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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

THREE CREEKS 986B STATION

JOB #: 8449-2018-02-67-C

February 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **March 21, 2018**

Prepared by:

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

Reviewed by:

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

SUMMARY

In February 2018, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Three Creeks 986b Station, near Peace River Oil Sands Area 2, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for 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.

THC/CH_4/NMHC: Twelve hours of downtime were recorded this month.

- Due to low fuel gas (H_2) pressure, ten hours of downtime were recorded on February 7.
- Following the calibration on February 15, the canister trigger program was tested on the Ultimate data-logger, incurring two hours of downtime.

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, Three Creeks 986b Station.

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

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee Three Creeks 986b 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	3	5	14	7.5	SW	1	1	100.0
TRS (ppb)	-	-	-	-	0.31	0.71	28	22	3.9	ENE	0.40	7	100.0
THC (ppm)	-	-	-	-	2.00	2.37	19	20	4.9	NNW	2.06	25	98.2
CH_4 (ppm)	-	-	-	-	2.00	2.37	19	20	4.9	NNW	2.06	25	98.2
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	3.3	NNW	0.00	1	98.2
RELATIVE HUMIDITY (%)	-	-	-	-	71	100	13	20	5.9	W	85	25	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	943	962	3	8	4.8	NW	960	8	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	-15.5	2.3	13	14	5.3	WSW	-0.5	13	100.0
STATION TEMPERATURE (°C)	-	-	-	-	23.5	24.5	22	15	10.8	SSW	23.7	3	100.0
VECTOR WS (kph)	-	-	-	-	2.4	19.2	16	14	-	NW	9.9	12	100.0
VECTOR WD (sec)	-	-	-	-	246 (WSW)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY

MONTHLY REPORT SUMMARY

Three Creeks 986b Station	Peace River Area Monitoring Program Committee
Plant Name / Location	Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2018	February

CONTINUOUS AMBIENT MONITORING

		ONE - HOUR AVERAGE			24 - HOUR AVERAGE		
PARAMETER	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO_2	100.0	0.003	ppm	0	0.001	ppm	0
TRS	100.0	0.001	ppm	-	0.000	ppm	-
THC	98.2	2.37	ppm	-	2.06	ppm	-
CH_4	98.2	2.37	ppm	-	2.06	ppm	-
NMHC	98.2	0.00	ppm	-	0.00	ppm	-
RH	100.0	100	%	-	85	%	-
BP	100.0	962	mb	-	960	mb	-
Ambient TPX	100.0	2.3	°C	-	-0.5	°C	-
Station TPX	100.0	24.5	°C	-	23.7	°C	-
Wind Speed	100.0	19	kph	-	10	kph	-
Wind Direction	100.0	-		-	-		-

SIGNATURE OF COMPANY REPRESENTATIVE

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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.

TABLE OF CONTENTS

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

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

SULPHUR DIOXIDE (SO_2)

• Operational time for the monitoring period was 100%.
• The routine monthly calibration was performed on February 15.
• The channels were placed in "maintenance" mode for some minutes on February 14 in order to connect the Ultimate data-logger to the zero-span valves and run a brief check. Maximum instantaneous data collected at hour 18:00 was lost as a result.

TOTAL REDUCED SULPHUR (TRS)

• Operational time for the monitoring period was 100%.
• The routine monthly calibration was performed on February 15.

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

• Operational time, for the monitoring period was 98.2%, equivalent to twelve hours of downtime.
• Due to low fuel gas (H_2) pressure, the analyzer recorded anomalously low hourly and span concentrations on February 7, prompting an immediate site visit. The fuel gas cylinder was replaced and as a quality check, a zero-span check was triggered after the replacement. The result was within limits. Ten hours of downtime were recorded due to this event.
• The routine monthly calibration was performed on February 15. The canister trigger program was tested on the Ultimate data-logger after the calibration, incurring two hours of downtime.
• The channels were placed in "maintenance" mode for some minutes on February 14, in order to connect the Ultimate data-logger to the zero-span valves and run a brief check. Maximum instantaneous data collected at hour 18:00 was lost as a result.
• The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

• Operational time for the monitoring period was 100%.
• 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 audit was conducted on February 15. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

• Operational time for the monitoring period was 100%.
• A pressure sensor audit was conducted on February 15. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on February 15. 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 Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

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

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - Thermo 43C UV Fluorescent Analyzer
Total Reduced Sulphur - Thermo 43i - TLE UV Fluorescent Analyzer
Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
Wind System - RM Young Unit
Relative Humidity - RM Young Unit
Barometric Pressure - Met One Unit
Ambient Temperature - RM Young Unit
Datalogger - ESC 8832

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

Level 0 Preliminary Verification

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

Level 1 Primary Validation

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

Level 2 Final Validation

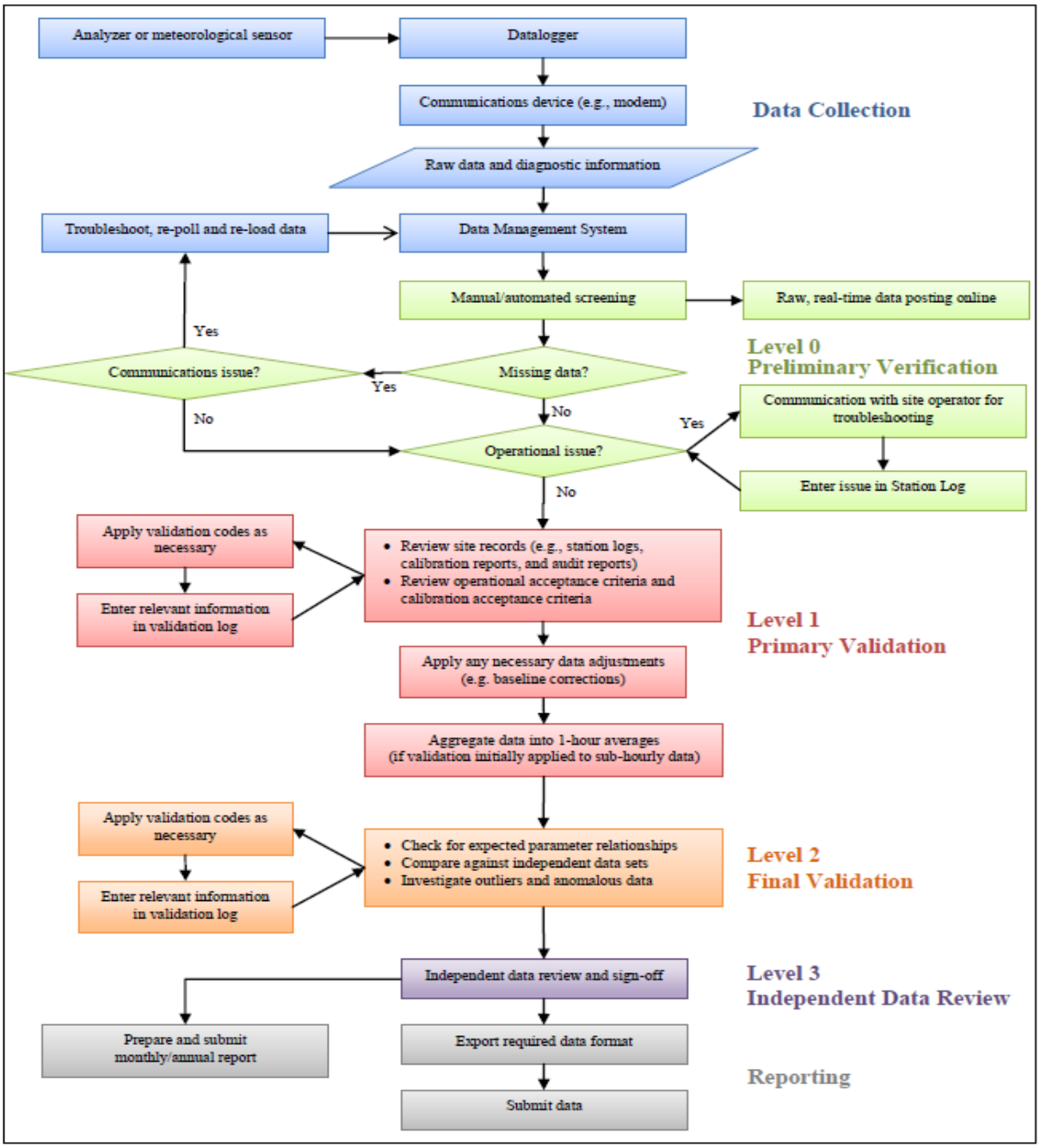
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

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



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

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

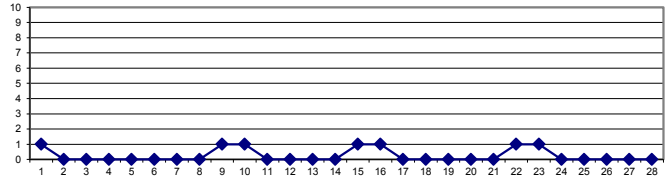
SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)

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

STATUS FLAG CODES

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

24 HR AVERAGES February 2018



OBJECTIVE LIMIT:

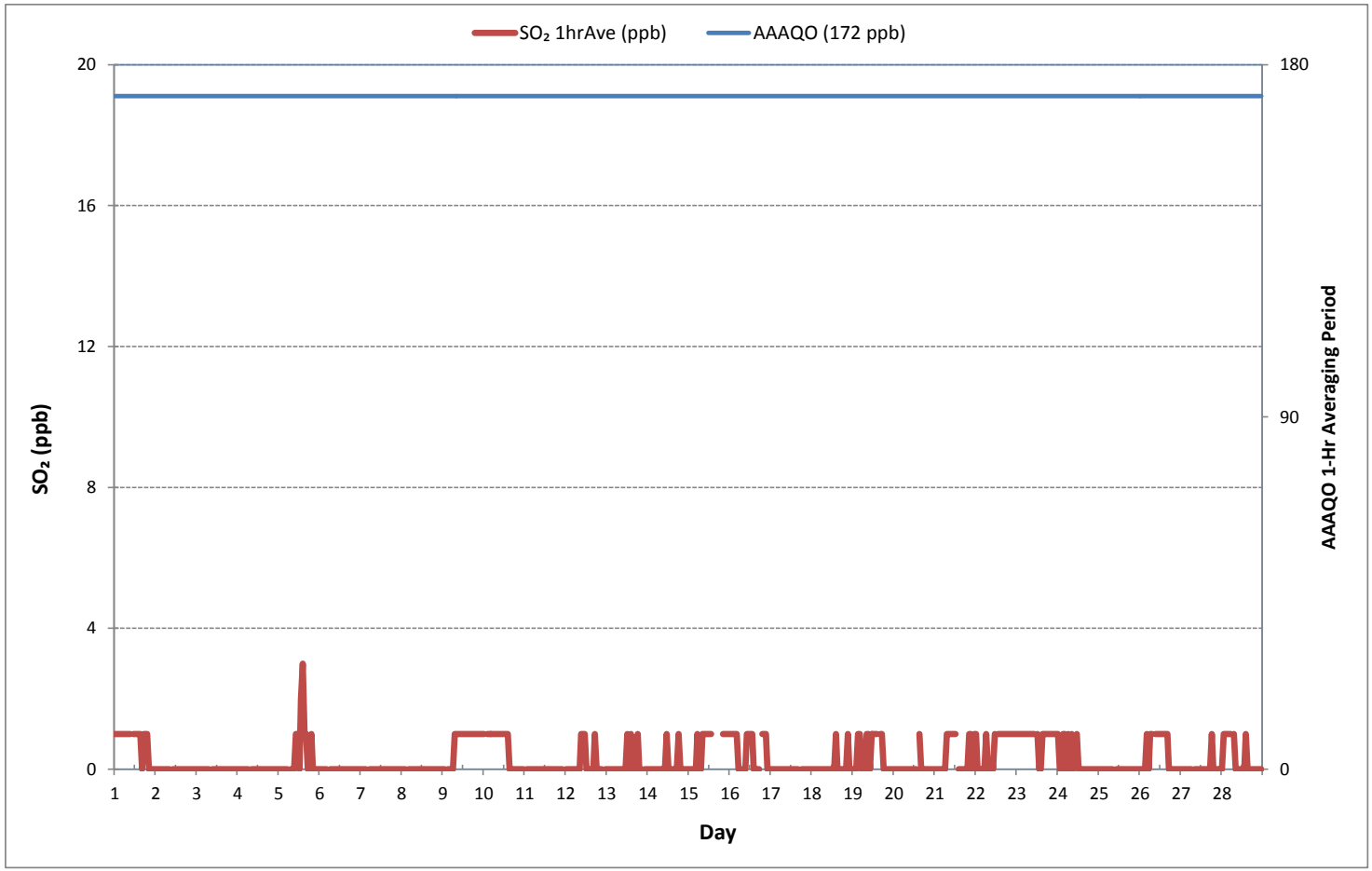
ALBERTA ENVIRONMENT: 1-HR 172 ppb | 24-HR 48 ppb

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0					
NUMBER OF 24-HR EXCEEDANCES:	0					
NUMBER OF NON-ZERO READINGS:	170					
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	16	ON DAY	1
MAXIMUM 1-HR AVERAGE:	3	ppb	@ HOUR	14	ON DAY	5
MAXIMUM 24-HR AVERAGE:	1	ppb			ON DAY	1

IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	672	hrs
MONTHLY CALIBRATION TIME:	6	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



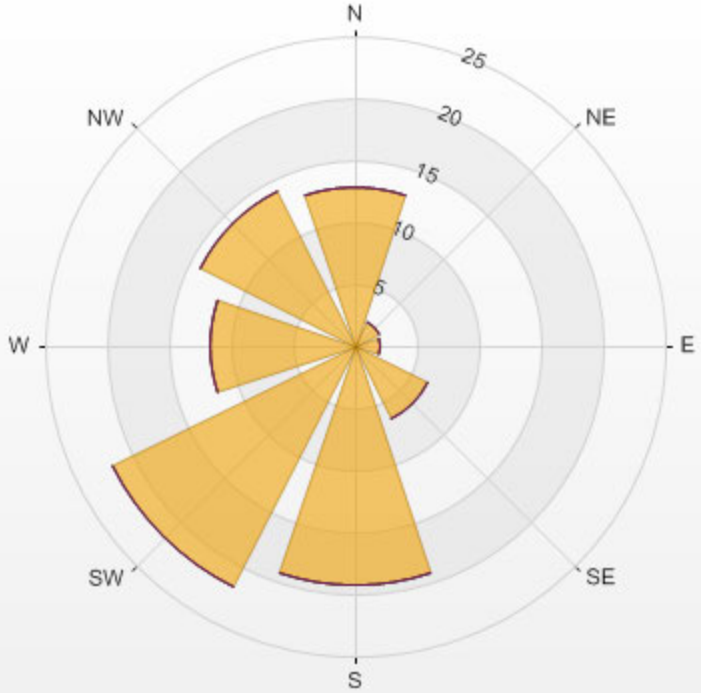
Wind: PRAMP_986
Poll.: PRAMP_986-SO_2[ppb]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.56%

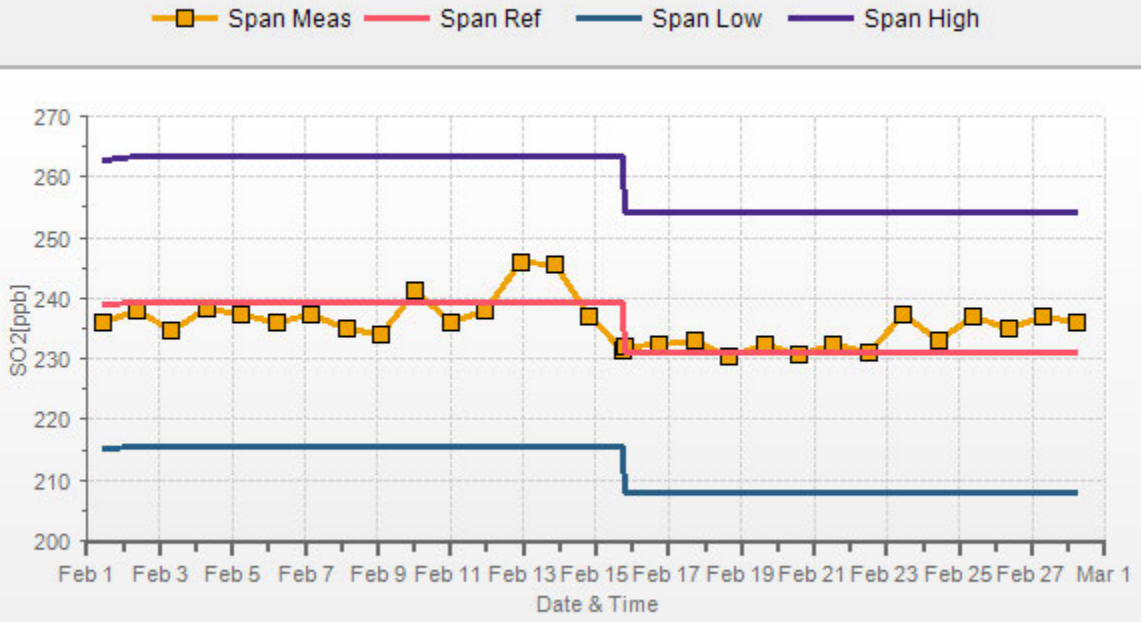
Calm Avg: 0.13 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	12.9	0.0	0.0	0.0	0.0	12.9
NE	2.2	0.0	0.0	0.0	0.0	2.2
E	2.0	0.0	0.0	0.0	0.0	2.0
SE	6.6	0.0	0.0	0.0	0.0	6.6
S	19.3	0.0	0.0	0.0	0.0	19.3
SW	21.8	0.0	0.0	0.0	0.0	21.8
W	11.8	0.0	0.0	0.0	0.0	11.8
NW	14.0	0.0	0.0	0.0	0.0	14.0
Summary	90.4	0.0	0.0	0.0	0.0	90.4

PRAMP_986 Poll.: PRAMP_986-SO2[ppb] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 9.56% Calm Poll Avg: 0.13[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 18/02 Type: Span



