	2.36	S	2.43	2.40	2.02	2.01	1.96	2.52	2.15	24
27	2.00	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.97	S	1.97	1.98	1.98	1.99	2.03	1.96	2.03	1.97	24
28	2.73	2.28	2.32	2.35	2.28	2.25	2.13	2.12	2.04	2.03	1.97	1.97	1.96	1.96	2.01	2.01	2.00	S	2.24	1.98	1.98	1.97	1.98	1.98	1.96	2.73	2.11	24
29	1.99	1.99	2.01	2.00	2.02	2.06	2.08	2.18	2.29	2.25	2.18	2.14	2.12	2.04	2.02	2.02	S	2.19	2.88	2.66	2.87	2.79	2.80	2.79	1.99	2.88	2.28	24
30	2.60	2.15	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.99	2.00	1.98	1.98	1.97	S	1.99	2.25	2.07	1.99	1.97	1.97	1.97	2.37	1.97	2.60	2.05	24
31	2.24	2.03	2.17	2.26	2.06	2.62	2.41	2.87	2.08	2.00	1.99	1.99	1.99	1.98	S	1.98	1.98	1.97	1.97	2.01	2.02	2.01	2.00	2.01	1.97	2.87	2.12	24
HOURLY MAX	2.73	4.93	4.06	3.87	3.69	2.62	2.53	2.87	2.76	2.92	2.67	2.37	2.26	2.34	2.16	2.22	2.46	2.64	3.42	3.89	2.88	2.96	2.80	2.79				
HOURLY AVG	2.15	2.22	2.22	2.20	2.20	2.18	2.13	2.16	2.15	2.12	2.09	2.05	2.04	2.04	2.02	2.03	2.06	2.10	2.19	2.17	2.16	2.13	2.10	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