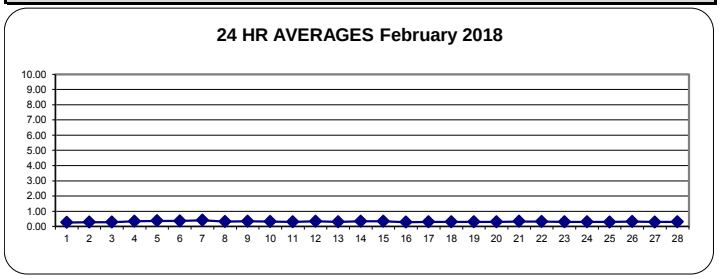
TOTAL REDUCED SULPHUR

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	0.22	0.25	0.23	0.24	0.25	0.26	0.25	0.24	0.24	0.25	S	0.36	0.28	0.26	0.24	0.26	0.27	0.27	0.27	0.27	0.26	0.27	0.26	0.27	0.22	0.36	0.26	24
2	0.28	0.27	0.25	0.26	0.25	0.26	0.27	0.29	0.35	S	0.41	0.30	0.29	0.28	0.26	0.28	0.27	0.25	0.28	0.28	0.27	0.26	0.25	0.25	0.25	0.41	0.28	24
3	0.25	0.24	0.25	0.24	0.25	0.25	0.27	0.27	S	0.36	0.28	0.28	0.27	0.28	0.28	0.28	0.28	0.30	0.29	0.28	0.30	0.30	0.30	0.30	0.24	0.36	0.28	24
4	0.29	0.28	0.31	0.30	0.30	0.32	0.30	S	0.45	0.33	0.34	0.34	0.33	0.35	0.34	0.33	0.34	0.34	0.36	0.35	0.36	0.35	0.35	0.36	0.28	0.45	0.34	24
5	0.35	0.35	0.36	0.35	0.36	0.42	S	0.54	0.47	0.44	0.40	0.37	0.36	0.33	0.32	0.31	0.32	0.34	0.32	0.35	0.37	0.37	0.36	0.37	0.31	0.54	0.37	24
6	0.41	0.41	0.36	0.35	0.33	S	0.47	0.39	0.33	0.34	0.33	0.32	0.31	0.32	0.30	0.33	0.38	0.41	0.40	0.33	0.36	0.33	0.39	0.44	0.30	0.47	0.36	24
7	0.37	0.42	0.52	0.55	S	0.57	0.50	0.51	0.48	0.49	0.49	0.44	0.38	0.33	0.31	0.30	0.30	0.31	0.33	0.34	0.31	0.30	0.34	0.33	0.30	0.57	**0.40**	24
8	0.35	0.38	0.32	S	0.45	0.37	0.31	0.32	0.31	0.33	0.33	0.32	0.32	0.32	0.31	0.31	0.29	0.32	0.29	0.29	0.29	0.30	0.30	0.29	0.29	0.45	0.32	24
9	0.31	0.32	S	0.41	0.34	0.32	0.32	0.33	0.33	0.33	0.33	0.34	0.35	0.35	0.34	0.36	0.36	0.36	0.36	0.34	0.35	0.35	0.35	0.38	0.31	0.41	0.34	24
10	0.36	S	0.45	0.38	0.35	0.35	0.34	0.35	0.35	0.33	0.32	0.33	0.32	0.30	0.29	0.28	0.28	0.28	0.29	0.29	0.27	0.29	0.28	0.29	0.27	0.45	0.32	24
11	S	0.36	0.30	0.28	0.28	0.28	0.27	0.27	0.27	0.31	0.31	0.29	0.30	0.29	0.30	0.29	0.29	0.29	0.30	0.29	0.30	0.29	0.29	S	0.27	0.36	0.29	24
12	0.39	0.31	0.30	0.31	0.32	0.32	0.32	0.31	0.32	0.33	0.33	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.35	0.35	0.34	0.34	S	0.38	0.30	0.39	0.33	24
13	0.33	0.34	0.32	0.31	0.33	0.31	0.30	0.29	0.31	0.30	0.31	0.29	0.31	0.31	0.27	0.29	0.29	0.28	0.31	0.31	0.29	S	0.31	0.27	0.27	0.34	0.30	24
14	0.28	0.33	0.33	0.31	0.29	0.30	0.30	0.29	0.30	0.30	0.31	0.35	0.33	0.34	0.35	0.33	0.34	0.36	0.41	0.33	S	0.44	0.35	0.33	0.28	0.44	0.33	24
15	0.32	0.31	0.30	0.30	0.30	0.32	0.31	0.29	0.31	0.31	0.32	C	C	C	C	C	0.63	0.34	0.29	S	0.43	0.33	0.31	0.32	0.29	0.63	0.34	24
16	0.29	0.27	0.27	0.28	0.29	0.27	0.26	0.24	0.25	0.26	0.28	0.27	0.26	0.25	0.27	0.26	0.26	0.27	S	0.38	0.29	0.30	0.29	0.27	0.24	0.38	0.28	24
17	0.28	0.28	0.27	0.28	0.28	0.27	0.29	0.29	0.30	0.30	0.30	0.31	0.30	0.30	0.30	0.31	0.30	S	0.38	0.31	0.29	0.33	0.31	0.32	0.27	0.38	0.30	24
18	0.33	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.31	0.32	0.30	0.31	0.30	0.30	0.29	0.30	S	0.37	0.32	0.31	0.28	0.31	0.29	0.29	0.28	0.37	0.31	24
19	0.28	0.28	0.29	0.29	0.29	0.29	0.30	0.29	0.31	0.31	0.32	0.31	0.31	0.29	0.30	S	0.38	0.32	0.30	0.29	0.30	0.30	0.28	0.29	0.28	0.38	0.30	24
20	0.30	0.29	0.29	0.29	0.29	0.28	0.29	0.29	0.31	0.30	0.28	0.29	0.29	0.30	S	0.39	0.33	0.31	0.30	0.32	0.30	0.30	0.30	0.31	0.28	0.39	0.30	24
21	0.30	0.29	0.31	0.30	0.32	0.31	0.30	0.31	0.31	0.31	0.32	0.33	0.33	S	0.40	0.34	0.32	0.35	0.33	0.32	0.31	0.35	0.35	0.48	0.29	0.48	0.33	24
22	0.36	0.34	0.33	0.35	0.32	0.34	0.34	0.32	0.31	0.32	0.32	0.32	S	0.39	0.34	0.32	0.32	0.31	0.32	0.31	0.29	0.28	0.29	0.28	0.28	0.39	0.32	24
23	0.28	0.25	0.26	0.26	0.25	0.27	0.27	0.26	0.26	0.27	0.29	S	0.34	0.30	0.29	0.29	0.30	0.30	0.30	0.36	0.37	0.31	0.31	0.34	0.25	0.37	0.29	24
24	0.27	0.29	0.30	0.30	0.30	0.30	0.29	0.30	0.31	0.30	S	0.38	0.33	0.32	0.31	0.31	0.30	0.30	0.30	0.31	0.30	0.31	0.30	0.28	0.27	0.38	0.30	24
25	0.28	0.29	0.28	0.28	0.28	0.29	0.28	0.29	0.33	S	0.35	0.32	0.30	0.28	0.30	0.28	0.29	0.29	0.28	0.29	0.28	0.28	0.26	0.27	0.26	0.35	0.29	24
26	0.31	0.32	0.31	0.30	0.31	0.31	0.32	0.32	S	0.38	0.34	0.32	0.34	0.33	0.32	0.33	0.32	0.31	0.32	0.31	0.31	0.30	0.30	0.30	0.30	0.38	0.32	24
27	0.30	0.30	0.28	0.29	0.29	0.29	0.30	S	0.35	0.30	0.30	0.29	0.33	0.30	0.28	0.28	0.26	0.28	0.29	0.28	0.32	0.27	0.27	0.26	0.26	0.35	0.29	24
28	0.26	0.29	0.27	0.29	0.30	0.31	S	0.34	0.29	0.29	0.32	0.29	0.29	0.25	0.25	0.27	0.24	0.23	0.24	**0.21**	0.24	0.54	**0.71**	0.22	**0.21**	**0.71**	0.30	24
HOURLY MAX	0.41	0.42	0.52	0.55	0.45	0.57	0.50	0.54	0.48	0.49	0.49	0.44	0.38	0.39	0.40	0.39	0.63	0.41	0.41	0.38	0.43	0.54	0.71	0.48				
HOURLY AVG	0.31	0.31	0.31	0.31	0.30	0.31	0.31	0.32	0.33	0.32	0.33	0.32	0.32	0.31	0.30	0.31	0.32	0.31	0.32	0.31	0.31	0.32	0.32	0.31				

STATUS FLAG CODES

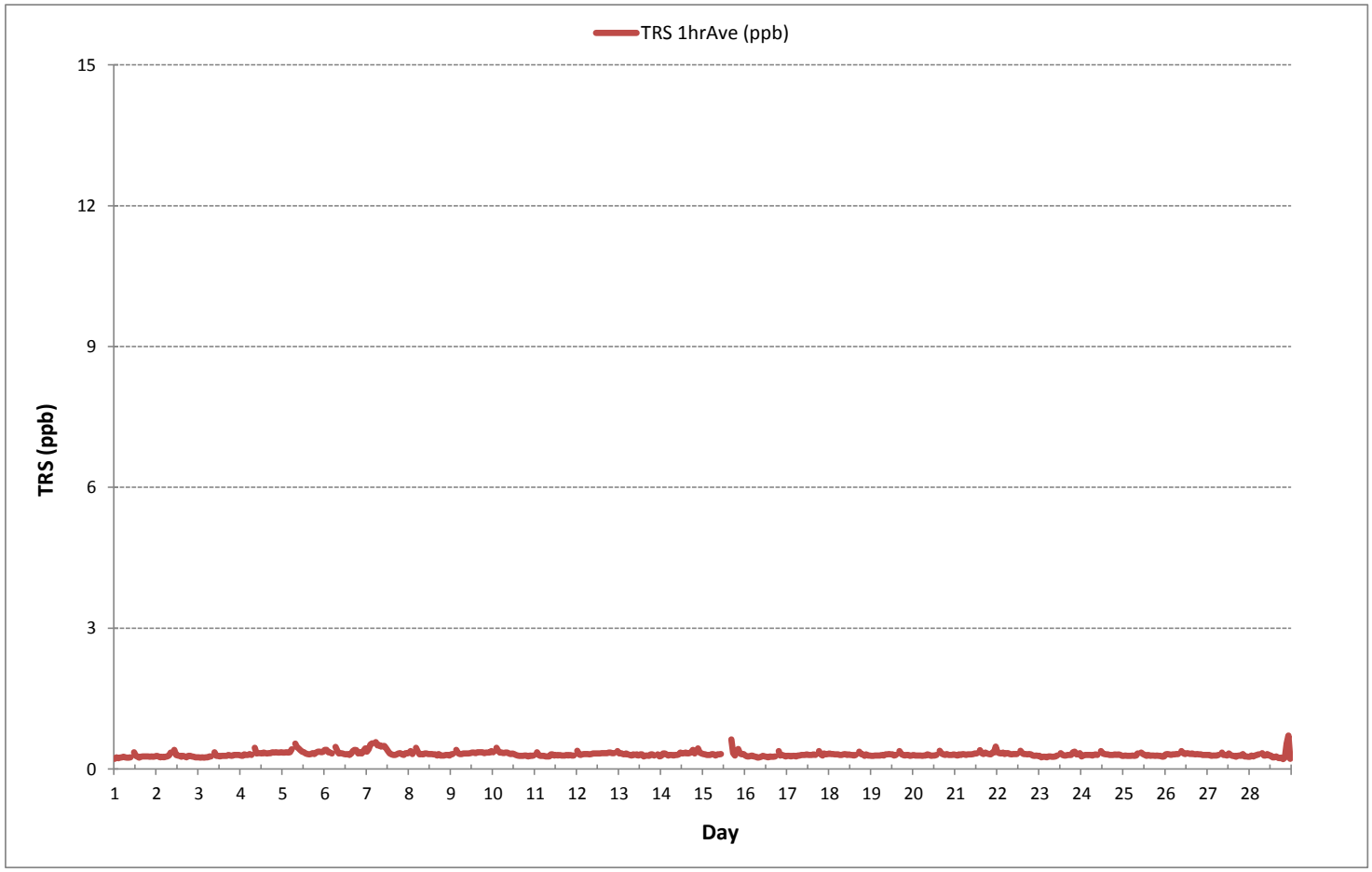
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			638				
MINIMUM 1-HR AVERAGE	0.21	ppb	@ HOUR	19	ON DAY	28	
MAXIMUM 1-HR AVERAGE:	0.71	ppb	@ HOUR	22	ON DAY	28	
MAXIMUM 24-HR AVERAGE:	0.40	ppb			ON DAY	7	
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:			672	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:			0.31	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



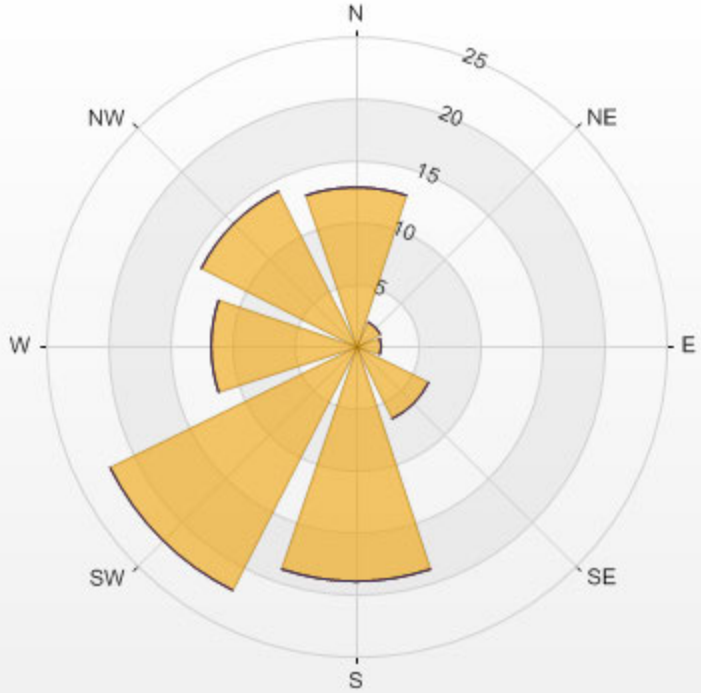
Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.56% Calm Avg: 0.36 [ppb]

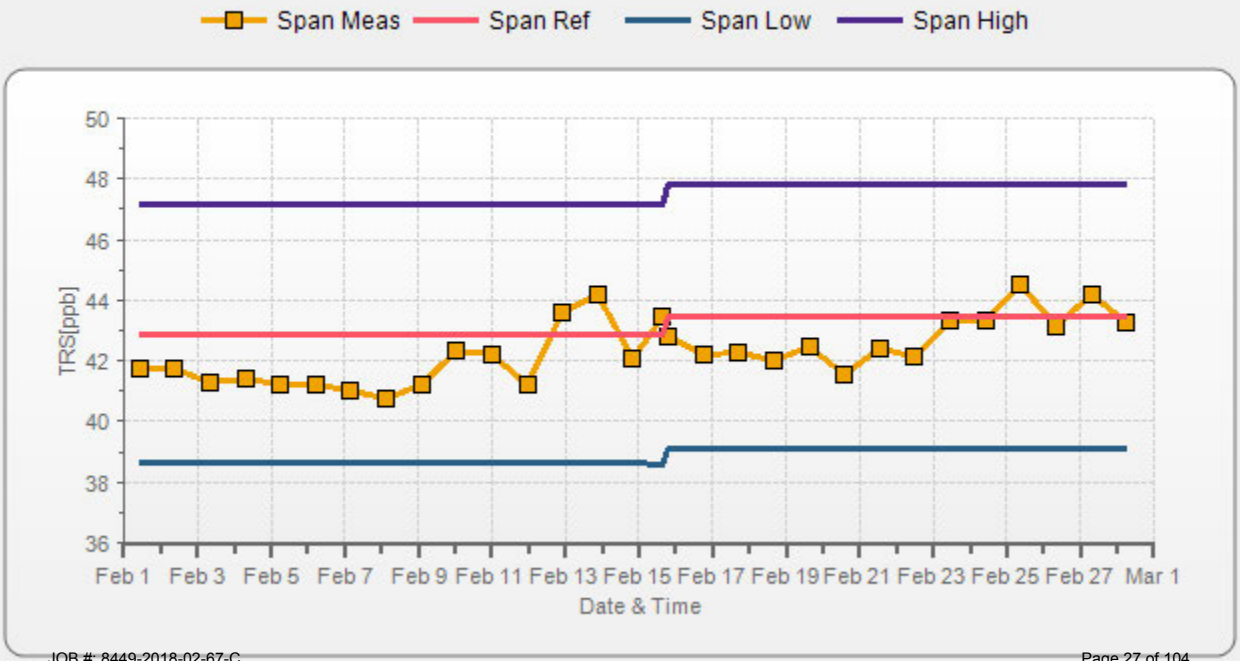
Direction	0-1	1-3	3-10	>10.0	Total
N	12.9	0.0	0.0	0.0	12.9
NE	2.2	0.0	0.0	0.0	2.2
E	2.0	0.0	0.0	0.0	2.0
SE	6.6	0.0	0.0	0.0	6.6
S	19.0	0.0	0.0	0.0	19.0
SW	22.1	0.0	0.0	0.0	22.1
W	11.8	0.0	0.0	0.0	11.8
NW	14.0	0.0	0.0	0.0	14.0
Summary	90.4	0.0	0.0	0.0	90.4

% Icon Classes (ppb)	90 0-1	0 1-3	0 3-10	0 >10.0

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 9.56% Calm Poll Avg: 0.36[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 18/02 Type: Span



TOTAL HYDROCARBON

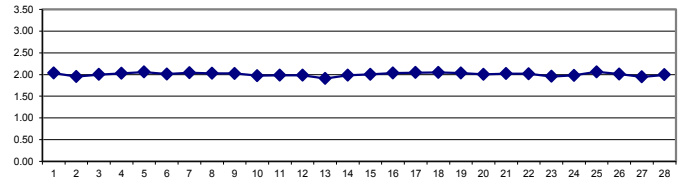
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.97	2.05	2.07	2.04	2.13	2.10	2.16	2.09	2.06	2.00	S	1.96	2.00	2.01	2.02	1.99	2.00	2.02	2.05	2.04	1.96	2.00	1.98	1.99	1.96	2.16	2.03	24
2	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	S	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.98	1.95	1.95	1.95	1.98	1.95	24
3	2.04	2.04	1.97	2.01	2.11	2.08	1.97	1.97	S	1.98	2.01	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.99	1.99	1.98	1.97	2.11	2.00	24
4	1.98	1.99	1.99	1.98	1.98	1.99	1.99	S	1.99	2.00	2.00	2.01	2.02	2.01	2.01	2.06	2.12	2.13	2.05	2.06	2.05	2.05	2.05	2.05	1.98	2.13	2.02	24
5	2.05	2.05	2.04	2.03	2.02	2.04	S	2.07	2.09	2.12	2.09	2.05	2.00	1.99	1.98	1.98	1.99	2.03	2.03	2.05	2.07	2.19	2.08	2.22	1.98	2.22	2.05	24
6	2.13	2.10	2.08	2.07	2.05	S	2.02	2.01	2.00	2.00	1.99	2.00	1.99	1.97	1.98	1.98	1.98	2.00	1.98	1.98	1.98	1.99	1.99	1.97	1.97	2.13	2.01	24
7	X	X	X	X	X	X	X	X	X	X	S	2.02	2.02	2.00	2.02	1.97	2.09	2.19	2.27	1.98	1.98	1.99	1.99	2.00	1.97	2.27	2.04	14
8	2.21	2.02	2.03	S	2.03	2.01	2.00	1.99	2.01	2.05	2.16	2.03	1.99	1.99	2.03	2.02	1.99	2.00	1.99	2.00	2.02	2.02	2.02	2.01	1.99	2.21	2.03	24
9	2.02	2.02	S	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.02	2.03	2.03	2.02	2.02	2.02	2.03	2.02	24
10	2.02	S	2.00	2.00	1.98	1.98	1.97	1.97	1.97	1.96	1.98	2.06	2.04	1.98	1.97	1.97	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.93	2.06	1.97	24
11	S	1.99	2.04	2.06	1.96	1.96	1.96	1.96	1.97	2.00	2.05	2.00	1.99	1.99	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	S	1.96	2.06	1.98	24
12	1.96	1.96	1.97	1.99	2.01	2.02	2.02	2.01	2.01	2.00	2.01	2.00	1.99	1.98	1.99	1.98	1.97	1.97	1.98	1.96	1.96	1.96	S	1.94	1.94	2.02	1.98	24
13	1.93	1.92	1.91	1.91	1.91	**1.90**	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	S	1.90	1.91	**1.90**	1.93	1.91	24
14	1.92	1.93	1.94	1.94	1.95	1.97	1.98	1.98	1.98	1.98	2.00	2.00	2.04	2.04	2.01	2.01	1.98	1.98	1.97	1.97	S	1.99	1.99	1.99	1.92	2.04	1.98	24
15	2.00	2.00	1.99	1.99	1.99	2.00	2.01	2.01	2.00	2.00	1.98	C	C	C	C	Y	Y	2.01	2.02	S	2.03	2.02	2.01	2.00	1.98	2.03	2.00	22
16	1.98	1.97	2.02	2.15	2.11	2.12	1.97	1.98	2.03	2.01	1.99	2.06	2.09	2.07	2.04	2.04	2.00	2.06	S	1.99	2.00	2.00	2.01	2.02	1.97	2.15	2.03	24
17	2.01	2.00	2.13	2.07	2.01	1.99	2.06	2.12	2.04	1.99	2.05	2.05	2.04	2.07	2.09	2.07	2.08	S	2.00	1.98	2.07	2.06	1.99	2.00	1.98	2.13	2.04	24
18	2.00	2.01	2.00	2.03	2.25	2.07	2.14	2.14	2.12	2.02	2.00	2.03	2.00	2.06	2.02	2.01	S	2.02	2.14	1.99	1.99	1.99	2.00	2.00	1.99	2.25	2.04	24
19	2.00	2.01	2.00	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	S	1.98	2.08	2.10	2.05	**2.37**	2.08	2.12	1.98	1.98	**2.37**	2.03	24
20	1.98	1.97	1.98	2.05	1.99	1.99	1.99	1.99	1.99	2.00	2.03	2.04	2.04	2.08	S	2.00	2.00	1.99	1.99	2.00	1.99	1.99	1.99	1.99	1.97	2.08	2.00	24
21	1.99	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.02	2.02	2.00	2.01	S	2.08	2.11	2.11	2.00	2.00	2.00	2.00	1.99	2.04	2.02	1.99	2.11	2.02	24
22	2.00	2.03	2.04	2.15	2.15	1.99	2.00	2.00	2.00	2.00	2.00	2.00	S	2.00	2.00	2.01	2.01	2.00	2.02	2.00	2.00	1.99	1.99	1.99	1.99	2.15	2.02	24
23	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.98	1.97	1.96	S	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.93	1.98	1.96	24
24	1.95	1.95	1.96	1.96	1.96	1.97	1.98	1.97	2.12	2.04	S	1.99	1.99	1.98	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.98	1.98	1.98	1.95	2.12	1.98	24
25	1.98	1.96	1.95	1.95	1.97	2.07	2.33	2.21	2.16	S	1.99	2.02	2.08	2.05	2.01	2.14	2.16	2.07	2.24	2.05	1.98	1.98	1.98	2.03	1.95	2.33	**2.06**	24
26	2.09	2.11	2.09	2.07	2.08	2.08	2.09	2.06	S	1.99	1.99	2.00	2.01	1.99	1.99	1.98	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.93	1.93	2.11	2.01	24
27	1.93	1.94	1.93	1.93	1.93	1.94	1.94	S	1.94	1.93	1.93	1.94	1.94	1.93	1.94	1.94	1.94	1.93	1.93	1.94	1.99	1.94	2.06	1.94	1.93	2.06	1.94	24
28	1.95	2.02	2.04	2.05	2.02	2.01	S	2.00	1.99	1.99	1.97	1.97	1.97	1.97	1.98	2.03	1.97	1.97	1.97	1.98	1.99	2.00	2.00	1.99	1.95	2.05	1.99	24
HOURLY MAX	2.21	2.11	2.13	2.15	2.25	2.12	2.33	2.21	2.16	2.12	2.16	2.06	2.09	2.08	2.09	2.14	2.16	2.19	2.27	2.06	2.37	2.19	2.12	2.22				
HOURLY AVG	2.00	2.00	2.00	2.01	2.02	2.01	2.02	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	1.99	2.00	2.00	2.00	1.99				

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

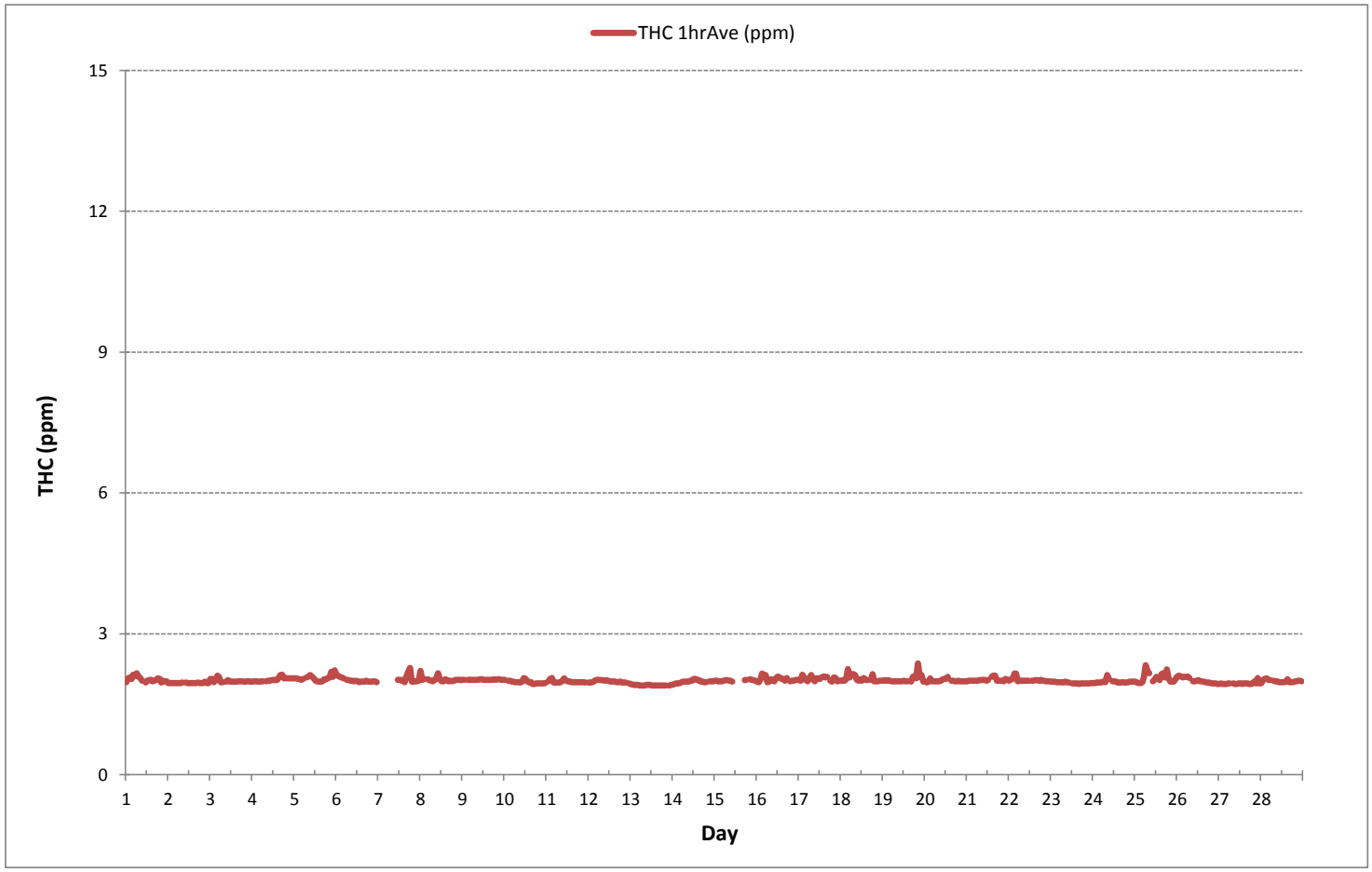
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		627					
MINIMUM 1-HR AVERAGE	1.90	ppm	@ HOUR	5	ON DAY	13	
MAXIMUM 1-HR AVERAGE:	2.37	ppm	@ HOUR	20	ON DAY	19	
MAXIMUM 24-HR AVERAGE:	2.06	ppm			ON DAY	25	
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:			660	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			98.2	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:			2.00	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



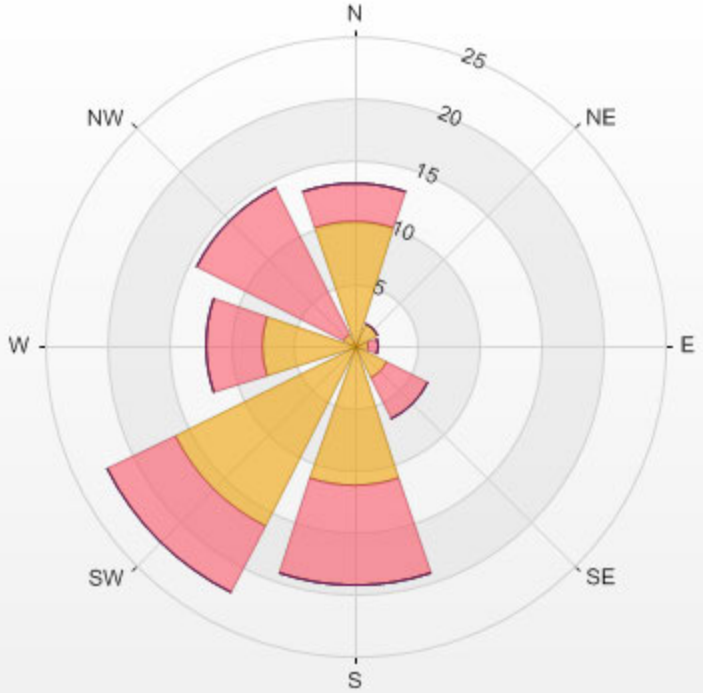
Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 8.61% Calm Avg: 2.02 [ppm]

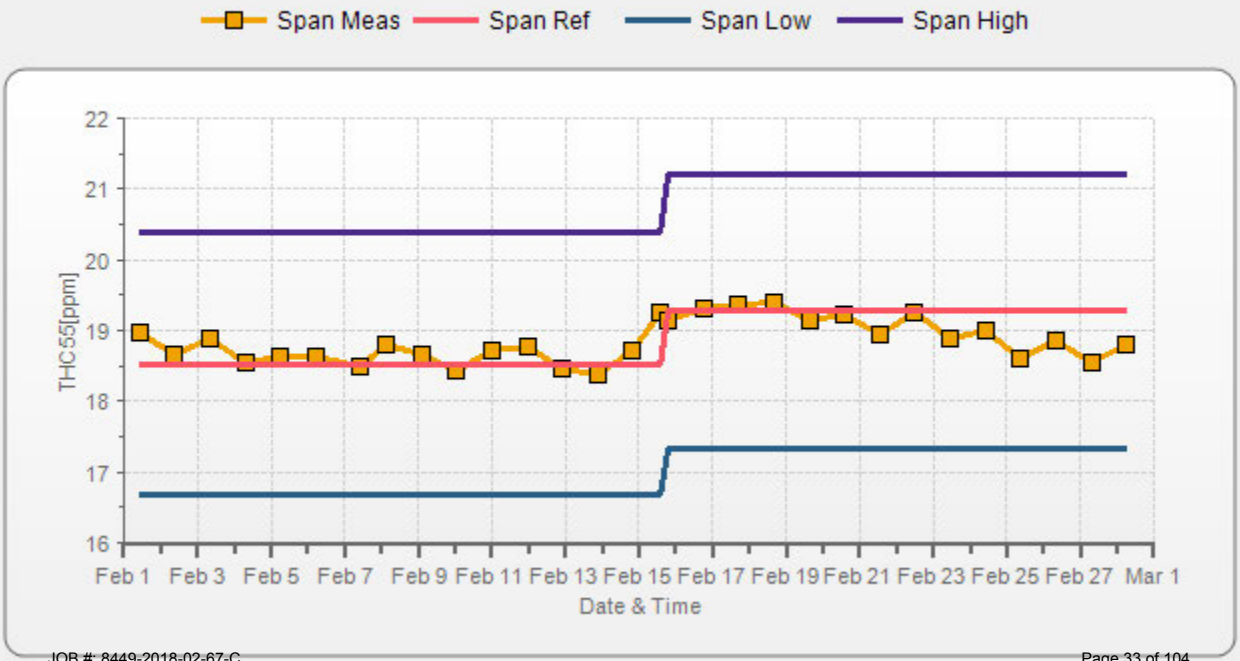
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	10.1	3.0	0.0	0.0	0.0	13.1
NE	2.1	0.0	0.0	0.0	0.0	2.1
E	1.1	0.8	0.0	0.0	0.0	1.9
SE	2.9	3.7	0.0	0.0	0.0	6.5
S	11.3	8.0	0.0	0.0	0.0	19.3
SW	16.3	6.1	0.0	0.0	0.0	22.3
W	7.5	4.5	0.0	0.0	0.0	12.0
NW	1.1	13.1	0.0	0.0	0.0	14.2
Summary	52.3	39.1	0.0	0.0	0.0	91.4

% Icon Classes (ppm)	52 0-2	39 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 8.61% Calm Poll Avg: 2.02[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 18/02 Type: Span



METHANE

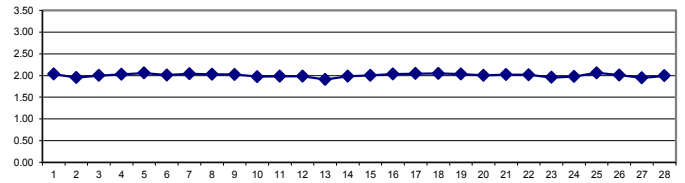
METHANE Hourly Averages (CH_4 ppm)

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	1.97	2.05	2.07	2.04	2.13	2.10	2.16	2.09	2.06	2.00	S	1.96	2.00	2.01	2.02	1.99	2.00	2.02	2.05	2.04	1.96	2.00	1.98	1.99	1.96	2.16	2.03	24
2	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	S	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.98	1.95	1.95	1.95	1.98	1.95	24
3	2.04	2.04	1.97	2.01	2.11	2.08	1.97	1.97	S	1.98	2.01	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.99	1.99	1.98	1.97	2.11	2.00	24
4	1.98	1.99	1.99	1.98	1.98	1.99	1.99	S	1.99	2.00	2.00	2.01	2.02	2.01	2.01	2.06	2.12	2.13	2.05	2.06	2.05	2.05	2.05	2.05	1.98	2.13	2.02	24
5	2.05	2.05	2.04	2.03	2.02	2.04	S	2.07	2.09	2.12	2.09	2.05	2.00	1.99	1.98	1.98	1.99	2.03	2.03	2.05	2.07	2.19	2.08	2.22	1.98	2.22	2.05	24
6	2.13	2.10	2.08	2.07	2.05	S	2.02	2.01	2.00	2.00	1.99	2.00	1.99	1.97	1.98	1.98	1.98	2.00	1.98	1.98	1.98	1.99	1.99	1.97	1.97	2.13	2.01	24
7	X	X	X	X	X	X	X	X	X	X	S	2.02	2.02	2.00	2.02	1.97	2.09	2.19	2.27	1.98	1.98	1.99	1.99	2.00	1.97	2.27	2.04	14
8	2.21	2.02	2.03	S	2.03	2.01	2.00	1.99	2.01	2.05	2.16	2.03	1.99	1.99	2.03	2.02	1.99	2.00	1.99	2.00	2.02	2.02	2.02	2.01	1.99	2.21	2.03	24
9	2.02	2.02	S	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.02	2.03	2.03	2.02	2.02	2.02	2.03	2.02	24
10	2.02	S	2.00	2.00	1.98	1.98	1.97	1.97	1.97	1.96	1.98	2.06	2.04	1.98	1.97	1.97	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.93	2.06	1.97	24
11	S	1.99	2.04	2.06	1.96	1.96	1.96	1.96	1.97	2.00	2.05	2.00	1.99	1.99	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	S	1.96	2.06	1.98	24
12	1.96	1.96	1.97	1.99	2.01	2.02	2.02	2.01	2.01	2.00	2.01	2.00	1.99	1.98	1.99	1.98	1.97	1.97	1.98	1.96	1.96	1.96	S	1.94	1.94	2.02	1.98	24
13	1.93	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	S	1.90	1.91	1.90	1.93	1.91	24
14	1.92	1.93	1.94	1.94	1.95	1.97	1.98	1.98	1.98	1.98	2.00	2.00	2.04	2.04	2.01	2.01	1.98	1.98	1.97	1.97	S	1.99	1.99	1.99	1.92	2.04	1.98	24
15	2.00	2.00	1.99	1.99	1.99	2.00	2.01	2.01	2.00	2.00	1.99	C	C	C	C	Y	Y	2.01	2.02	S	2.03	2.02	2.01	2.00	1.99	2.03	2.00	22
16	1.98	1.97	2.02	2.15	2.11	2.12	1.97	1.98	2.03	2.01	1.99	2.06	2.09	2.07	2.04	2.04	2.00	2.06	S	1.99	2.00	2.00	2.01	2.02	1.97	2.15	2.03	24
17	2.01	2.00	2.13	2.07	2.01	1.99	2.06	2.12	2.04	1.99	2.05	2.05	2.04	2.07	2.09	2.07	2.08	S	2.00	1.98	2.07	2.06	1.99	2.00	1.98	2.13	2.04	24
18	2.00	2.01	2.00	2.03	2.25	2.07	2.14	2.14	2.12	2.02	2.00	2.03	2.00	2.06	2.02	2.01	S	2.02	2.14	1.99	1.99	1.99	2.00	2.00	1.99	2.25	2.04	24
19	2.00	2.01	2.00	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	S	1.98	2.08	2.10	2.05	**2.37**	2.08	2.12	1.98	1.98	**2.37**	2.03	24
20	1.98	1.97	1.98	2.05	1.99	1.99	1.99	1.99	1.99	2.00	2.03	2.04	2.04	2.08	S	2.00	2.00	1.99	1.99	2.00	1.99	1.99	1.99	1.99	1.97	2.08	2.00	24
21	1.99	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.02	2.02	2.00	2.01	S	2.08	2.11	2.11	2.00	2.00	2.00	2.00	1.99	2.04	2.02	1.99	2.11	2.02	24
22	2.00	2.03	2.04	2.15	2.15	1.99	2.00	2.00	2.00	2.00	2.00	2.00	S	2.00	2.00	2.01	2.01	2.00	2.02	2.00	2.00	1.99	1.99	1.99	1.99	2.15	2.02	24
23	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.96	1.98	1.97	1.96	S	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.93	1.98	1.96	24
24	1.95	1.95	1.96	1.96	1.96	1.97	1.98	1.97	2.12	2.04	S	1.99	1.99	1.98	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.98	1.98	1.98	1.95	2.12	1.98	24
25	1.98	1.96	1.95	1.95	1.97	2.07	2.33	2.21	2.16	S	1.99	2.02	2.08	2.05	2.01	2.14	2.16	2.07	2.24	2.05	1.98	1.98	1.98	2.03	1.95	2.33	**2.06**	24
26	2.09	2.11	2.09	2.07	2.08	2.08	2.09	2.06	S	1.99	1.99	2.00	2.01	1.99	1.99	1.98	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.93	1.93	2.11	2.01	24
27	1.93	1.94	1.93	1.93	1.93	1.94	1.94	S	1.94	1.93	1.93	1.94	1.94	1.93	1.94	1.94	1.94	1.93	1.93	1.94	1.99	1.94	2.06	1.94	1.93	2.06	1.94	24
28	1.95	2.02	2.04	2.05	2.02	2.01	S	2.00	1.99	1.99	1.97	1.97	1.97	1.97	1.98	2.03	1.97	1.97	1.97	1.98	1.99	2.00	2.00	1.99	1.95	2.05	1.99	24
HOURLY MAX	2.21	2.11	2.13	2.15	2.25	2.12	2.33	2.21	2.16	2.12	2.16	2.06	2.09	2.08	2.09	2.14	2.16	2.19	2.27	2.06	2.37	2.19	2.12	2.22				
HOURLY AVG	2.00	2.00	2.00	2.01	2.02	2.01	2.02	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	1.99	2.00	2.00	2.00	1.99				

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

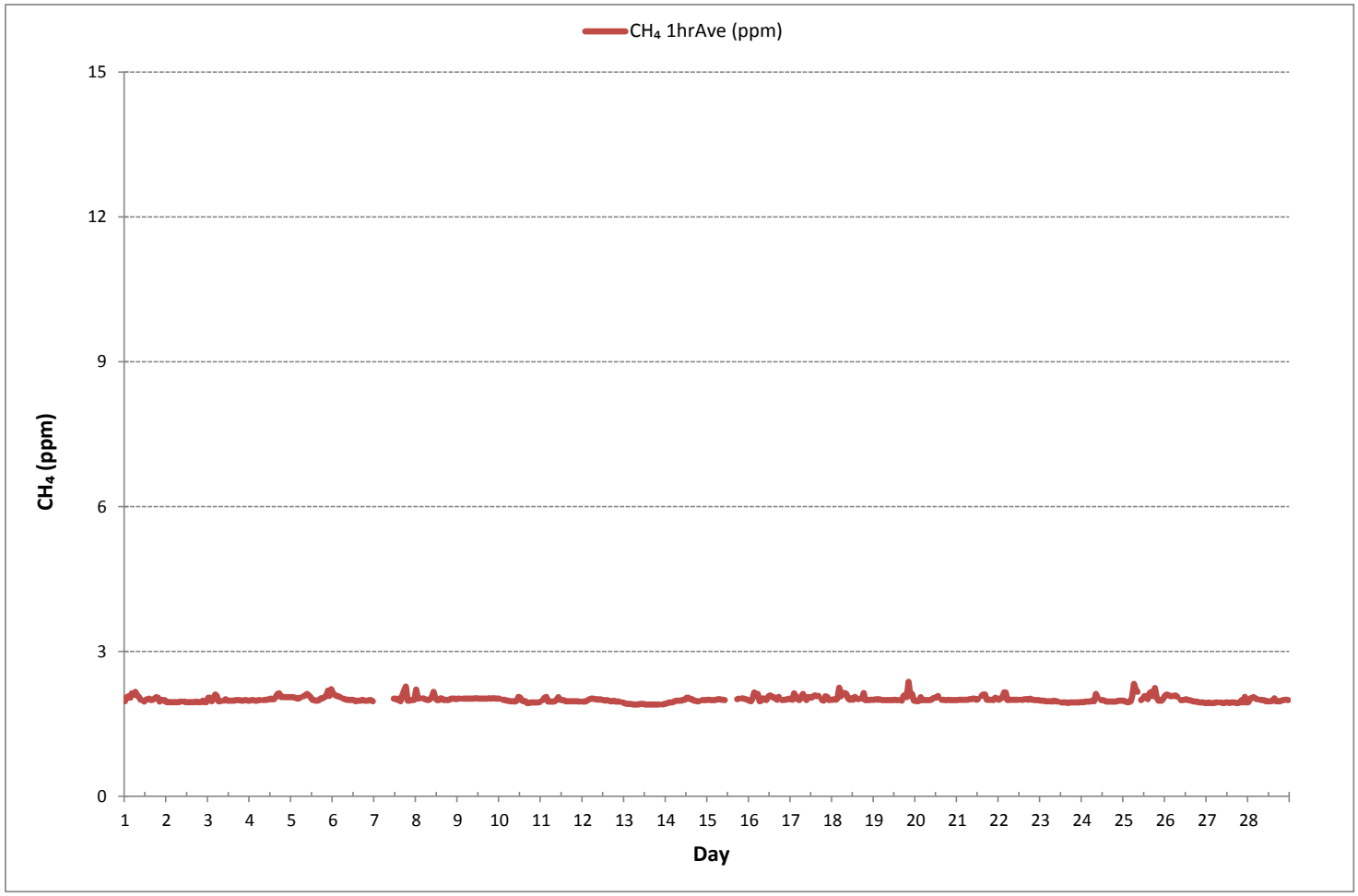
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		627					
MINIMUM 1-HR AVERAGE	1.90	ppm	@ HOUR	5	ON DAY	13	
MAXIMUM 1-HR AVERAGE:	2.37	ppm	@ HOUR	20	ON DAY	19	
MAXIMUM 24-HR AVERAGE:	2.06	ppm			ON DAY	25	
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:			660	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			98.2	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:			2.00	ppm

METHANE Hourly Averages (CH_4 ppm)



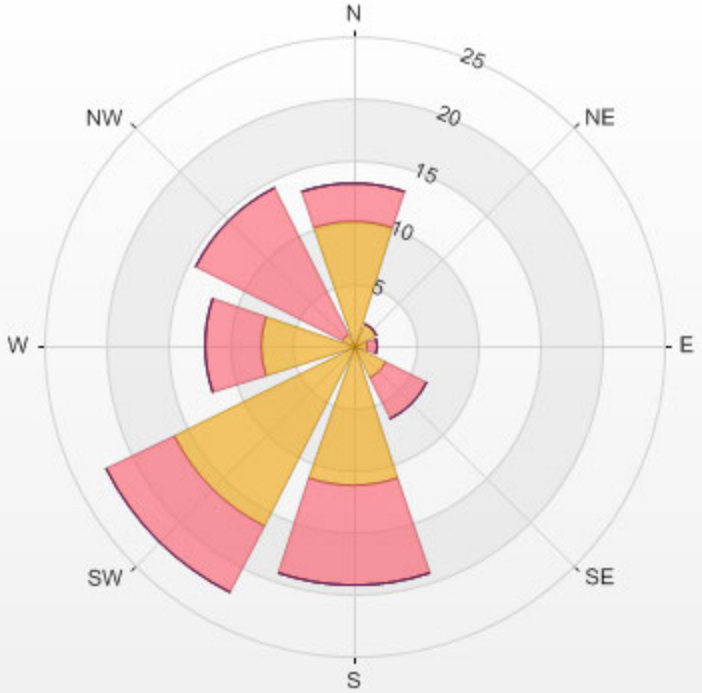
Wind: PRAMP_986
Poll.: PRAMP_986-CH_4[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 8.61% Calm Avg: 2.02 [ppm]

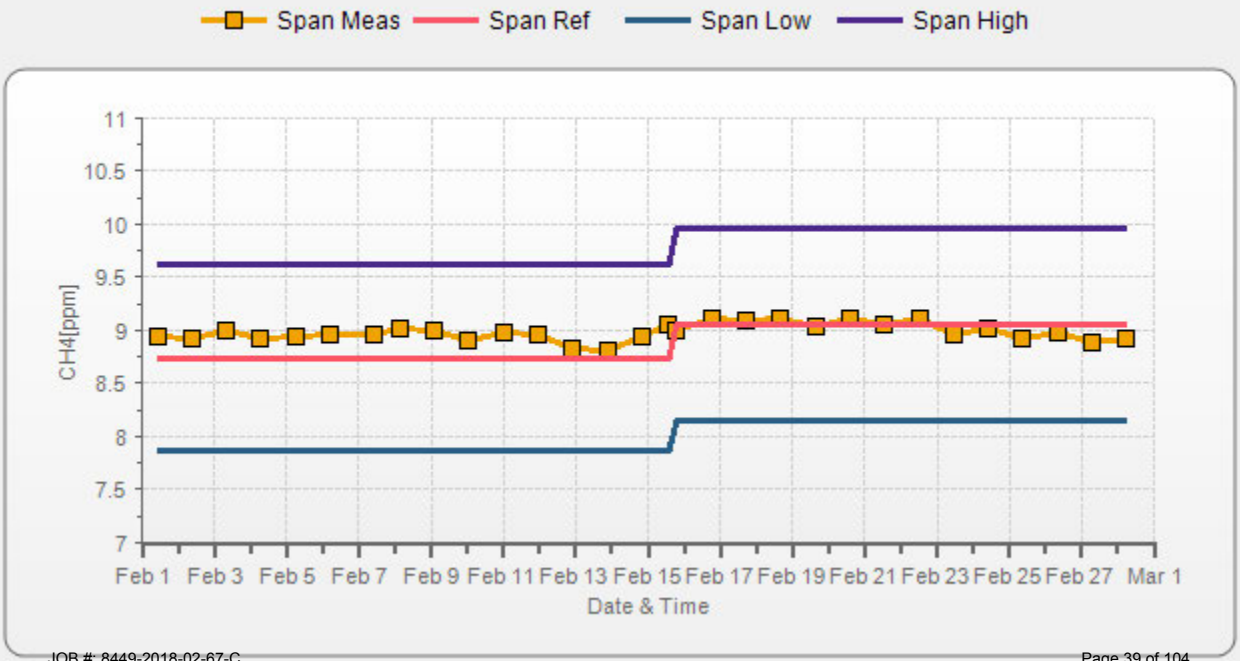
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	10.1	3.0	0.0	0.0	0.0	13.1
NE	2.1	0.0	0.0	0.0	0.0	2.1
E	1.1	0.8	0.0	0.0	0.0	1.9
SE	2.9	3.7	0.0	0.0	0.0	6.5
S	11.3	8.0	0.0	0.0	0.0	19.3
SW	16.3	6.1	0.0	0.0	0.0	22.3
W	7.5	4.5	0.0	0.0	0.0	12.0
NW	1.1	13.1	0.0	0.0	0.0	14.2
Summary	52.3	39.1	0.0	0.0	0.0	91.4