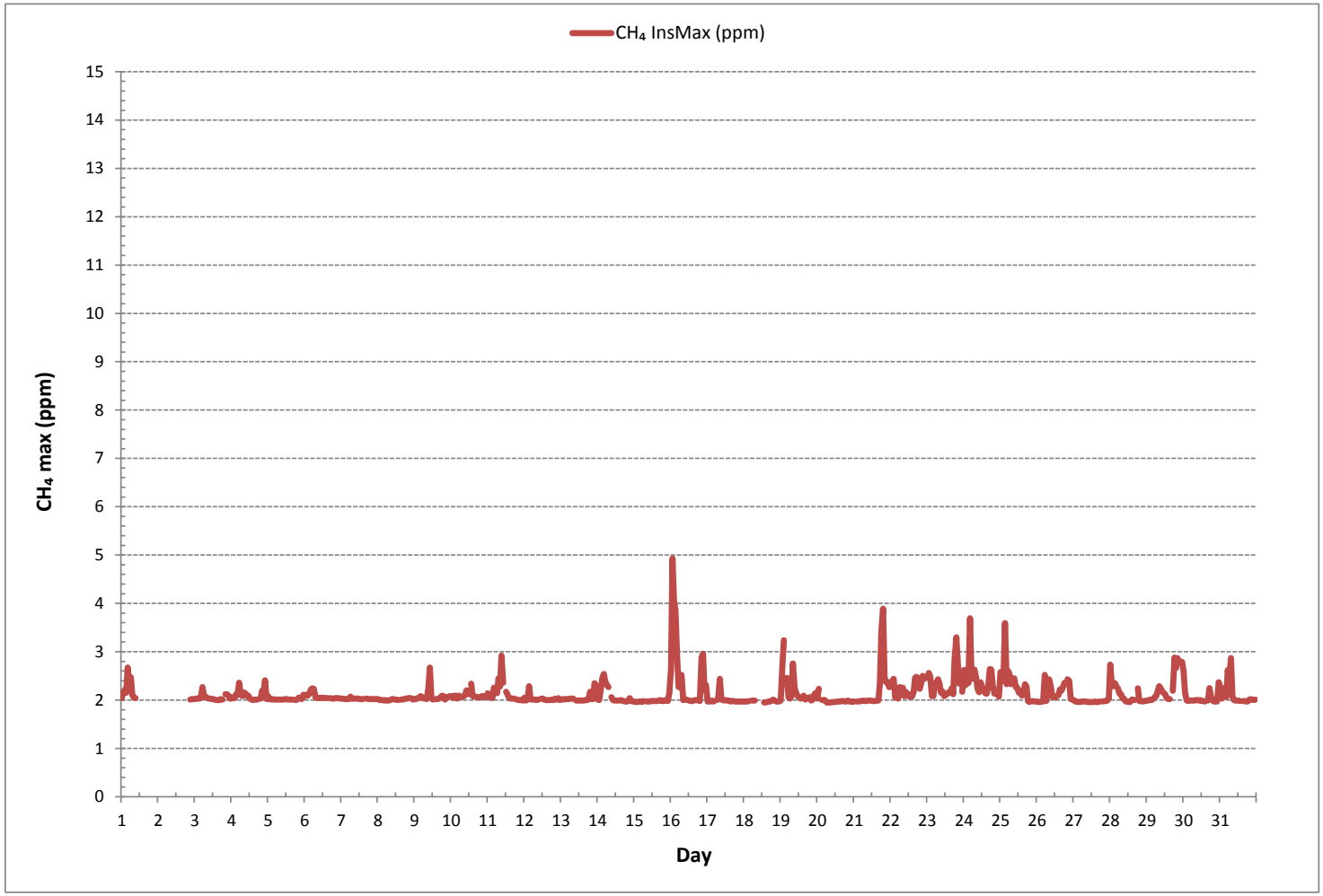
NUMBER OF NON-ZERO READINGS: 674

MAXIMUM INSTANTANEOUS VALUE: 4.93 ppm @ HOUR 1 ON DAY 16

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.27

OPERATIONAL TIME: 710 hrs

METHANE MAX Instantaneous Maximum (CH_4 ppm)



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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	10
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	S1	S	0.00	0.00	0.00	0.00	0.00	0.00	4
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	0.00	0.00	0.00	S	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	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
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	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
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	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
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
11	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
12	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
13	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
14	0.01	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	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24
15	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	0.01	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
16	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.01	24
18	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	C	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	0.00	0.00	0.00	24
19	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.19	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	0.19	0.02	24
20	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
21	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
22	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
23	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.02	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.08	0.01	24
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.41**	0.11	0.14	0.07	0.09	0.08	0.00	0.08	0.07	0.04	0.10	0.00	0.07	S	0.09	0.00	0.00	**0.41**	0.06	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	0.00	0.00	0.00	0.00	S	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	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
27	0.00	0.00	0.00	0.00	0.00	0.00	0.06	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	0.06	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	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
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.10	0.00	0.02	0.00	0.00	0.00	0.10	0.01	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.08	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	0.08	0.00	24
HOURLY MAX	0.06	0.00	0.08	0.00	0.00	0.00	0.06	0.00	0.41	0.11	0.17	0.19	0.09	0.08	0.08	0.08	0.07	0.04	0.10	0.10	0.07	0.02	0.09	0.00				
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	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