% Icon Classes (ppm)	52 0-2	39 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 8.61% Calm Poll Avg: 2.02[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 18/02 Type: Span



NON-METHANE HYDROCARBON

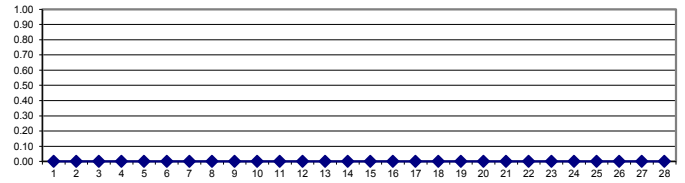
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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

STATUS FLAG CODES

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

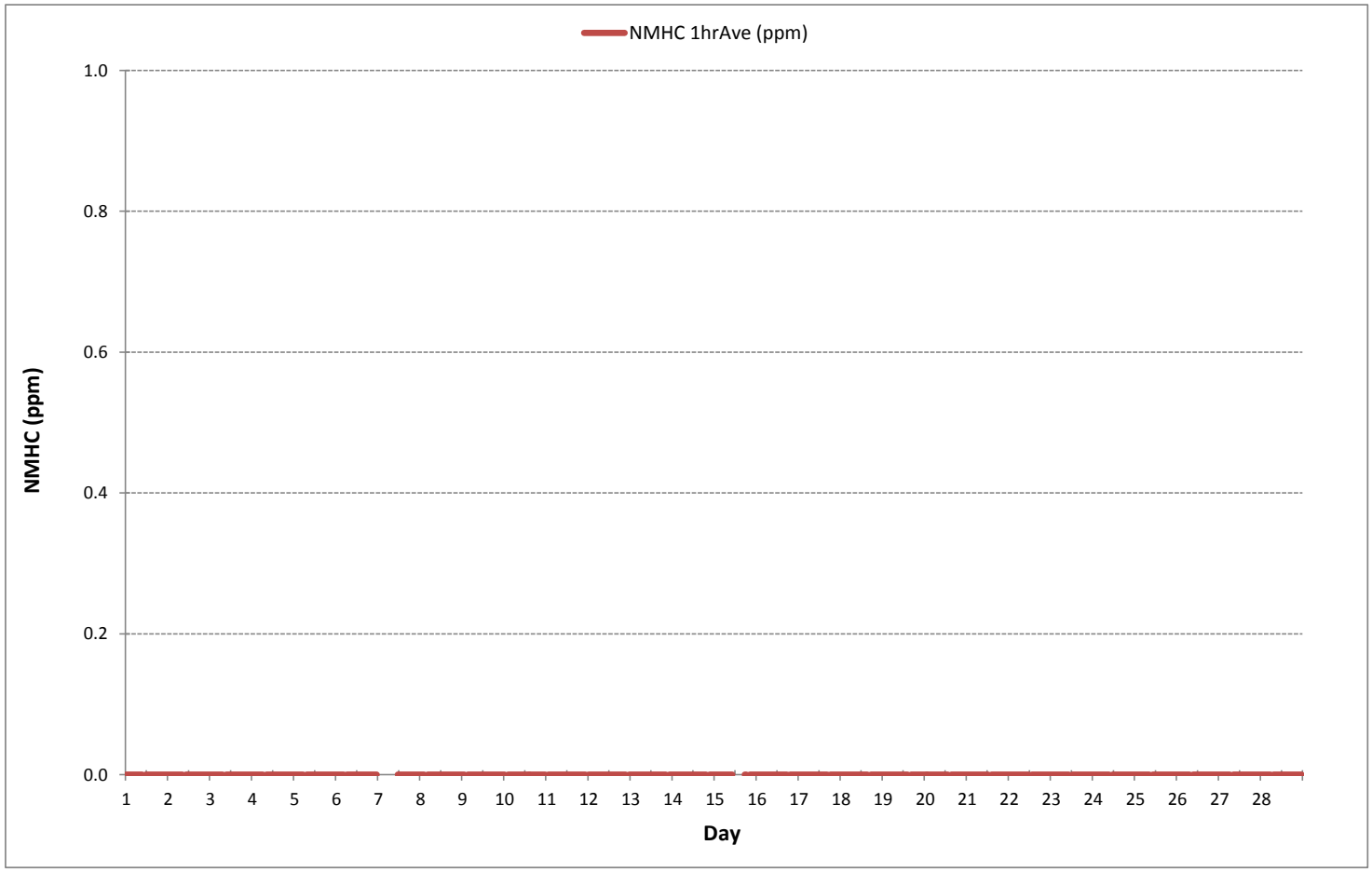
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			0				
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	1	
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:			660	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			98.2	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:			0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



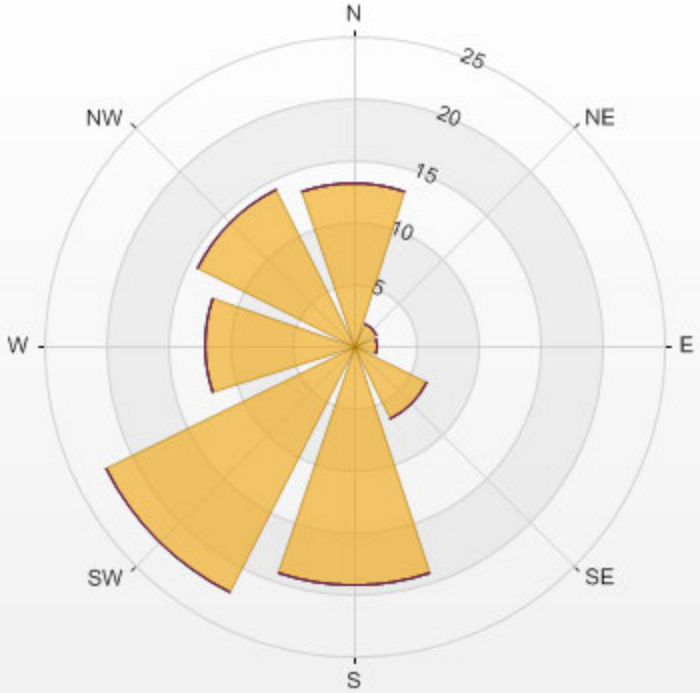
Wind: PRAMP_986
Poll.: PRAMP_986-NMHC[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 8.61% Calm Avg: 0.00 [ppm]

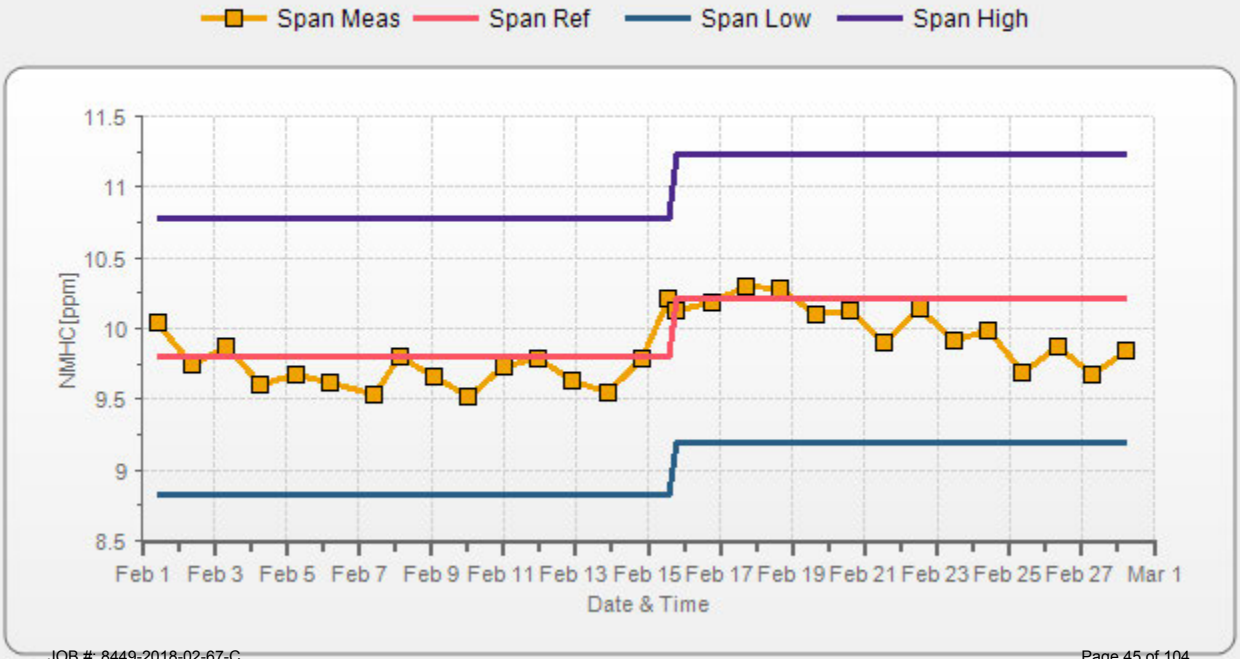
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	13.1	0.0	0.0	0.0	0.0	13.1
NE	2.1	0.0	0.0	0.0	0.0	2.1
E	1.9	0.0	0.0	0.0	0.0	1.9
SE	6.5	0.0	0.0	0.0	0.0	6.5
S	19.3	0.0	0.0	0.0	0.0	19.3
SW	22.3	0.0	0.0	0.0	0.0	22.3
W	12.0	0.0	0.0	0.0	0.0	12.0
NW	14.2	0.0	0.0	0.0	0.0	14.2
Summary	91.4	0.0	0.0	0.0	0.0	91.4

% Icon Classes (ppm)	91 0-0.1	0 0.1-0.3	0 0.3-1	0 1-2	0 >2.0

PRAMP_986 Poll.: PRAMP_986-NMHC[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 8.61% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 18/02 Type: Span



WIND SPEED

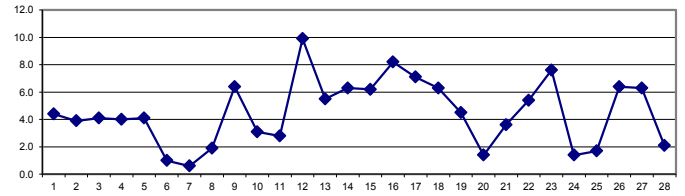
WIND SPEED Hourly Averages (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	3.3	3.4	4.0	3.7	4.0	5.9	4.6	5.7	3.9	4.4	4.4	4.8	5.2	5.7	5.4	5.0	5.2	5.4	6.4	5.7	4.5	2.1	2.3	2.8	2.1	6.4	4.4	24
2	2.3	2.6	2.2	2.2	3.2	2.8	3.3	3.2	3.5	3.7	4.6	5.0	5.4	6.5	6.6	7.9	7.4	7.2	6.1	3.2	3.6	4.9	4.6	5.0	2.2	7.9	3.9	24
3	5.9	6.7	6.4	6.0	4.3	1.1	0.3	1.4	4.8	3.9	7.2	6.9	6.4	6.3	7.8	8.2	7.5	8.5	8.3	8.1	7.6	8.3	7.5	9.1	0.3	9.1	4.1	24
4	9.9	8.3	8.6	8.0	6.8	6.0	5.5	5.2	4.8	5.1	4.9	3.3	4.3	6.3	3.8	5.1	3.0	2.8	1.5	3.0	3.3	1.9	2.0	2.2	1.5	9.9	4.0	24
5	2.2	2.2	3.3	4.7	3.9	5.9	3.2	7.1	8.2	7.0	6.9	7.1	8.4	8.7	7.5	6.5	4.5	3.2	3.1	3.0	1.0	0.9	0.4	4.3	0.4	8.7	4.1	24
6	1.0	0.5	1.4	3.2	2.9	2.4	0.7	2.1	1.7	2.2	3.2	3.0	5.0	6.7	3.9	2.4	0.6	1.0	0.4	0.9	1.2	1.2	1.1	0.8	0.4	6.7	1.0	24
7	0.9	1.2	1.3	2.0	1.1	1.0	0.3	2.2	1.1	1.3	2.4	2.5	1.0	1.6	3.7	3.4	3.3	4.5	2.8	1.9	0.9	1.3	1.7	1.4	0.3	4.5	0.6	24
8	**0.2**	0.8	1.7	1.2	0.3	0.2	0.2	1.4	1.6	1.6	2.0	4.6	5.0	4.7	5.5	3.2	4.0	3.6	3.7	4.5	4.9	4.0	5.6	4.5	**0.2**	5.6	1.9	24
9	4.6	4.2	6.5	4.5	6.2	6.4	6.2	6.1	6.6	7.8	7.9	9.0	8.4	8.7	7.0	7.7	9.0	7.2	6.3	6.4	5.7	5.3	5.1	4.4	4.2	9.0	6.4	24
10	4.8	2.3	4.0	4.1	2.2	2.6	1.8	3.6	2.0	1.7	1.5	4.0	7.3	9.8	8.5	5.9	6.4	6.1	6.9	10.4	10.8	11.0	11.0	8.6	1.5	11.0	3.1	24
11	7.0	5.1	2.9	3.5	0.5	1.1	1.7	1.4	2.3	2.1	2.7	2.1	5.0	3.9	8.9	9.6	8.5	7.4	7.4	7.2	4.9	7.9	5.5	9.4	0.5	9.6	2.8	24
12	12.7	10.0	7.3	8.5	9.9	8.7	10.0	9.8	12.1	10.9	10.7	11.5	11.6	9.8	10.4	9.8	12.0	11.3	10.1	10.8	8.3	8.5	8.8	8.5	7.3	12.7	**9.9**	24
13	7.6	7.0	7.6	6.1	9.0	11.3	13.2	9.5	6.3	7.7	6.3	7.4	5.1	2.6	5.3	8.1	5.5	4.5	8.6	5.7	5.9	11.7	11.5	16.4	2.6	16.4	5.5	24
14	16.5	15.1	14.1	14.1	13.1	13.0	13.7	11.7	9.6	8.8	8.3	5.8	7.2	9.4	5.8	3.7	3.2	2.7	2.0	2.7	3.2	3.2	3.0	3.1	2.0	16.5	6.3	24
15	5.1	4.1	4.3	6.9	5.8	6.2	6.2	7.0	5.6	9.4	10.0	12.9	10.5	11.2	11.3	7.1	7.6	8.5	7.3	6.3	5.5	2.7	4.4	4.3	2.7	12.9	6.2	24
16	5.3	5.1	2.5	5.8	5.6	4.5	6.8	6.7	7.2	6.1	6.1	10.4	12.3	15.0	**19.2**	18.4	18.1	11.9	6.6	6.7	8.2	9.1	9.8	10.3	2.5	**19.2**	8.2	24
17	11.3	12.1	9.7	8.5	2.4	2.5	5.1	8.2	4.6	9.2	10.0	10.4	10.3	13.9	13.6	10.4	12.2	8.7	1.0	1.5	2.4	4.5	5.1	4.1	1.0	13.9	7.1	24
18	7.8	7.6	7.1	10.3	9.1	6.2	7.8	8.7	4.8	7.6	7.3	10.2	8.5	11.3	10.0	7.3	5.5	6.7	4.6	2.4	5.0	6.8	3.7	4.3	2.4	11.3	6.3	24
19	3.3	4.8	5.7	6.2	5.3	5.2	5.8	5.2	4.3	6.3	7.0	7.0	9.2	9.8	8.8	8.0	8.4	3.9	8.2	6.0	4.9	4.4	4.2	5.0	3.3	9.8	4.5	24
20	6.5	6.8	5.7	6.0	5.4	4.0	4.8	5.7	5.0	4.7	6.1	7.3	7.5	8.3	4.5	5.3	6.7	7.0	8.1	6.0	6.1	7.5	7.4	7.9	4.0	8.3	1.4	24
21	7.8	9.2	10.1	11.0	9.9	9.6	7.5	7.5	5.2	4.7	5.6	4.5	4.1	8.7	11.1	9.8	7.4	4.6	4.2	4.0	5.2	6.5	6.2	1.1	1.1	11.1	3.6	24
22	3.8	3.8	9.9	8.0	4.2	2.5	2.6	3.3	4.0	4.4	5.1	6.3	7.2	10.0	9.3	10.8	10.8	10.2	6.0	5.3	3.6	6.4	9.5	10.9	2.5	10.9	5.4	24
23	11.7	12.4	12.4	12.7	10.6	10.9	11.2	11.6	9.5	7.9	8.9	8.8	8.8	8.2	8.7	9.7	6.9	5.7	5.1	1.2	1.7	3.5	3.9	9.1	1.2	12.7	7.6	24
24	10.4	9.0	8.3	8.6	7.6	9.2	7.9	4.7	1.6	2.2	3.7	3.7	4.2	2.4	4.7	5.9	4.5	2.8	3.8	5.3	4.4	5.8	6.8	4.1	1.6	10.4	1.4	24
25	7.2	4.8	4.1	3.5	2.2	1.9	1.4	2.3	4.7	6.2	7.2	7.2	7.0	7.1	5.8	5.7	5.6	4.0	2.6	0.9	2.4	2.5	2.5	3.3	0.9	7.2	1.7	24
26	3.1	4.5	4.3	5.5	4.3	4.2	3.3	4.6	2.8	5.8	8.3	7.2	8.5	10.1	11.4	10.8	8.8	10.7	11.9	9.8	10.8	10.8	13.1	14.6	2.8	14.6	6.4	24
27	12.5	10.5	10.6	8.5	8.3	8.2	9.9	8.2	7.2	6.6	8.5	7.4	7.7	9.7	10.0	10.6	9.5	7.5	8.2	2.4	5.2	2.0	0.7	4.2	0.7	12.5	6.3	24
28	3.2	4.2	4.5	4.3	3.9	5.4	4.5	3.0	3.1	3.1	3.4	4.0	5.6	2.9	4.1	3.8	4.6	3.5	1.1	2.7	1.6	1.6	3.9	5.3	1.1	5.6	2.1	24
HOURLY MAX	16.5	15.1	14.1	14.1	13.1	13.0	13.7	11.7	12.1	10.9	10.7	12.9	12.3	15.0	19.2	18.4	18.1	11.9	11.9	10.8	10.8	11.7	13.1	16.4				
HOURLY AVG	1.6	1.8	2.0	2.0	1.8	2.0	1.6	1.7	1.7	2.2	2.7	3.4	4.2	4.5	4.4	4.3	4.1	3.1	2.5	2.4	1.8	1.5	1.5	1.7				

STATUS FLAG CODES

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

24 HR AVERAGES February 2018

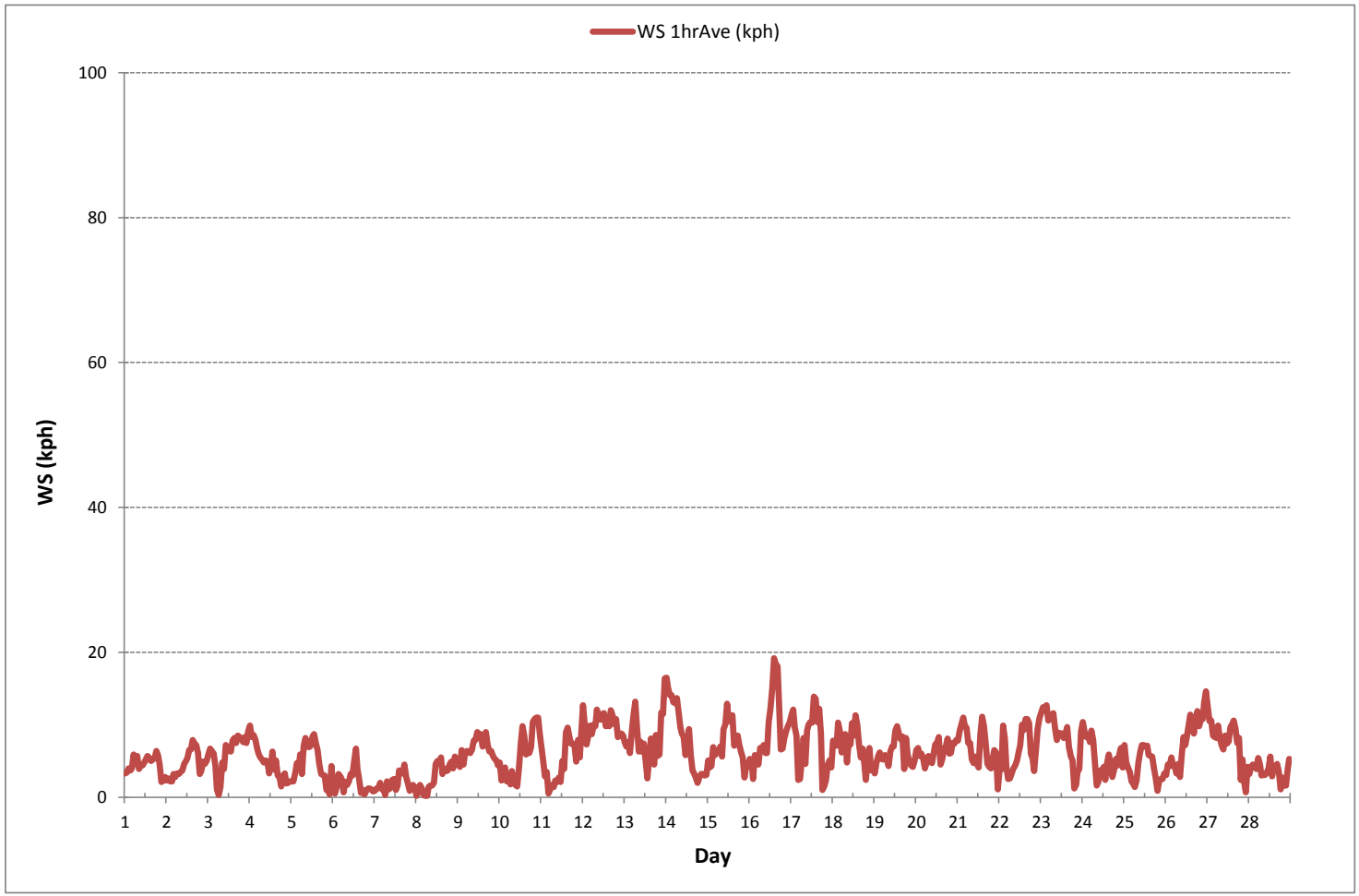


LAST CALIBRATION:	April 5, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		672					
MINIMUM 1-HR AVERAGE	0.2	kph	@ HOUR	0	ON DAY	8	
MAXIMUM 1-HR AVERAGE:	19.2	kph	@ HOUR	14	ON DAY	16	
MAXIMUM 24-HR AVERAGE:	9.9	kph			ON DAY	12	
			OPERATIONAL TIME:			672	hrs
MONTHLY CALIBRATION TIME:	0	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	3.3		MONTHLY AVERAGE:			2.4	kph

WIND SPEED Hourly Averages (WS kph)



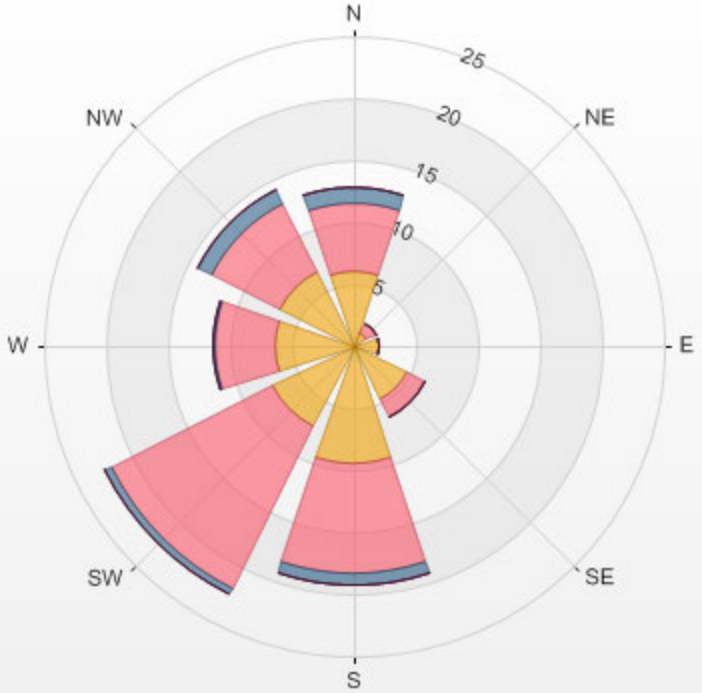
Wind: PRAMP_986
Monitor: WSP [kph]
Monthly: 18/02
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.38%

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	6.1	5.5	1.2	0.0	0.0	0.0	12.8
NE	1.2	0.9	0.0	0.0	0.0	0.0	2.1
E	2.1	0.0	0.0	0.0	0.0	0.0	2.1
SE	4.9	1.5	0.0	0.0	0.0	0.0	6.4
S	9.5	8.9	0.9	0.0	0.0	0.0	19.3
SW	7.3	14.6	0.6	0.0	0.0	0.0	22.5
W	6.4	4.8	0.2	0.0	0.0	0.0	11.3
NW	6.7	6.1	1.3	0.0	0.0	0.0	14.1
Summary	44.2	42.3	4.2	0.0	0.0	0.0	90.6

% Icon Classes (kph)	44 1.8-6.0	42 6.0-12.0	4 12.0-20.0	0 20.0-29.0	0 29.0-39.0	0 >39.0

PRAMP_986 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 9.38% Calm Wind Avg Speed: 1.11(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	NNW	NNW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	24
2	N	N	NNE	NE	NE	NE	NE	ENE	ENE	E	E	ENE	NE	ENE	NE	NE	NE	NE	NE	NNE	N	NNW	NNW	NNW	NE	24
3	NNW	NNW	NNW	NNW	NNW	NW	NNW	NW	NW	WNW	WNW	W	W	W	WSW	SW	SW	SSW	SW	SSW	SSW	SW	SSW	SSW	WSW	24
4	SSW	SSW	SSW	SSW	SSE	S	S	S	S	S	S	S	SW	SSW	S	NW	WNW	W	SW	S	SE	SE	SE	SSE	S	24
5	S	SSE	SSE	S	S	S	SSE	S	SSE	SSE	SSW	S	SSW	SSW	SW	SSW	SSW	SSW	SW	SW	SSW	NNW	W	WNW	S	24
6	NNW	SSE	NW	NNW	WNW	NW	S	SSE	SSE	S	SW	WSW	W	W	WSW	SSW	SSW	WNW	SE	E	ESE	E	E	ESE	WSW	24
7	ESE	ESE	SE	ENE	S	ESE	ESE	ESE	ESE	ESE	ESE	SSE	WSW	W	NW	N	N	NNE	NNE	SSE	ESE	ESE	ESE	ESE	ENE	24
8	E	ESE	SSE	SSE	SE	SE	S	SSE	ESE	SE	WNW	WNW	WNW	WNW	WNW	W	WSW	SW	SW	SSW	SSW	SSW	SSW	S	SW	24
9	SSW	SSW	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	S	SSE	SSE	S	S	S	24
10	S	S	S	SSW	SW	SW	SW	S	SW	SW	SSW	WNW	WNW	NNW	NNW	NNW	N	NNE	N	N	N	N	N	N	NNW	24
11	N	N	NNW	NNW	ESE	S	SE	ESE	ESE	ESE	SSE	SSE	W	SW	SSW	SSW	SSW	S	S	S	SSE	SSE	S	S	S	24
12	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	24
13	SW	SW	SW	WSW	W	W	W	W	SW	SSW	SW	WSW	WSW	SW	WSW	W	WSW	WSW	W	W	W	N	NNE	N	W	24
14	N	N	N	N	N	NNW	NNW	NNW	N	N	NNW	NNW	NNW	NW	NNW	NW	W	WSW	SSW	S	SSW	S	S	SE	NNW	24
15	SE	SSE	S	S	S	SSW	SSE	SE	SSE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW	WSW	WSW	W	WSW	SSW	24
16	WSW	WSW	W	NW	NNW	NNW	N	NNW	NNW	NNW	N	NNW	NW	NW	NW	NW	WNW	NW	W	W	W	WNW	WNW	WNW	NW	24
17	WNW	WNW	WNW	WNW	WNW	W	WNW	NW	WNW	WNW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	W	WSW	W	WNW	W	W	NW	24
18	WNW	WNW	WNW	NW	NW	WNW	NW	NW	WNW	WNW	W	WNW	W	NW	WNW	WNW	SW	W	NW	SW	SW	WSW	WSW	S	WNW	24
19	SSW	SW	SW	SW	SW	SSW	SW	SW	SW	WSW	WSW	SW	WSW	WSW	SW	SW	SW	W	NNW	NNW	NNW	NW	NNW	N	WSW	24
20	N	N	N	NNW	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NW	WSW	SSW	SSW	SSE	SSE	SSE	SSE	SE	SE	NNW	24
21	SSE	SSE	SSE	S	S	SSW	S	SSW	SSW	SSW	SSW	SW	W	WNW	NW	NW	NW	W	WSW	WSW	W	W	NW	NNW	SW	24
22	W	W	WNW	WNW	WNW	SSW	S	S	S	S	S	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	S	SSE	S	SSW	SSW	SSW	24
23	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	W	SW	WSW	SW	W	WNW	SW	24
24	NNW	N	NNW	NNW	N	NNW	NNW	N	NW	N	N	WNW	WNW	SW	SE	S	SSW	SSW	S	SSE	SE	SE	SE	SE	N	24
25	SE	SSW	SSE	S	WSW	NW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NW	NW	NW	NNW	SE	ESE	ESE	ESE	ESE	NNW	24
26	ESE	ESE	SE	SE	ESE	ESE	ESE	SE	S	SW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SW	SW	SSW	24
27	SW	SW	SW	SSW	SW	SW	SW	SW	SW	WSW	W	WNW	WSW	W	WSW	WSW	WSW	SSW	S	S	N	NE	NNW	SSE	SW	24
28	ESE	ESE	SE	ESE	SE	SE	SE	SE	ESE	SE	SSW	SSW	S	SSE	WNW	W	SW	SW	SE	ENE	ESE	ENE	ENE	ENE	SE	24

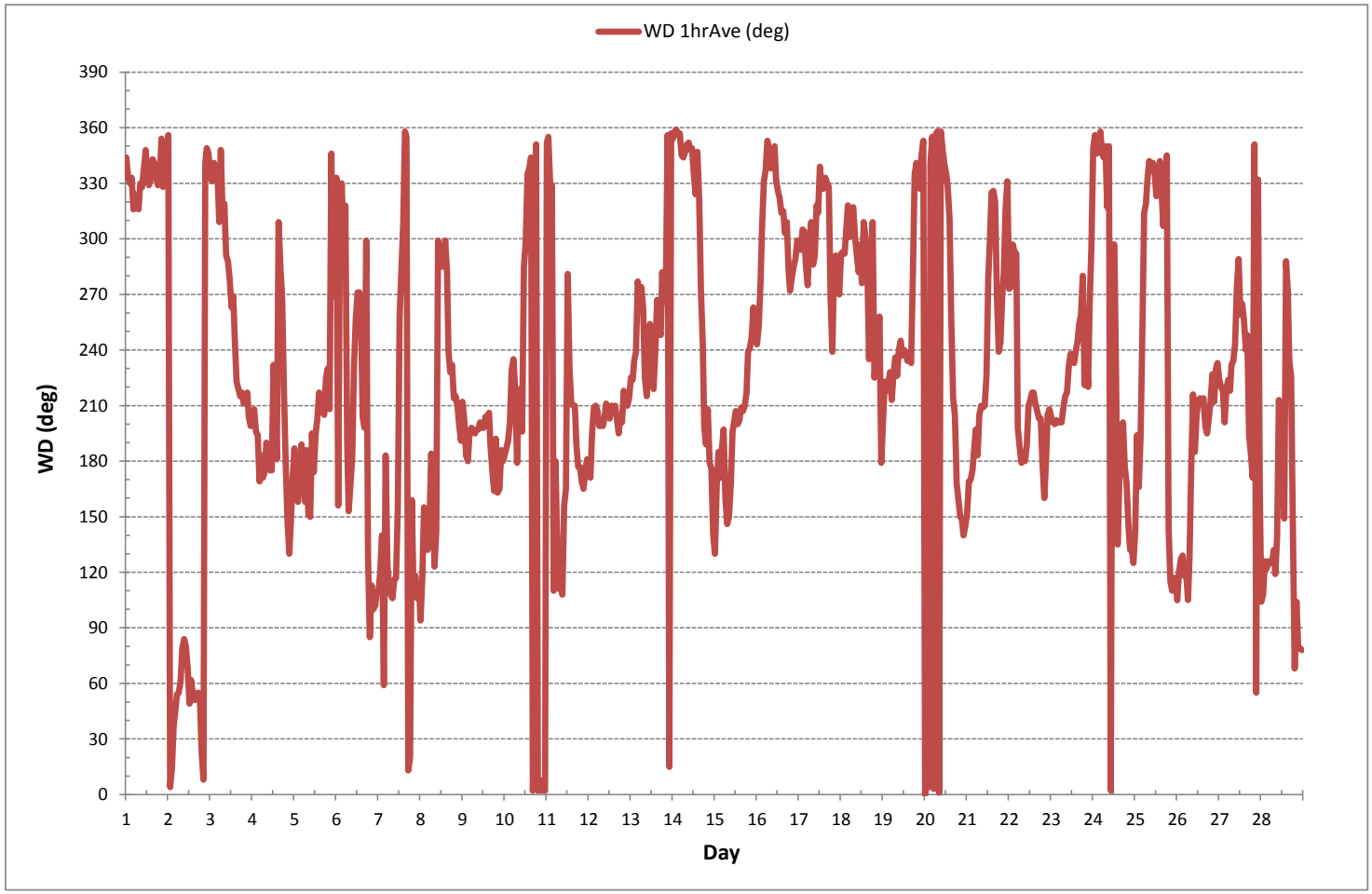
STATUS FLAG CODES

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, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	672	hrs
STANDARD DEVIATION:	84		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	246 (WSW)	

WIND DIRECTION Hourly Averages (WD)



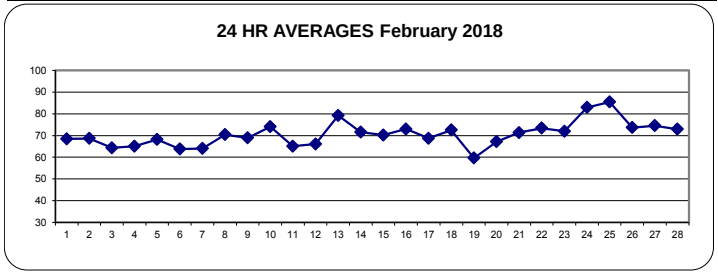
RELATIVE HUMIDITY

RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	72	72	72	72	72	72	72	72	71	71	70	66	65	64	63	63	65	66	65	66	68	68	68	68	63	72	68	24
2	69	69	68	68	68	68	69	69	68	68	67	65	65	65	67	68	69	69	71	71	72	72	72	71	65	72	69	24
3	71	71	70	68	67	64	59	57	61	60	66	65	62	61	59	59	60	63	65	67	67	67	67	67	57	71	64	24
4	67	67	67	67	66	66	66	65	66	65	65	63	62	60	59	60	61	64	66	67	67	68	69	69	59	69	65	24
5	68	70	71	71	71	71	68	69	69	69	71	69	68	64	62	62	62	68	71	68	68	70	67	70	62	71	68	24
6	68	64	63	64	63	63	63	62	60	65	70	68	61	55	55	59	61	65	68	68	67	67	66	65	55	70	64	24
7	65	66	66	68	68	68	68	68	67	65	63	61	54	53	57	55	57	66	69	68	68	66	65	65	53	69	64	24
8	65	65	66	69	70	71	72	73	73	72	72	73	71	70	70	69	67	68	68	71	73	74	74	73	65	74	70	24
9	74	73	72	71	72	72	72	72	72	71	71	68	65	63	60	60	61	65	69	68	69	71	72	71	60	74	69	24
10	72	73	73	70	69	68	73	76	77	76	74	74	78	74	75	78	81	82	82	80	69	70	65	69	65	82	74	24
11	69	72	72	68	64	63	61	59	58	60	64	66	64	58	55	58	58	65	69	71	71	71	72	73	55	73	65	24
12	71	71	71	70	70	71	71	69	68	65	61	59	59	60	62	60	63	66	66	65	64	67	68	69	59	71	66	24
13	69	71	71	71	67	67	65	66	69	72	69	72	79	79	75	82	90	87	90	99	**100**	100	97	93	65	**100**	79	24
14	88	83	80	79	78	77	74	73	72	70	67	65	64	66	65	66	66	67	68	71	73	72	68	66	64	88	72	24
15	65	67	70	70	69	73	71	68	70	74	76	72	67	64	64	64	66	68	70	72	72	71	77	85	64	85	70	24
16	88	89	89	88	89	88	86	82	81	79	76	73	72	71	73	67	58	56	58	57	58	57	56	60	56	89	73	24
17	63	66	69	69	72	74	76	75	75	70	66	65	58	58	62	59	55	62	69	73	77	77	78	81	55	81	69	24
18	79	79	79	80	80	80	79	77	77	77	73	69	66	65	68	68	70	75	67	71	66	60	64	71	60	80	73	24
19	73	69	67	66	66	71	71	65	65	61	56	50	48	47	46	**44**	45	48	46	55	64	67	67	73	**44**	73	60	24
20	76	77	75	75	75	75	74	70	67	64	60	57	57	57	54	55	55	59	66	68	71	73	75	76	54	77	67	24
21	75	72	70	71	69	66	65	66	65	67	71	71	73	73	67	63	61	65	69	73	79	84	87	90	61	90	71	24
22	89	87	86	85	84	80	82	83	84	84	81	67	61	59	57	58	58	61	67	74	75	77	63	59	57	89	73	24
23	58	57	57	58	58	58	59	59	62	63	62	63	62	65	66	74	87	93	95	96	95	92	92	95	57	96	72	24
24	95	93	91	89	87	88	86	85	85	83	78	77	73	69	71	72	72	79	84	84	84	87	89	88	69	95	83	24
25	89	92	92	93	93	93	93	93	91	88	85	82	82	80	79	79	79	82	86	83	81	79	80	77	77	93	**85**	24
26	77	78	81	82	83	85	85	87	89	90	88	81	72	67	62	58	60	63	62	61	57	63	63	74	57	90	74	24
27	82	84	71	70	67	66	68	68	69	67	65	74	62	63	63	53	68	89	91	93	90	90	89	87	53	93	75	24
28	86	87	84	83	83	82	81	81	82	85	85	69	59	51	52	52	45	48	61	72	76	78	84	83	45	87	73	24
HOURLY MAX	95	93	92	93	93	93	93	93	91	90	88	82	82	80	79	82	90	93	95	99	100	100	97	95				
HOURLY AVG	74	74	74	73	73	73	72	72	72	71	70	68	65	64	63	63	64	68	71	73	73	74	73	75				

STATUS FLAG CODES

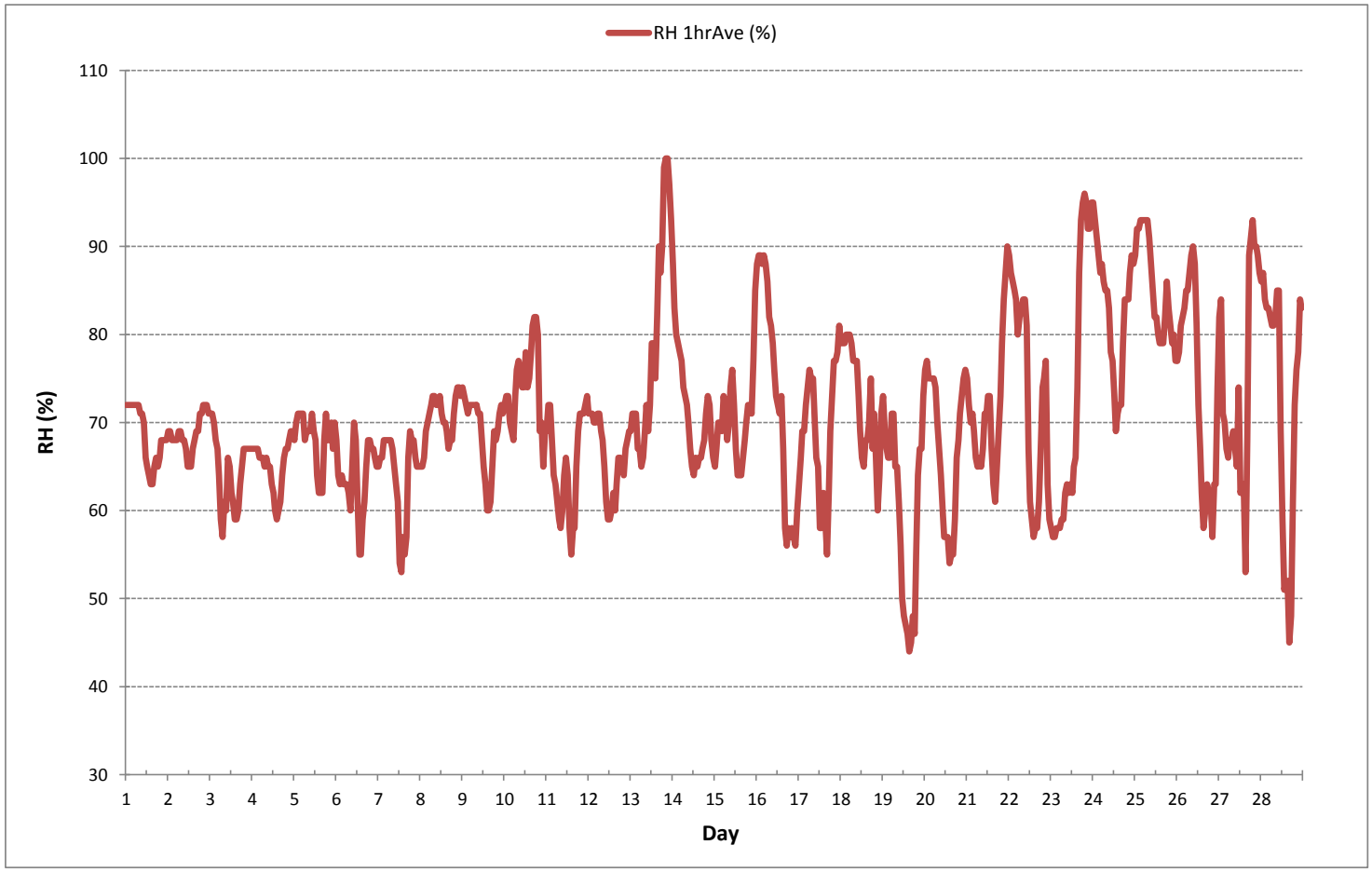
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	44	%	@ HOUR	15	ON DAY	19	
MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR	20	ON DAY	13	
MAXIMUM 24-HR AVERAGE:	85	%			ON DAY	25	
			OPERATIONAL TIME:			672	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	10		MONTHLY AVERAGE:			71	%