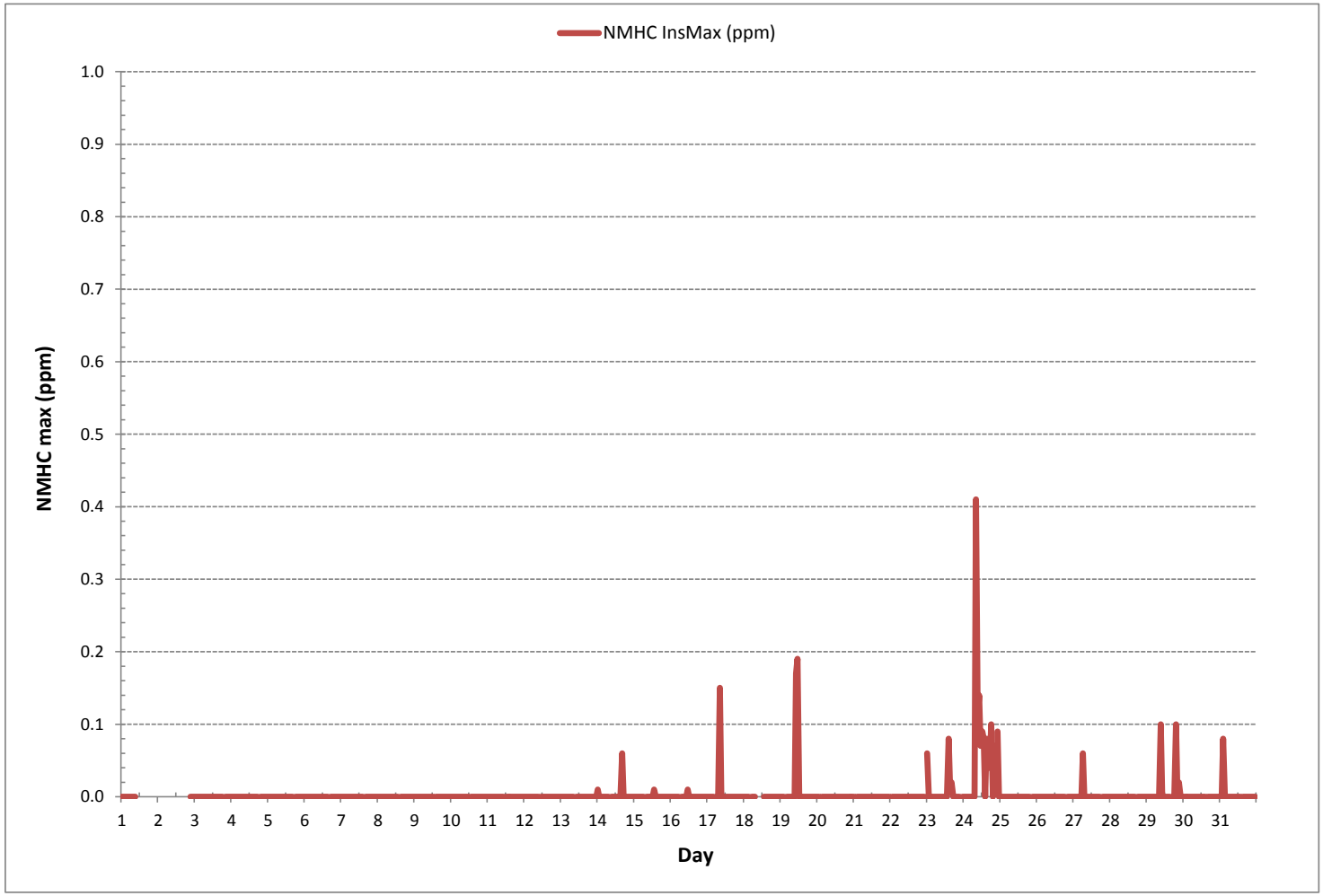
NUMBER OF NON-ZERO READINGS: 28

MAXIMUM INSTANTANEOUS VALUE: 0.41 ppm @ HOUR 8 ON DAY 24

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.02

OPERATIONAL TIME: 710 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



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	3.4	3.8	2.0	2.8	1.8	1.8	5.6	7.8	4.8	14.6	18.6	20.8	24.4	27.6	28.8	26.2	29.6	31.8	29.2	30.6	27.6	23.8	27.0	21.0	1.8	31.8	17.3	24
2	19.2	14.2	12.4	8.4	4.6	6.2	11.4	12.4	12.6	20.6	20.0	24.6	27.4	27.8	26.8	25.8	29.0	23.6	19.6	20.2	19.2	16.8	25.4	26.4	4.6	29.0	18.9	24
3	21.6	23.4	20.4	16.8	16.6	11.8	5.4	7.8	7.2	8.8	8.8	12.4	12.4	11.0	13.8	15.2	12.2	8.2	8.0	13.2	16.0	16.6	16.8	17.2	5.4	23.4	13.4	24
4	17.8	17.0	17.2	15.4	15.8	14.8	16.6	15.6	17.6	17.0	13.0	13.8	15.2	18.2	18.4	15.8	19.6	13.8	10.2	17.2	16.8	18.6	19.0	20.6	10.2	20.6	16.5	24
5	20.8	18.2	15.4	16.0	14.2	15.4	18.6	11.6	14.2	14.0	11.2	13.6	17.0	13.4	13.0	12.0	15.0	7.4	6.6	12.8	19.6	16.0	18.2	18.6	6.6	20.8	14.7	24
6	15.0	18.6	19.2	16.2	14.0	15.0	10.0	7.0	14.8	15.2	15.4	14.4	17.8	19.4	18.0	18.0	18.2	21.6	20.2	13.4	17.0	19.4	17.2	16.0	7.0	21.6	16.3	24
7	20.8	20.4	20.8	19.4	20.8	20.2	22.2	21.8	23.0	23.0	22.4	22.0	26.0	28.2	25.4	26.8	23.4	24.2	22.4	19.0	21.4	23.8	22.8	22.2	19.0	28.2	22.6	24
8	19.8	23.0	22.6	19.4	23.2	19.0	23.0	21.8	21.0	30.0	30.8	25.4	26.2	23.2	25.4	24.2	33.0	26.8	34.0	21.4	27.6	31.2	31.0	30.0	19.0	34.0	25.5	24
9	26.4	26.4	30.4	21.0	20.8	17.2	18.6	24.2	21.2	21.0	21.0	23.6	23.8	23.0	25.0	22.8	20.8	15.4	16.4	19.2	18.0	19.4	20.8	22.0	15.4	30.4	21.6	24