RELATIVE HUMIDITY Hourly Averages (RH %)



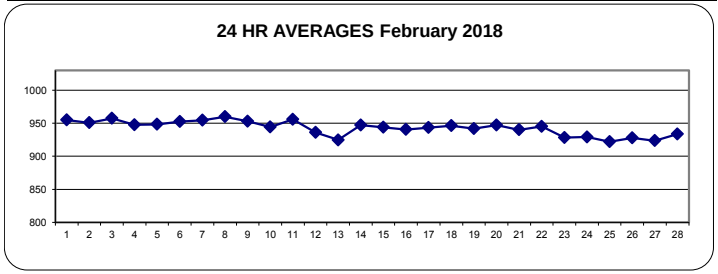
BAROMETRIC PRESSURE

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	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955	956	955	955	955	955	955	955	956	955	24
2	954	954	954	953	953	952	951	951	950	950	950	949	949	948	948	948	949	949	949	950	950	951	952	953	948	954	951	24
3	954	955	955	957	958	959	960	961	**962**	962	961	961	960	959	959	958	958	957	956	955	955	954	953	952	952	**962**	958	24
4	950	950	949	948	948	948	948	947	947	947	946	946	945	945	945	945	945	946	948	949	950	950	951	951	945	951	948	24
5	951	952	952	952	952	952	951	952	951	950	949	947	946	945	944	944	944	944	944	945	946	947	948	950	944	952	948	24
6	951	952	953	954	954	955	956	956	956	956	955	954	953	952	952	951	950	950	950	950	950	949	949	950	949	956	952	24
7	950	951	951	951	952	952	953	954	954	955	955	955	955	955	955	955	955	955	956	956	957	957	958	958	950	958	954	24
8	958	958	958	958	959	959	959	959	960	960	961	961	961	961	961	961	961	961	961	960	960	960	959	959	958	961	**960**	24
9	959	958	958	958	957	957	956	956	956	955	955	954	953	953	952	951	951	950	949	948	948	947	946	945	945	959	953	24
10	945	944	944	943	943	943	943	943	943	943	943	943	942	942	942	943	943	943	944	945	947	948	950	952	942	952	944	24
11	953	954	955	956	957	959	959	960	960	960	959	958	957	957	956	955	955	955	954	954	953	952	951	950	950	960	956	24
12	948	946	945	944	942	942	940	939	939	937	937	936	935	935	934	933	932	932	931	929	928	928	927	926	926	948	936	24
13	926	926	926	926	926	925	925	925	925	925	924	924	924	923	923	923	923	923	923	923	924	925	927	929	923	929	925	24
14	931	934	937	939	941	943	945	947	948	949	950	950	951	950	950	950	950	951	951	952	951	952	952	953	931	953	947	24
15	953	952	951	950	950	950	949	949	948	947	945	944	943	942	940	939	939	938	937	937	937	937	937	937	937	953	944	24
16	936	936	936	936	936	936	937	938	939	940	941	942	942	942	942	943	943	944	944	944	944	944	944	944	936	944	941	24
17	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	942	942	942	942	943	943	943	943	943	942	944	943	24
18	944	944	945	945	946	946	947	948	948	948	948	948	948	948	947	947	947	946	946	946	946	946	945	945	944	948	946	24
19	945	944	943	943	942	942	942	942	941	941	941	941	941	940	940	940	940	940	941	941	942	942	943	943	940	945	942	24
20	944	945	945	946	946	947	948	949	949	950	950	950	949	949	948	948	948	947	947	947	946	945	944	943	943	950	947	24
21	942	941	940	939	938	938	937	937	937	937	937	938	938	939	940	940	941	942	942	943	943	944	945	945	937	945	940	24
22	946	946	947	947	947	948	948	948	948	948	948	948	947	947	946	945	944	943	943	942	941	940	938	937	937	948	945	24
23	936	935	934	932	931	930	929	928	928	927	927	927	926	926	926	926	926	926	926	926	926	926	926	926	926	936	928	24
24	927	928	929	930	931	931	932	932	933	933	933	932	932	931	930	930	929	928	927	926	925	924	923	921	921	933	929	24
25	921	920	919	**918**	918	918	918	918	918	919	920	921	921	922	923	924	924	925	926	927	927	928	929	929	**918**	929	922	24
26	930	930	930	930	930	930	930	930	930	930	930	930	929	929	928	927	926	925	925	924	923	923	922	922	922	930	928	24
27	921	921	921	920	920	920	920	921	921	922	922	923	924	925	925	925	926	927	926	927	927	927	928	928	920	928	924	24
28	928	928	929	929	930	930	931	931	932	932	933	933	934	934	934	935	935	936	937	937	938	939	939	939	928	939	933	24
HOURLY MAX	959	958	958	958	959	959	960	961	962	962	961	961	961	961	961	961	961	961	961	960	960	960	959	959				
HOURLY AVG	943	943	943	943	943	943	943	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	942	942				

STATUS FLAG CODES

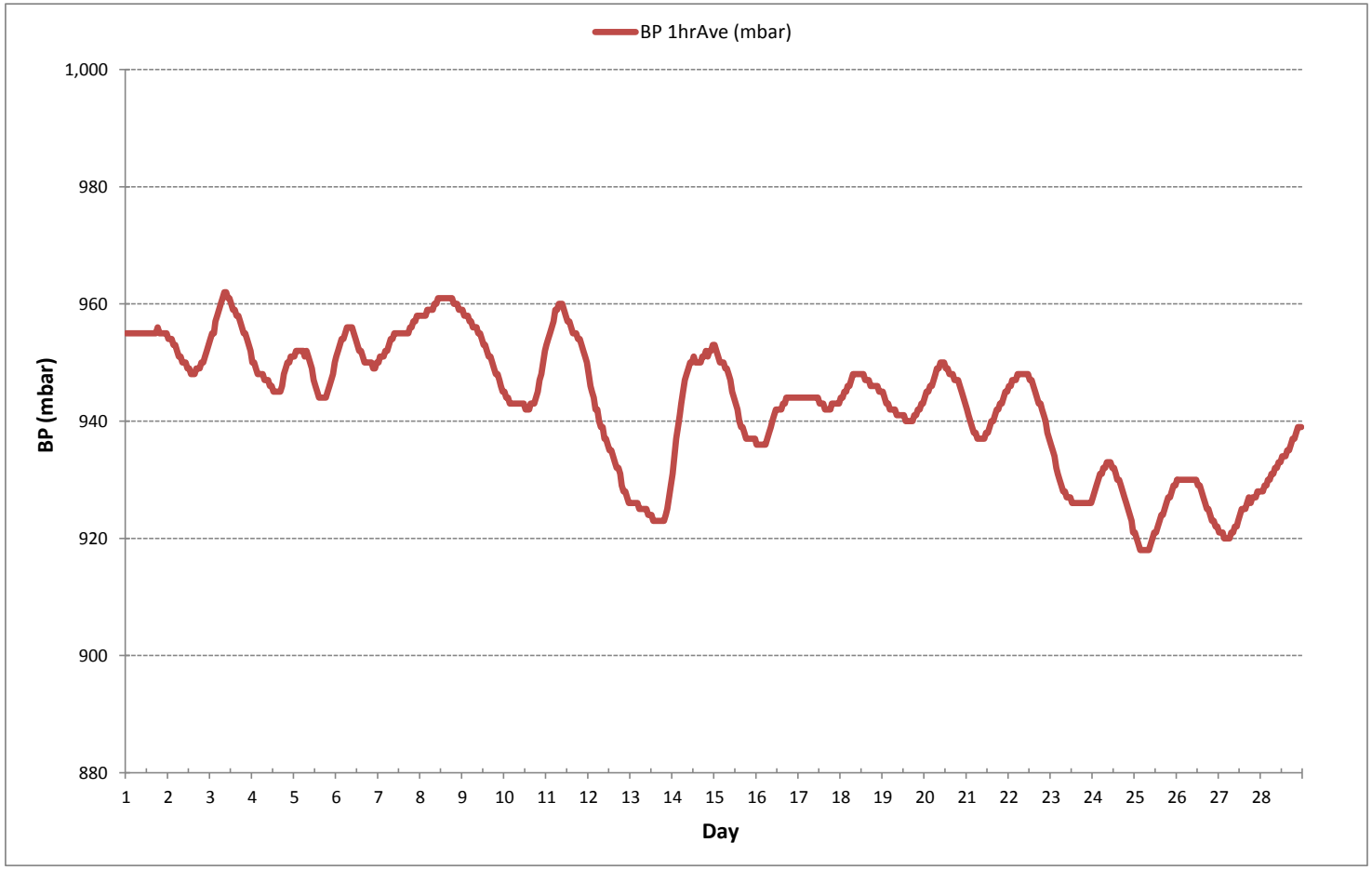
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	918	mbar	@ HOUR	3	ON DAY	25	
MAXIMUM 1-HR AVERAGE:	962	mbar	@ HOUR	8	ON DAY	3	
MAXIMUM 24-HR AVERAGE:	960	mbar			ON DAY	8	
			OPERATIONAL TIME:			672	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	11		MONTHLY AVERAGE:			943	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

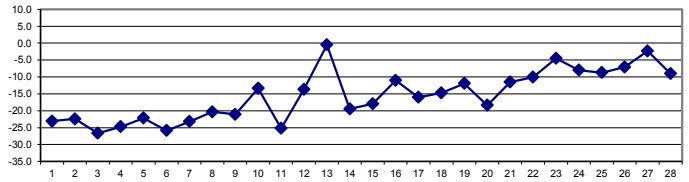
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	-21.9	-22.2	-22.3	-22.5	-23.2	-23.3	-23.9	-24.1	-24.5	-24.1	-23.1	-22.2	-22.1	-22.0	-22.2	-22.3	-22.7	-23.1	-23.5	-23.7	-23.8	-23.8	-23.7	-23.9	-24.5	-21.9	-23.1	24
2	-23.9	-23.9	-23.9	-24.0	-23.9	-23.8	-23.6	-23.5	-23.3	-22.9	-22.4	-21.7	-21.2	-21.1	-21.0	-21.1	-21.2	-21.4	-21.5	-21.5	-21.4	-21.9	-22.1	-22.2	-24.0	-21.0	-22.4	24
3	-22.5	-22.8	-23.3	-24.8	-26.8	-29.7	-33.7	**-36.0**	-34.0	-33.5	-27.3	-25.0	-24.0	-23.1	-22.5	-22.6	-23.4	-25.5	-26.4	-26.6	-26.6	-26.4	-26.4	-26.1	**-36.0**	-22.5	-26.6	24
4	-25.9	-25.7	-25.7	-26.1	-27.2	-27.9	-28.2	-28.7	-28.7	-27.9	-26.6	-23.5	-21.5	-20.8	-19.4	-19.5	-20.9	-23.6	-25.0	-26.5	-25.6	-23.9	-22.7	-22.1	-28.7	-19.4	-24.7	24
5	-23.4	-24.5	-23.4	-23.3	-24.5	-25.0	-27.8	-27.6	-27.1	-26.3	-22.3	-19.4	-17.0	-16.3	-15.9	-16.1	-16.4	-19.2	-20.1	-19.7	-20.9	-23.5	-26.1	-26.1	-27.8	-15.9	-22.2	24
6	-26.6	-29.9	-31.3	-30.5	-31.2	-32.1	-32.5	-33.1	-34.4	-30.6	-23.6	-19.1	-17.5	-16.5	-16.6	-17.7	-19.4	-22.0	-23.5	-25.1	-26.1	-26.4	-27.2	-28.0	-34.4	-16.5	-25.9	24
7	-28.6	-27.2	-26.3	-25.3	-25.3	-24.8	-24.8	-24.6	-25.7	-26.7	-23.8	-18.9	-15.5	-14.6	-14.6	-14.2	-16.7	-19.5	-22.5	-25.5	-26.8	-28.1	-28.6	-28.7	-28.7	-14.2	-23.2	24
8	-28.8	-27.8	-26.4	-23.9	-22.5	-21.5	-20.6	-20.1	-20.0	-19.1	-18.2	-17.2	-16.6	-16.3	-15.9	-15.6	-15.4	-16.3	-17.6	-19.7	-20.5	-21.7	-22.5	-24.0	-28.8	-15.4	-20.3	24
9	-22.6	-23.1	-24.2	-24.7	-23.9	-23.3	-23.3	-23.5	-23.0	-22.0	-21.1	-19.7	-18.4	-18.1	-16.7	-17.0	-17.6	-19.3	-19.7	-19.2	-22.0	-22.6	-20.4	-20.1	-24.7	-16.7	-21.1	24
10	-20.8	-19.8	-18.4	-16.5	-15.1	-15.1	-17.0	-17.9	-15.1	-12.4	-10.6	-9.6	-9.4	-8.2	-8.2	-8.3	-8.8	-9.7	-10.3	-11.0	-12.5	-13.7	-15.8	-17.6	-20.8	-8.2	-13.4	24
11	-19.5	-21.1	-23.8	-28.0	-31.3	-32.8	-33.6	-34.9	-35.7	-33.3	-27.7	-21.5	-19.9	-18.4	-18.1	-18.7	-19.2	-21.7	-23.9	-24.7	-25.5	-24.2	-25.0	-22.6	-35.7	-18.1	-25.2	24
12	-21.9	-21.3	-20.2	-19.1	-19.4	-20.2	-20.3	-19.6	-19.1	-17.4	-15.2	-13.7	-11.8	-10.4	-9.7	-8.2	-8.5	-9.2	-8.8	-7.9	-7.2	-7.2	-6.7	-5.7	-21.9	-5.7	-13.7	24
13	-4.6	-3.7	-3.0	-2.4	-0.8	-0.1	0.5	0.4	-0.3	-0.7	0.3	0.7	0.7	1.4	**2.3**	1.7	1.4	1.5	0.8	0.2	0.1	-1.2	-2.7	-5.0	-5.0	**2.3**	**-0.5**	24
14	-8.2	-10.5	-12.6	-14.2	-15.8	-17.2	-19.1	-20.2	-20.7	-20.8	-20.3	-20.5	-19.3	-18.6	-18.1	-17.4	-16.9	-19.9	-24.5	-25.9	-23.8	-24.8	-27.8	-30.1	-30.1	-8.2	-19.5	24
15	-29.8	-28.6	-26.3	-25.8	-26.7	-23.4	-24.4	-27.3	-26.0	-21.5	-17.4	-15.1	-13.7	-12.7	-12.4	-11.6	-11.6	-11.6	-11.6	-11.2	-11.3	-11.0	-10.2	-9.8	-29.8	-9.8	-18.0	24
16	-8.8	-7.9	-8.1	-8.7	-8.9	-9.7	-10.3	-11.3	-12.4	-12.8	-12.4	-11.4	-11.0	-10.5	-10.0	-9.9	-10.1	-11.4	-12.5	-13.0	-13.3	-13.3	-13.4	-13.8	-13.8	-7.9	-11.0	24
17	-13.8	-14.0	-15.8	-15.7	-20.6	-23.2	-21.5	-18.4	-20.8	-14.9	-13.7	-13.2	-12.6	-12.6	-12.6	-12.6	-12.2	-13.5	-17.2	-20.4	-19.3	-16.1	-14.9	-15.1	-23.2	-12.2	-16.0	24
18	-14.3	-14.1	-14.1	-14.1	-16.3	-15.6	-15.7	-17.0	-19.4	-17.0	-15.5	-14.4	-13.4	-12.9	-12.5	-12.1	-12.1	-12.6	-14.1	-17.0	-14.3	-12.9	-15.0	-17.7	-19.4	-12.1	-14.8	24
19	-18.7	-15.6	-15.3	-14.6	-14.2	-14.1	-14.0	-13.9	-13.7	-13.0	-12.0	-10.2	-9.3	-8.5	-8.0	-7.6	-7.8	-9.6	-9.3	-10.3	-12.6	-12.2	-10.9	-11.2	-18.7	-7.6	-11.9	24
20	-12.1	-14.0	-15.4	-16.9	-17.7	-18.5	-18.9	-19.6	-20.1	-20.1	-19.5	-18.9	-18.0	-17.1	-16.0	-16.2	-16.1	-17.4	-20.4	-21.4	-21.5	-22.7	-21.8	-21.0	-22.7	-12.1	-18.4	24
21	-19.3	-17.2	-17.3	-17.8	-16.2	-15.2	-15.3	-15.3	-15.0	-13.4	-11.4	-9.6	-9.1	-8.6	-7.6	-7.0	-7.0	-7.6	-8.9	-9.1	-7.9	-7.4	-6.9	-6.8	-19.3	-6.8	-11.5	24
22	-8.0	-10.4	-9.6	-11.4	-13.7	-18.1	-16.8	-15.1	-13.8	-11.5	-9.5	-5.9	-4.7	-4.5	-4.2	-4.6	-5.0	-5.9	-8.9	-12.6	-15.2	-13.8	-9.6	-9.0	-18.1	-4.2	-10.1	24
23	-9.2	-9.4	-9.7	-9.4	-9.1	-9.2	-8.1	-6.6	-6.5	-5.7	-3.8	-2.6	-1.2	-0.4	-0.3	-0.7	-1.4	-1.7	-1.9	-2.2	-2.2	-2.4	-2.5	-2.9	-9.7	-0.3	-4.5	24
24	-4.0	-5.3	-6.6	-7.3	-8.1	-8.2	-9.2	-11.3	-12.4	-9.9	-8.4	-7.9	-7.1	-6.0	-5.9	-5.9	-6.2	-6.9	-7.7	-8.1	-9.8	-10.8	-8.9	-9.5	-12.4	-4.0	-8.0	24
25	-8.6	-6.0	-5.6	-5.1	-4.6	-5.3	-6.1	-6.4	-7.6	-7.8	-7.6	-6.9	-6.4	-6.0	-6.0	-6.1	-6.3	-7.8	-9.8	-14.0	-16.4	-17.7	-17.2	-18.6	-18.6	-4.6	-8.7	24
26	-20.1	-19.9	-16.6	-15.0	-14.0	-12.5	-12.6	-10.2	-8.3	-6.9	-6.1	-5.2	-4.5	-3.3	-1.9	-1.1	-1.4	-2.0	-2.2	-2.0	-1.0	-1.4	-1.0	-1.2	-20.1	-1.0	-7.1	24
27	-1.6	-2.0	-1.3	-2.7	-2.6	-2.0	-2.0	-2.3	-2.8	-1.9	-1.0	-1.1	0.5	0.6	1.3	2.2	0.0	-1.6	-2.9	-3.1	-2.7	-5.5	-9.9	-11.9	-11.9	2.2	-2.3	24
28	-12.6	-12.5	-14.4	-14.7	-14.6	-15.4	-16.0	-16.2	-15.1	-10.9	-5.7	-3.1	-1.2	0.8	0.1	-0.3	1.2	-0.7	-6.7	-12.2	-13.8	-14.6	-12.7	-5.7	-16.2	1.2	-9.0	24
HOURLY MAX	-1.6	-2.0	-1.3	-2.4	-0.8	-0.1	0.5	0.4	-0.3	-0.7	0.3	0.7	0.7	1.4	2.3	2.2	1.4	1.5	0.8	0.2	0.1	-1.2	-1.0	-1.2				
HOURLY AVG	-17.1	-17.2	-17.2	-17.3	-17.8	-18.1	-18.5	-18.7	-18.8	-17.3	-15.2	-13.5	-12.3	-11.6	-11.2	-11.1	-11.5	-12.8	-14.3	-15.5	-15.9	-16.1	-16.2	-16.3				

STATUS FLAG CODES

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

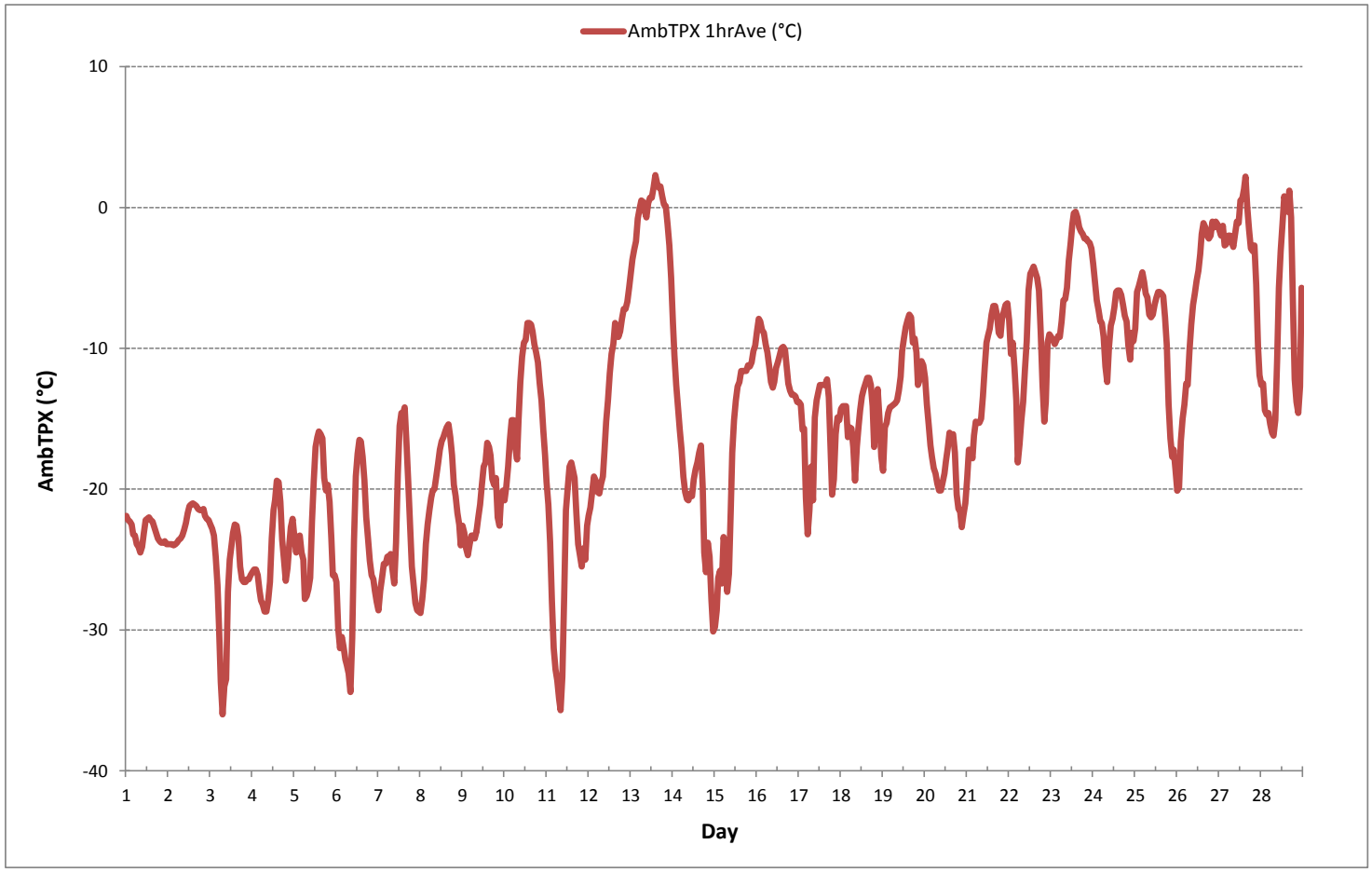
24 HR AVERAGES February 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-36.0	°C	@ HOUR	7	ON DAY	3	
MAXIMUM 1-HR AVERAGE:	2.3	°C	@ HOUR	14	ON DAY	13	
MAXIMUM 24-HR AVERAGE:	-0.5	°C			ON DAY	13	
			OPERATIONAL TIME:			672	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	8.4		MONTHLY AVERAGE:			-15.5	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