10	17.6	17.6	15.8	14.4	15.0	20.0	20.6	18.4	20.0	17.0	15.8	15.2	10.6	9.2	11.2	13.6	11.2	10.4	10.0	13.0	8.6	4.6	6.8	6.2	4.6	20.6	13.5	24
11	7.4	8.6	6.2	9.6	10.2	12.2	14.6	14.8	18.6	14.4	18.4	18.4	19.8	18.6	17.0	15.0	16.2	16.8	16.0	13.2	13.2	12.4	13.8	15.8	6.2	19.8	14.2	24
12	9.6	8.6	6.4	4.4	10.2	19.2	22.2	34.6	31.0	33.6	37.0	36.2	36.0	28.6	27.8	25.8	18.2	15.4	11.6	9.6	5.8	7.0	5.8	6.0	4.4	37.0	18.8	24
13	4.0	6.2	6.2	5.6	7.8	9.0	9.4	7.6	8.0	12.0	16.0	12.4	13.0	13.4	16.0	15.2	15.4	11.8	9.2	11.4	13.4	14.0	11.8	13.4	4.0	16.0	10.9	24
14	15.6	14.8	14.2	10.0	18.6	13.2	11.4	11.8	16.0	22.4	23.6	24.4	33.4	32.0	20.0	16.8	28.4	33.8	36.4	32.4	36.2	33.2	27.2	24.6	10.0	36.4	22.9	24
15	24.0	19.6	22.8	19.2	21.2	17.4	17.0	13.4	14.6	16.4	15.2	17.4	19.6	16.0	12.6	9.2	5.0	11.8	13.4	8.8	7.2	7.8	6.2	6.2	5.0	24.0	14.3	24
16	6.2	7.4	4.8	5.0	6.0	7.6	8.2	14.8	14.8	14.0	16.2	20.0	23.8	25.2	22.8	19.0	12.6	20.0	25.0	22.6	12.4	10.4	10.4	12.4	4.8	25.2	14.2	24
17	18.0	23.4	21.2	19.6	15.4	13.0	17.0	13.8	16.2	20.8	25.4	33.8	34.2	32.8	50.6	35.0	23.0	17.4	21.6	28.8	29.8	30.2	25.8	27.8	13.0	50.6	24.8	24
18	19.8	22.0	16.8	15.4	15.2	14.6	14.8	18.4	22.6	27.4	35.6	23.6	26.2	28.2	30.6	27.6	26.4	12.4	14.2	12.0	10.8	11.4	12.6	11.4	10.8	35.6	19.6	24
19	10.8	7.6	6.0	7.4	9.0	8.4	10.8	10.6	5.4	10.2	11.4	10.6	14.2	16.6	23.0	23.0	19.0	15.6	15.4	20.2	22.0	24.8	22.6	24.2	5.4	24.8	14.5	24
20	16.4	15.4	12.2	12.6	17.2	27.0	32.2	35.0	32.2	45.4	50.0	50.6	51.0	**61.4**	55.2	45.6	42.8	41.4	32.4	36.8	34.0	32.0	21.6	32.0	12.2	**61.4**	34.7	24
21	27.6	28.8	23.6	21.8	22.4	16.0	20.8	15.8	17.8	19.8	20.2	19.0	22.4	20.0	19.2	18.0	11.4	4.4	5.2	6.0	4.6	6.8	6.4	11.8	4.4	28.8	16.2	24
22	11.2	14.6	13.0	17.0	16.6	19.0	18.8	18.0	15.8	19.2	23.8	18.6	18.6	16.4	20.8	14.8	13.4	12.6	9.8	13.8	19.0	12.6	14.0	7.6	7.6	23.8	15.8	24
23	15.2	13.0	12.8	15.2	16.6	14.0	13.4	7.4	11.4	15.2	13.0	12.4	12.2	12.6	11.4	11.8	9.2	3.2	2.2	4.6	10.4	8.2	10.2	3.8	2.2	16.6	10.8	24
24	3.8	3.2	2.6	3.2	4.2	3.6	5.0	8.2	11.4	11.4	12.0	9.0	13.0	16.6	12.8	13.8	12.6	6.6	8.0	12.4	13.2	16.2	10.6	13.4	2.6	16.6	9.5	24
25	7.6	7.0	6.4	5.6	5.6	6.8	7.0	6.8	9.0	10.8	12.6	10.8	14.0	13.6	14.6	14.2	10.8	21.8	30.8	28.2	28.8	21.6	22.4	18.6	5.6	30.8	14.0	24
26	19.6	16.2	14.4	17.0	15.8	33.4	32.0	10.0	6.6	16.0	17.8	10.8	11.8	11.8	11.8	9.6	8.0	9.8	10.2	7.2	8.4	17.4	21.2	25.0	6.6	33.4	15.1	24
27	21.8	23.8	28.0	37.6	39.6	40.4	29.2	32.6	29.6	47.6	41.2	30.4	35.0	33.6	40.4	27.6	20.4	15.2	10.8	11.2	14.4	10.2	8.0	8.4	8.0	47.6	26.5	24
28	5.6	5.0	4.6	13.8	16.4	16.2	12.4	15.0	15.4	18.8	20.0	21.8	31.6	28.4	18.0	15.6	14.2	12.2	18.4	16.6	13.8	10.2	7.0	5.8	4.6	31.6	14.9	24
29	8.2	9.8	10.6	9.6	8.4	11.4	6.8	6.4	4.4	7.2	12.6	12.2	16.2	14.8	17.8	15.6	11.8	5.6	5.6	6.0	5.6	6.0	5.6	6.2	4.4	17.8	9.4	24
30	6.2	9.4	12.0	10.0	13.0	15.4	13.2	13.0	12.2	15.6	16.4	20.0	26.0	19.0	22.8	25.0	8.4	4.8	11.8	24.0	21.8	16.2	16.0	9.2	4.8	26.0	15.1	24
31	7.0	10.0	7.4	8.8	6.4	8.0	5.6	7.8	11.2	16.0	18.0	19.8	15.4	18.0	16.6	22.8	17.8	10.8	11.0	19.4	26.4	28.0	28.2	27.2	5.6	28.2	15.3	24
HOURLY MAX	27.6	28.8	30.4	37.6	39.6	40.4	32.2	35.0	32.2	47.6	50.0	50.6	51.0	61.4	55.2	45.6	42.8	41.4	36.4	36.8	36.2	33.2	31.0	32.0				

STATUS FLAG CODES

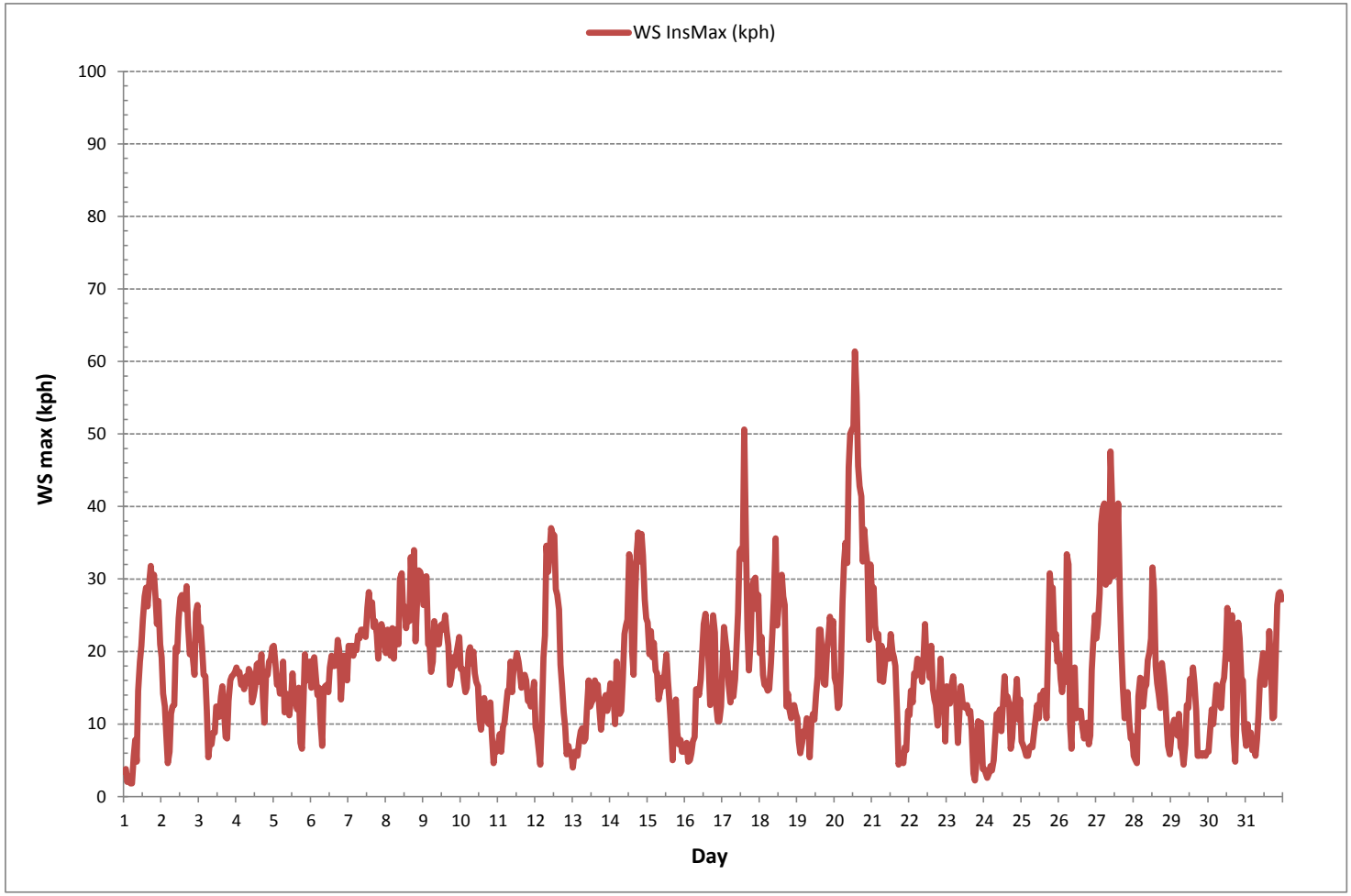
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE: 61.4 kph @ HOUR 13 ON DAY 20

OPERATIONAL TIME: 744 hrs

WIND SPEED Instantaneous Maximum (WS kph)



APPENDIX IV
REPORT CERTIFICATION FORM

Report Certification Form

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

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

Cheri Sinclair

Signature of the External Person Certifying the Report

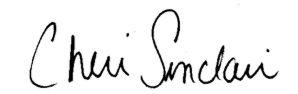
16 - Nov - 2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee **Project #:** 196-2018-10-93-C
Site: Reno Station **Contact:** Karla Reesor

Level 0 Preliminary Verification		**Date**	07 - Nov - 2018
Level 1 Primary Validation		**Date**	08 - Nov - 2018
Level 2 Final Validation		**Date**	13 - Nov - 2018
Level 3 Independent Data Review		**Date**	16 - Nov - 2018
Post-Final Validation	**NA**	**Date**	**NA**

Notes

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