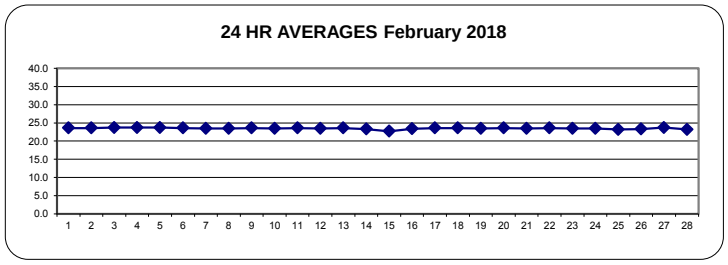
STATION TEMPERATURE

STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	23.6	23.7	23.5	23.7	23.6	23.6	23.7	23.6	23.7	23.7	23.7	23.7	23.6	23.5	23.6	23.7	23.6	23.6	23.5	23.6	23.7	23.6	23.8	23.6	23.5	23.8	23.6	24
2	23.7	23.7	23.6	23.7	23.6	23.6	23.6	23.7	23.6	23.6	23.7	23.6	23.5	23.5	23.4	23.5	23.3	23.5	23.5	23.5	23.7	23.5	23.8	23.5	23.3	23.8	23.6	24
3	23.7	23.5	23.8	23.7	23.7	23.7	23.6	23.7	23.7	23.8	23.7	23.8	23.9	23.7	23.9	23.8	23.6	23.7	23.6	23.7	23.7	23.7	23.7	23.8	23.5	23.9	**23.7**	24
4	23.7	23.7	23.7	23.7	23.8	23.8	23.6	23.8	23.8	23.7	23.7	23.8	23.9	23.7	23.8	23.7	23.6	23.7	23.7	23.7	23.6	23.7	23.8	23.7	23.6	23.9	23.7	24
5	23.6	23.7	23.6	23.6	23.7	23.6	23.7	23.7	23.6	23.8	23.8	23.8	23.7	23.8	23.6	23.7	23.7	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.8	23.7	24
6	23.7	23.6	23.6	23.5	23.7	23.6	23.7	23.6	23.7	23.6	23.8	23.8	23.8	23.7	23.7	23.6	23.5	23.5	23.6	23.6	23.5	23.6	23.6	23.6	23.5	23.8	23.6	24
7	23.6	23.7	23.6	23.7	23.8	23.7	23.7	23.7	21.9	23.2	23.5	23.7	23.7	23.5	23.5	23.6	23.5	23.3	23.5	23.5	23.6	23.5	23.6	23.6	21.9	23.8	23.5	24
8	23.6	23.7	23.5	23.6	23.6	23.5	23.7	23.5	23.6	23.6	23.5	23.5	23.4	23.4	23.6	23.4	23.4	23.6	23.4	23.4	23.5	23.4	23.5	23.5	23.4	23.7	23.5	24
9	23.6	23.6	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7	23.6	23.7	23.7	23.6	23.7	23.5	23.6	23.5	23.5	23.5	23.6	23.5	23.7	23.5	23.7	23.6	24
10	23.6	23.5	23.7	23.6	23.6	23.6	23.6	23.5	23.6	23.7	23.6	23.5	23.6	23.2	23.5	23.4	23.1	23.5	23.4	23.4	23.5	23.4	23.5	23.5	23.1	23.7	23.5	24
11	23.6	23.5	23.5	23.6	23.5	23.6	23.6	23.6	23.6	23.7	23.7	23.9	23.7	23.7	23.6	23.7	23.4	23.6	23.6	23.5	23.5	23.6	23.6	23.7	23.4	23.9	23.6	24
12	23.7	23.7	23.7	23.6	23.6	23.7	23.7	23.6	23.7	23.8	23.7	23.8	23.4	22.3	22.9	23.3	23.4	23.3	23.4	23.5	23.6	23.6	23.5	23.3	22.3	23.8	23.5	24
13	23.7	23.4	23.3	23.2	23.4	23.5	23.7	23.8	24.2	24.4	23.4	23.6	24.4	23.5	22.7	24.0	23.7	22.7	23.8	24.3	23.1	23.3	23.9	24.1	22.7	24.4	23.6	24
14	23.0	23.0	23.5	23.6	23.5	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.9	23.7	23.8	23.2	21.5	22.3	23.0	23.1	23.2	23.2	21.5	23.9	23.3	24
15	23.2	23.2	23.4	23.3	23.2	23.3	23.3	23.3	23.3	22.6	22.2	22.8	22.4	22.4	22.2	22.2	22.1	22.1	22.0	**21.1**	22.7	23.0	23.0	23.2	**21.1**	23.4	22.7	24
16	23.2	23.3	23.3	23.2	23.3	23.3	23.2	23.3	22.6	22.8	23.5	23.4	23.4	23.6	23.7	23.5	23.6	23.7	23.7	23.7	23.6	23.6	23.8	23.8	22.6	23.8	23.4	24
17	23.7	23.7	23.8	23.7	23.7	23.5	23.6	23.5	23.6	23.7	23.6	23.7	23.7	23.7	23.7	23.6	23.7	23.7	23.5	23.6	23.5	23.6	23.6	23.5	23.5	23.8	23.6	24
18	23.4	23.7	23.7	23.6	23.7	23.7	23.7	23.6	23.5	23.6	23.9	23.7	23.6	23.7	23.6	23.6	23.5	23.6	23.5	23.5	23.4	23.7	23.5	23.4	23.4	23.9	23.6	24
19	23.5	23.5	23.5	23.6	23.6	23.5	23.5	23.6	23.4	23.7	23.5	23.6	23.5	23.3	23.4	23.6	23.7	23.6	23.2	23.5	23.4	23.6	23.6	23.6	23.2	23.7	23.5	24
20	23.6	23.5	23.4	23.5	23.5	23.5	23.5	23.5	23.4	23.5	23.6	23.7	23.7	23.8	23.8	23.8	23.6	23.5	23.5	23.5	23.5	23.5	23.7	23.7	23.4	23.8	23.6	24
21	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.6	23.6	23.7	23.4	23.7	23.3	23.2	23.3	23.4	23.4	23.4	23.6	23.5	23.4	23.6	23.2	23.7	23.5	24
22	23.2	23.6	23.4	23.6	23.5	23.4	23.4	23.5	23.6	23.5	23.7	23.3	23.7	24.0	24.2	**24.5**	24.3	22.7	23.4	23.1	23.3	23.6	23.5	23.6	22.7	**24.5**	23.6	24
23	23.6	23.5	23.5	23.6	23.6	23.6	23.6	23.7	23.6	23.5	23.2	24.0	24.0	24.3	24.5	22.6	23.3	23.8	22.6	23.5	23.9	23.7	22.4	23.2	22.4	24.5	23.5	24
24	23.4	23.5	23.4	23.3	23.1	22.9	23.1	23.0	23.3	23.3	23.1	23.2	23.4	23.7	24.1	24.2	24.3	24.2	24.0	23.8	23.5	23.2	22.8	23.4	22.8	24.3	23.5	24
25	23.1	23.3	23.0	22.9	22.9	23.0	23.2	23.3	23.3	23.2	23.2	23.2	23.5	23.8	24.0	24.0	22.3	23.0	23.2	22.9	23.0	22.9	23.2	23.0	22.3	24.0	23.2	24
26	23.1	23.1	23.1	23.2	23.3	23.1	23.1	23.3	23.2	23.2	22.9	23.4	23.5	23.8	24.0	22.2	23.1	23.9	24.1	24.2	22.5	22.9	23.3	23.5	22.2	24.2	23.3	24
27	23.7	23.8	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.8	22.3	23.2	23.4	22.2	23.5	23.4	22.7	23.8	24.2	24.2	24.3	24.2	23.8	22.2	24.3	23.7	24
28	23.2	23.3	23.1	23.4	23.3	23.5	23.2	23.5	23.5	23.6	23.4	23.7	24.2	23.1	22.4	22.9	23.4	22.1	22.9	23.2	22.8	23.3	23.3	23.3	22.1	24.2	23.2	24
HOURLY MAX	23.7	23.8	23.9	23.9	23.9	23.9	23.9	23.9	24.2	24.4	23.9	24.0	24.4	24.3	24.5	24.5	24.3	24.2	24.1	24.3	24.2	24.3	24.2	24.1				
HOURLY AVG	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.5	23.6	23.5	23.6	23.6	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.5	23.5	23.5				

STATUS FLAG CODES

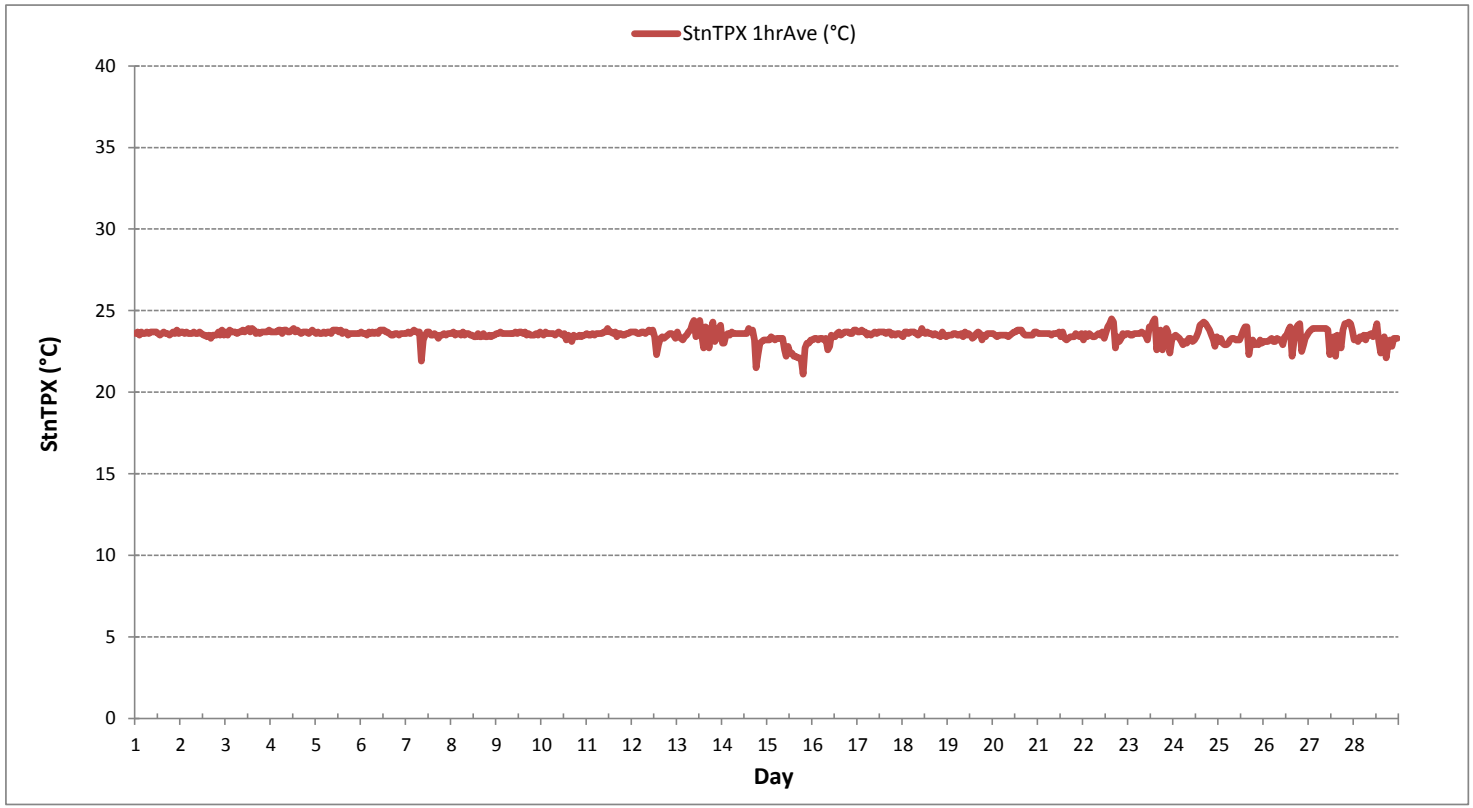
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	21.1	°C	@ HOUR	19	ON DAY	15	
MAXIMUM 1-HR AVERAGE:	24.5	°C	@ HOUR	15	ON DAY	22	
MAXIMUM 24-HR AVERAGE:	23.7	°C			ON DAY	3	
			OPERATIONAL TIME:			672	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.4		MONTHLY AVERAGE:			23.5	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

Thermo 43C Sulphur Dioxide Analyzer Calibration

Date:	February 15, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	945	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018	22.5	°C
Location/Station Name:	986b	**Weather Conditions:**	Mix of sun and clouds		
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	13:46	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	18:23	**Cal Gas Expiry Date:**	October 24, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a		

Analyzer:

ID# or Serial Number:	43C-62339-335	**Range ppb:**	500
Last Calibration Date:	January 11, 2018	**As Found C.F.:**	0.969
Previous C.F.:	1.001	**New C.F.:**	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018
Calibrator ID/Expiry Date:	Sabio id# 17100415 expires May 16, 2018
Cal Gas Cylinder I.D. # :	LL108015
Cal Gas Conc. (ppm):	47.9

Standard Calibration Points for Ranges

Point	ppb
High	**380**
Mid	**180**
Low	**90**

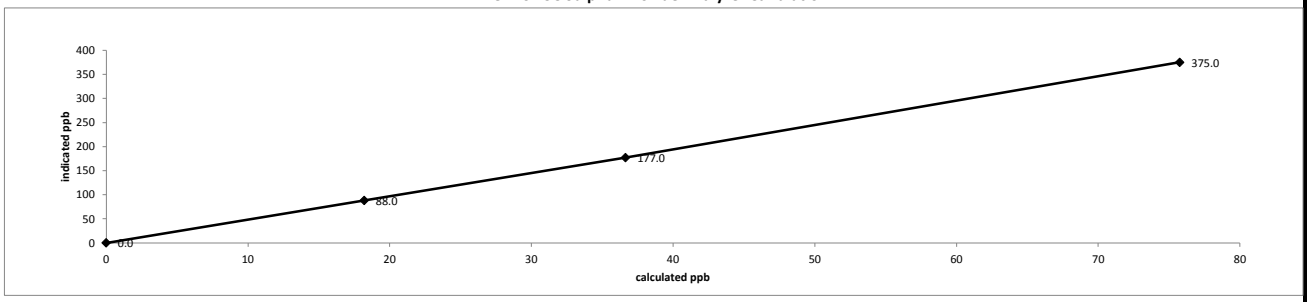
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**		
as found zero	6062	0.00	6062	0.0	0.8	n/a
as found high	6013	47.46	6060	375.1	388.0	0.969
adjusted zero	6062	0.00	6062	0.0	0.0	n/a
adjusted high	6013	47.46	6060	375.1	375.0	1.000
mid	6056	22.59	6079	178.0	177.0	1.006
low	6054	11.29	6065	89.2	88.0	1.013
calibrator zero	6062	0.00	6062	0.0	0.5	n/a
					Average C.F.=	1.006

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)=	**0.13%**	**± 3% F.S.**
% change in C.F. from last cal=	**3.22%**	**± 10%**

Thermo 43C Sulphur Dioxide Analyzer Calibration



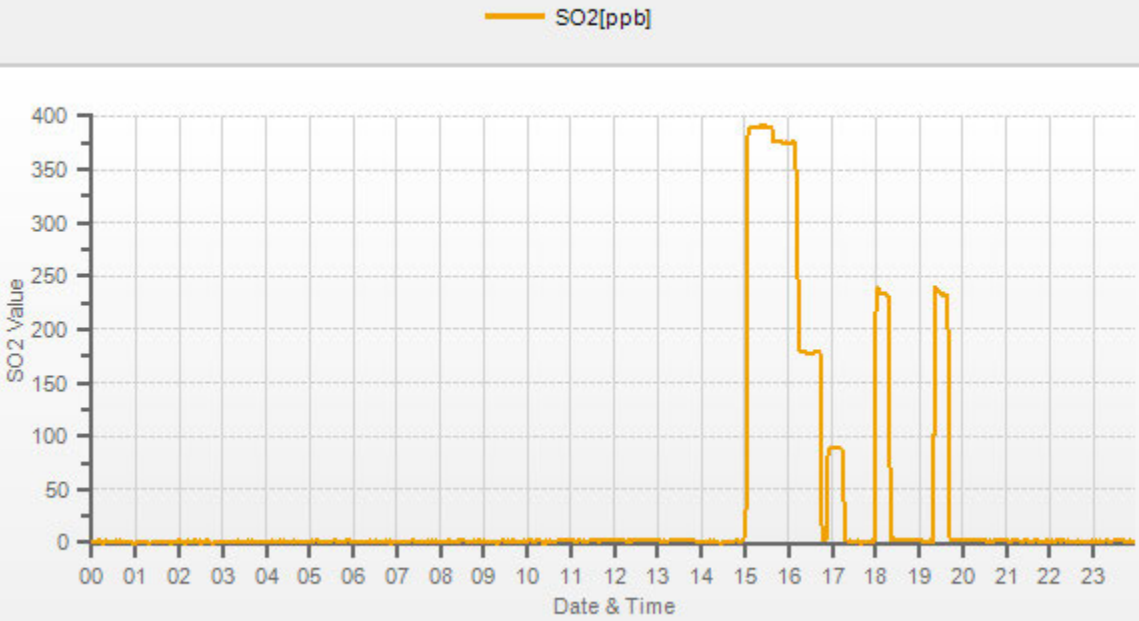
	As found:		**As left:**
Bkg:	80.2	Bkg:	77.6
Coef:	0.905	Coef:	0.875
Pmt:	-654	Pmt:	-654
0	Lamp=843	0	Lamp=842
Battery:	3.3	Battery:	3.3
Internal:	27.8	Internal:	27.7
Chamber:	45.3	Chamber:	45.3
Pressure:	424.3	Pressure:	422.9
Flow:	0.744	Flow:	0.743
Intensity:	~38000	Intensity:	~38000
Averaging Time:	120	Averaging Time:	120
Expected Value:	239.0	Expected Value:	231.0

Comments:

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

The manifold blower was found to be working normally.

SO2[ppb] Station: PRAMP_986 Daily: 18/02/15 Type: AVG 1 Min. [1 Min.]



TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	February 15, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	945	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018	22.5	°C
Location/Station Name:	986b	**Weather Conditions:**	Mainly sunny		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	10:55	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	16:12	**Cal Gas Expiry Date:**	November 7, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CD Nova CDN-101 #516		

Analyzer:

ID# or Serial Number:	1152940011	**Range ppb:**	100
Last Calibration Date:	January 11, 2018	**As Found C.F.:**	0.967
Previous C.F.:	1.000	**New C.F.:**	0.999

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018
Calibrator ID/Expiry Date:	API id# 829 expires January 31, 2019
Cal Gas Cylinder I.D. # :	LL119342
Cal Gas Conc. (ppm):	10.3

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	11:53 / 12:03
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	0.0
Analyzer Response: (ppb):	0.0
Zero Corrected Result (ppb):	0.0

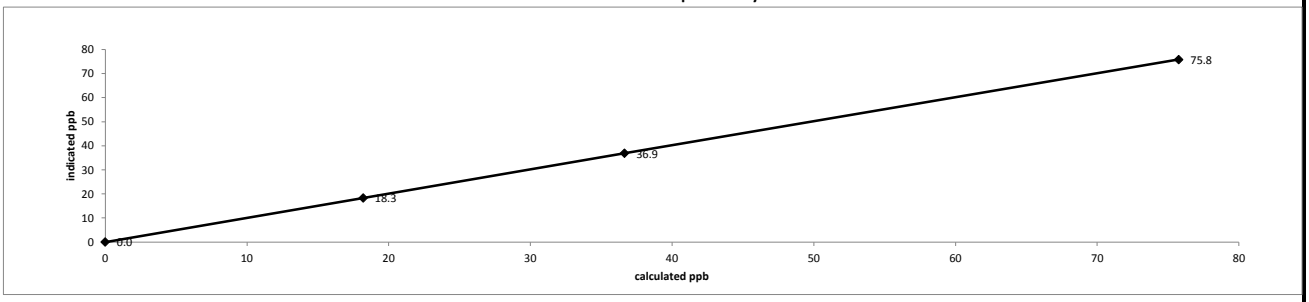
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated		
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**	**Indicated Concentration (ppb):**	**Correction Factors (C.F.):**
as found zero	7482	0.00	7482	0.0	0.0	n/a
as found high	7416	55.06	7471	75.8	78.3	0.967
adjusted zero	7482	0.00	7482	0.0	0.0	n/a
adjusted high	7416	55.06	7471	75.8	75.8	0.999
mid	7460	26.69	7487	36.7	36.9	0.993
low	7475	13.26	7488	18.2	18.3	0.995
calibrator zero	7482	0.00	7482	0.0	0.5	n/a
					Average C.F.=	0.996

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)=	**-0.08%**	**± 3% F.S.**
% change in C.F. from last cal=	**3.30%**	**± 10%**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



As found:		**As left:**	
Bkg:	2.2	Bkg:	2.20
Coef:	1.046	Coef:	1.029
Pmt:	686.1	Pmt:	-686.0
Flash:	976	Flash:	976
Internal:	31.3	Internal:	32.0
Chamber:	44.9	Chamber:	44.9
Perm Oven Gas:	44.99	Perm Oven Gas:	44.99
Perm Oven Heater:	44.25	Perm Oven Heater:	44.24
Pressure:	654.4	Pressure:	654.4
Sample Flow:	0.463	Sample Flow:	0.466
Lamp Intensity:	90	Lamp Intensity:	91
Converter:	820	Converter:	820
Converter Set:	820	Converter Set:	820
Averaging Time:	120	Averaging Time:	120
Expected Value:	42.9	Expected Value:	43.5

Comments:

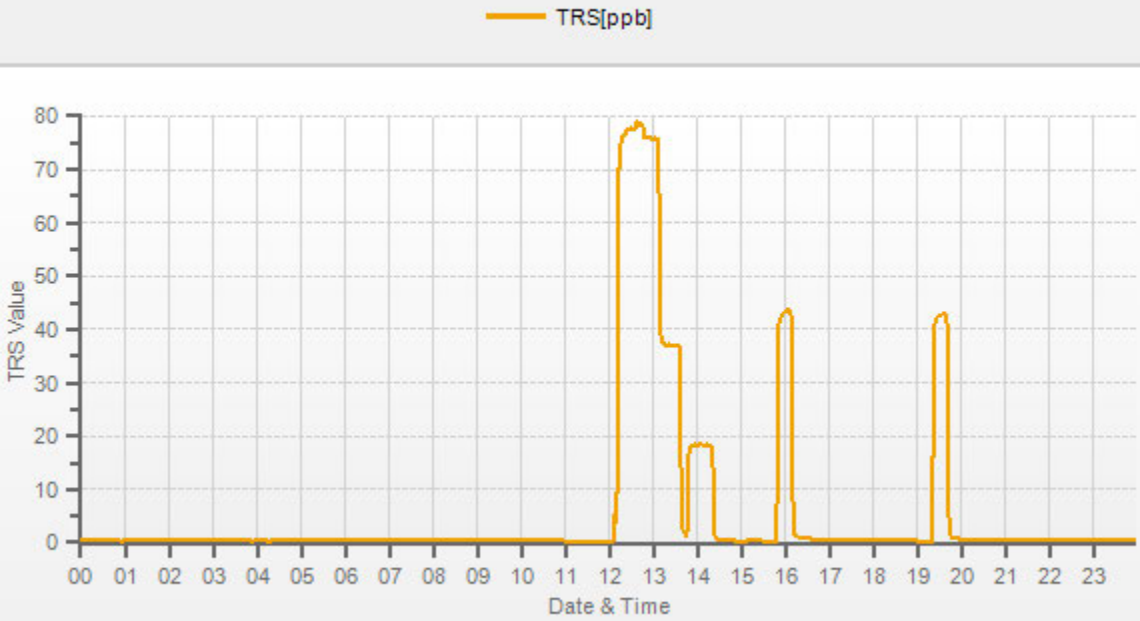
The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

As-found response was slow but within the 20-minute requirement.

TRS[ppb] Station: PRAMP_986 Daily: 18/02/15 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Maxxam
A Bureau Veritas Group Company

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	February 15, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	945	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018	22.5	°C
Location/Station Name:	986b	**Weather Conditions:**	Mainly sunny		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	routine monthly		
Start/End Time 24 hr. (mst):	10:55 /14:38	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

ID# or Serial Number:	1022143392
Measured Flow:	1.0 L/min
Last Calibration Date:	January 11, 2018
Range ppm:	20 CH4/20 NMHC/40 THC

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	1.000	1.018	0.999
NMHC =	1.000	1.053	1.002
THC =	1.000	1.034	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018		
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018		
Calibrator ID/Expiry Date:	Sabio id# 17100415 expires May 16, 2018		
Cal Gas Cylinder I.D. # :	LL107207		
CH4 Cylinder Conc.=	600.0	207.0	**=C_3H_8 Cylinder Conc.**
CH_4 expressed as C_3H_8=	569.3	1169.3	**=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	2511	0.00	2511	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2448	61.19	2509	14.63	13.88	28.51	14.38	13.18	27.57	1.018	1.053	1.034
adjusted zero	2511	0.00	2511	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2448	61.19	2509	14.63	13.88	28.51	14.65	13.86	28.51	0.999	1.002	1.000
mid	2488	30.70	2519	7.31	6.94	14.25	7.37	6.96	14.33	0.992	0.997	0.994
low	2503	15.86	2519	3.78	3.58	7.36	3.82	3.56	7.39	0.989	1.007	0.996
calibrator zero	2511	0.00	2511	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.993	1.002	0.997

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.001**	**0.999**	**1.000**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.12%**	**0.00%**	**0.07%**	**± 3% F.S.**
% change in C.F. from last cal=	**-1.75%**	**-5.33%**	**-3.42%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-311.1		Calibration History cnt'd:	NM Peak Area:	70171
Temperatures:	Detector Oven:	175.0		Crucial Settings:	Methane Start:	n/a
	Filter:	175.0			Methane End:	n/a
	Column Oven:	75.2			Backflush:	n/a
	Internal:	34.4			NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	1550	50		NMHC End:	n/a
	Fuel:	1700	50	Run History>1:	Date:	15Feb2018
	Span Gas:	1100	28		Time:	14:12
	Zero Air Generator:	45			CH_4 PK HT:	0
Internal Pressures:	Carrier:	31.3			CH_4 RT:	8.0
	Fuel:	40.5			CH_4 Baseline:	1597
	Air:	32.3			CH_4 LOD:	36
FID Status:	Status:	LIT			CH_4 SD:	12
	Counts:	21200			CH_4 CONC:	0.00
	Flame:	320.2			NM PK HT:	0
	Det Base:	175.0			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	07Oct2017@02:39			NM CONC:	0.00
	Flameouts:	5			NM Base Start:	1663
	Det Oven at Start:	37.4			NM Base End:	1663
	Col Oven at Start:	34.9			NM LOD:	8
Calibration History:	Time:	15Feb2018@12:28			NM Start IDX:	41
	Type:	SPAN			NM End IDX:	76
	Status:	GOOD			NM Max Slope:	2.8e01
	Check/Adjust:	ADJUST			NM Min Slope:	-2.9e01
	CH_4 Span Conc:	14.63			NM PT Count:	0
	CH_4 SP Ratio:	0.000757		Expected Values:	Previous CH4:	8.74
	CH_4 RT:	12.4			Previous NMHC	9.8
	CH_4 PK IDX:	22			Previous THC:	18.53
	CH_4 PK HT:	19314			New CH4:	9.06
	NM Span Conc:	13.88			New NMHC	10.21
	NM SP Ratio:	0.000198			New THC:	19.27

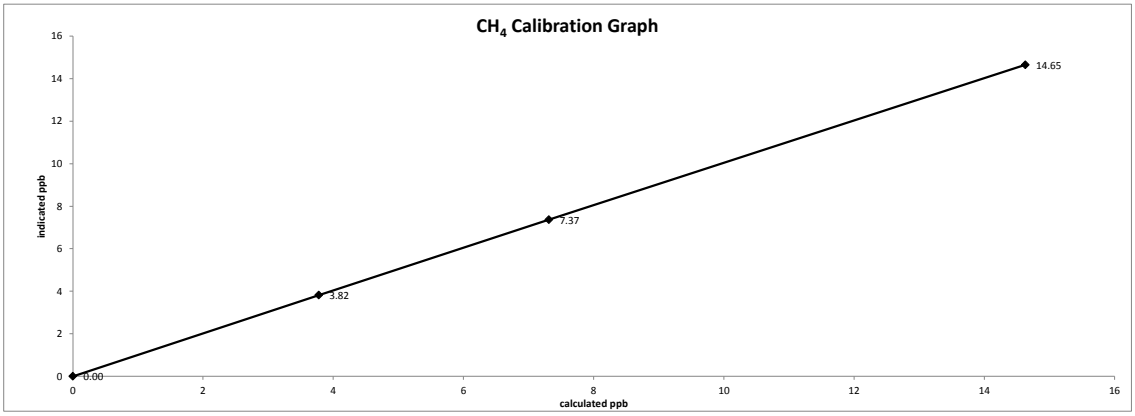
Comments:

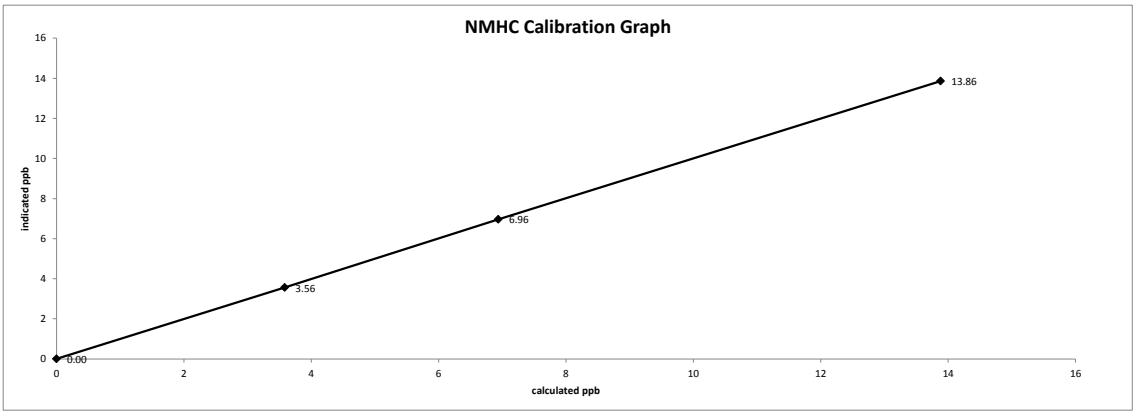
The analyzer sample inlet filter was changed.

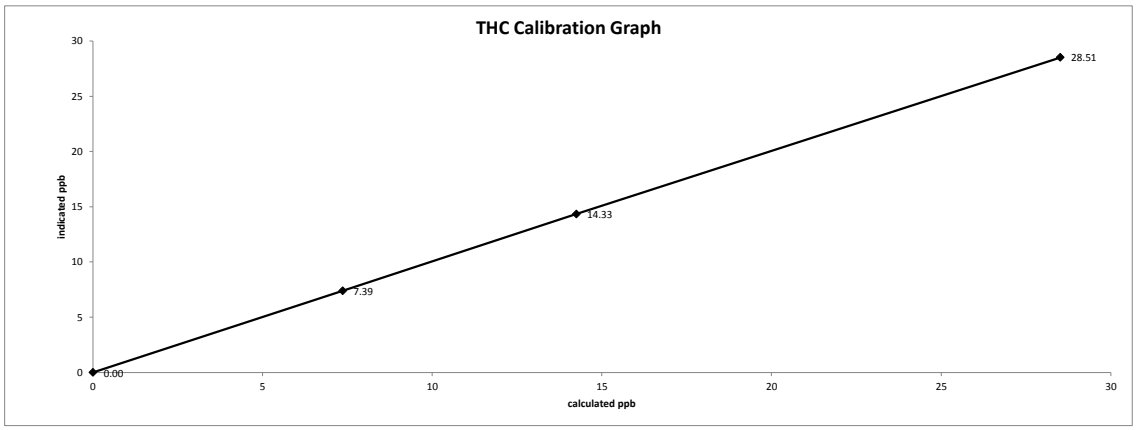
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

The manifold blower was found to be working normally.

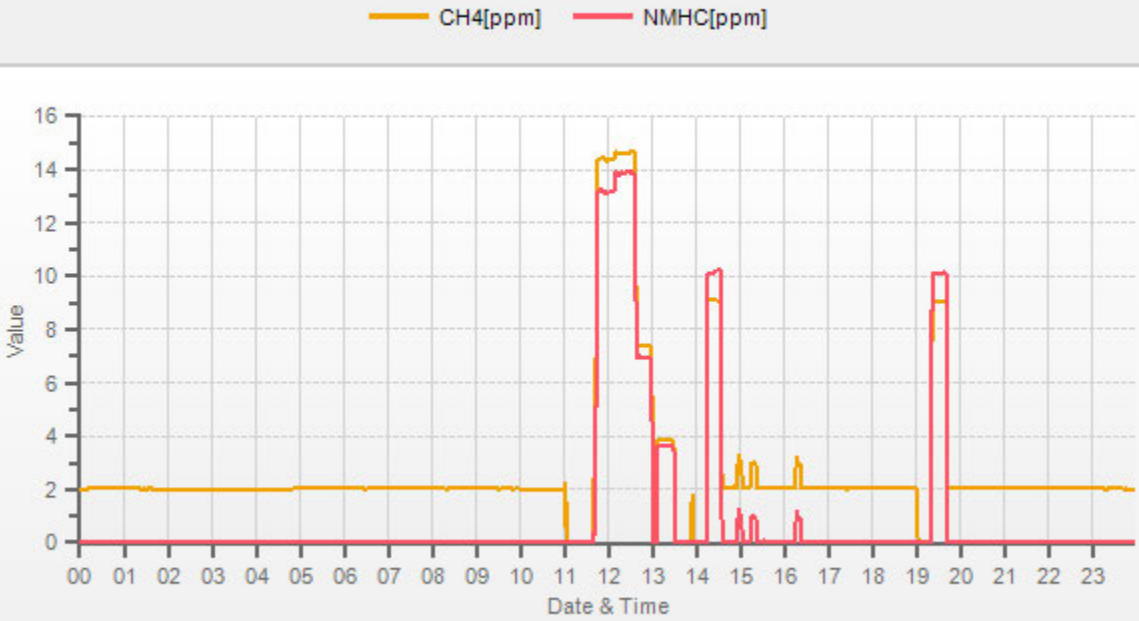
Date:	**February 15, 2018**	**Start/End Time 24 hr. (mst):**	**10:55 /14:38**
Company/Airshed:	**PRAMP**	**Calibration Purpose:**	**routine monthly**
Location/Station Name:	**986b**	**Calibration Method:**	**Gas Dilution**







Station: PRAMP_986 Daily: 18/02/15 Type: AVG 1 Min. [1 Min.]



WIND SYSTEM

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Limin Li
Audit Location:	986b	**Reviewed By:**	Trina Whitsitt
Audit Date:	April 5, 2017	**Start /EndTime (mst):**	13:30/15:30

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1 V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 km/h
Serial #:	129612	**Direction Voltage Output Range:**	0-1 V
Previous Cal/Audit Date:	February 15, 2017	**Direction Unit Output Range:**	0-360 degrees

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.4	0.999
2000	36.9	36.8	36.8	1.003
3000	55.3	55.2	55.2	1.002
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.4	147.4	1.000
9000	165.9	165.9	165.9	1.000
10000	184.3	184.5	184.5	0.999
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.001**

Wind Direction Audit Data **+/- 5° of the absolute average degrees difference for all points is the limit**

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.4	2.5	1.5
30	330	29	329	1.4	1.3	1.3
60	300	60	300	0.4	0.3	0.3
90	270	89	271	0.8	-1.2	1.0
120	240	120	242	0.5	-1.6	1.1
150	210	150	212	0.1	-1.8	1.0
180	180	181	181	-0.9	-1.1	1.0
210	150	212	151	-1.5	-0.8	1.2
240	120	241	120	-1.3	-0.2	0.8
270	90	271	90	-0.5	-0.1	0.3
300	60	300	60	0.2	0.5	0.3
330	30	329	29	1.4	0.7	1.1
355	0	353	0	2.5	0.3	1.4
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**0.9**

Comments: Adjust wind speed gain before calibration.

METEOROLOGICAL SYSTEMS CHECK

Meteorological System Checklist

Date:	February 15, 2018		
Technician:	Chris Wesson		
Reviewer:	Rob Fisher		
Station:	PRAMP 986b		
Unit:	**Make:**	**Model:**	**Serial #:**
Precipitation Sampler:	n/a	n/a	n/a
Temperature Sensor:	RM Young	43172VC	61012322
Barometric Pressure Sensor:	MetOne	090D	3845
Relative Humidity Sensor:	RM Young	43172VC	61012322
Anemometer:	RM Young	05305VK	129612
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	n/a		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 160459244 expires May 18, 2018		
Reference Temperature (^{o}C):	-11.9		
Station - Ambient Temperature (^{o}C):	-12.1		
Temperature Difference (^{o}C):	0.2		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:			
Reference Barometer ID:	Brunton 05490 expires December 11, 2018		
Reference Pressure - Units/Reading:	inHg	27.86	
Station Pressure - Units/Reading:	inHg	27.81	
Pressure Tolerance +/- 15% of error:	23.68 - 32.04	0.18%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	n/a		
Reference Hygrometer ID:	F.S. id# 160459244 expires May 18, 2018		
Reference Hygrometer % RH- Reading:	60.20		
Station Hygrometer % RH- Reading:	62.30		
Humidity Tolerance +/- 15% of error:	51.17 - 69.23	-2.1%	

CALIBRATORS

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2017-072A

Company Maxxam **Operator:** Micheal Espiritu

Calibrator:				**Flow Measurement Device:**	
Make/Model	Sabio 2010			Make/Model	Mesa Defender 530
Serial Number	17100415			Serial Number	L-152019 H-148944
Last Verification Date	May 2016			Temperature (°C)	25.0 C
NO Cylinder S/N	EY0000597			Barometric Pressure	697 mmhg
NO [PPM]	49.0	NOx [PPM]	49.0		
Expiry Date	December 2019				

Dilution Flow (sccm)

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

Gas Flow (sccm)

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
4996	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5029	80.3	0.784	0.783	0.808	-0.013	0.794	3%	1%
5054	38.8	0.376	0.376	0.392	-0.006	0.386	4%	3%
5051	19.5	0.189	0.189	0.196	-0.003	0.193	4%	2%
					Absolute Average Percent Difference		4%	2%

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

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	1.0311	**0.90-1.10**	m (Slope)=	1.0140
b (Intercept % of FS)=	0.1350	**± 3% F.S.**	b (Intercept % of FS)=	0.1531

Flow	O_3 Conc (LC)	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
5029	0.000	0.000	0.803	-0.013	0.790	NO_2	% Diff. Limit
5029	1.508	0.568	0.235	0.552	0.787	-1%	± 10%
5029	0.882	0.312	0.491	0.298	0.789	0%	± 10%
5029	0.390	0.108	0.695	0.095	0.789	0%	± 10%
				Absolute Average Percent Difference		0%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9945	**0.90-1.10**
b (Intercept % of FS)=	-1.2646	**± 3% F.S.**

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

COMMENTS: Contains 50.4 ppm SO2.

Auditor: Al Clark Date: May 16, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-520A

Company Maxxam **Operator:** Christopher

Calibrator:				**Flow Measurement Device:**	
Make/Model	API 700			Make/Model	Mesa 530+
Serial Number	829			Serial Number	H-156312 L-156151
Last Verification Date	January 2017			Temperature (°C)	N/A
NO Cylinder S/N	EY0000715			Barometric Pressure	N/A
NO [PPM]	50.7	NOx [PPM]	50.8		
Expiry Date	May 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%	
4950	79.8	0.787	0.788	0.783	-0.001	0.781	-1%	-1%
4958	37.2	0.380	0.381	0.378	-0.001	0.377	-1%	-1%
4960	18.5	0.189	0.189	0.188	-0.001	0.187	-1%	-1%
						Absolute Average Percent Difference	1%	1%

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

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

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
						NO_2	% Diff. Limit
4950	0.000	0.000	0.776	0.000	0.776		
4950	0.500	0.476	0.300	0.474	0.775	0%	± 10%
4950	0.290	0.277	0.499	0.278	0.778	0%	± 10%
4950	0.095	0.090	0.686	0.093	0.779	3%	± 10%
				Absolute Average Percent Difference		1%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9938	**0.90-1.10**
b (Intercept % of FS)=	0.1802	**± 3% F.S.**

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

COMMENTS:

Auditor: Al Clark Date: January 31, 2018

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

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

DocNumber: 000116114

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

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

Praxair Order Number: 45357200
Customer PO Number: 582-280
Customer Reference Number:

Fill Date: 10/12/2017
Part Number: NI NO50MS2E-AO
Lot Number: 70086728507
Cylinder Style and Outlet: AO CGA 660
Cylinder Pressure and Volume: 2000 psig 82 cu. ft.

Certified Concentration:

Expiration Date:		**10/24/2020**	NIST Traceable
Cylinder Number:		**LL108015**	Expanded Uncertainty:
52.2	**ppm**	**NITRIC OXIDE**	**± 0.7 %**
47.9	**ppm**	**SULFUR DIOXIDE**	**± 1.0 %**
	Balance	**NITROGEN**	

NOx ppm = 52.3 ppm NOX for Reference Only

Certification Information:

Certification Date : 10/24/2017 *Term :* 36 Months *Expiration Date :* 10/24/2020

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

Analytical Data:

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

1 . Component: **NITRIC OXIDE**

Requested Concentration: 50 ppm
Certified Concentration: 52.2 ppm
Instrument Used: Themo Electron 42i-LS S/N 1030645077
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 10/14/2017

Reference Standard Type: GMIS
Ref. Std. Cylinder #: CC363145
Ref. Std. Conc: 50.79 ppm
Ref. Std. traceable to SRM #: vs. 1683b
SRM Sample #: 45.-V-42
SRM Cylinder #: CAL017897

First Analysis Data:						Date:	10/17/2017
Z:	0	R:	50.8	C:	52	Conc:	52
R:	50.8	Z:	0	C:	52.1	Conc:	52.1
Z:	0	C:	52.1	R:	50.8	Conc:	52.1
UOM:	ppm					Mean Test Assay:	52.1 ppm

Second Analysis Data:						Date:	10/24/2017
Z:	0	R:	50.8	C:	52.4	Conc:	52.4
R:	50.8	Z:	0	C:	52.3	Conc:	52.3
Z:	0	C:	52.3	R:	50.8	Conc:	52.4
UOM:	ppm					Mean Test Assay:	52.4 ppm

2 . Component: **SULFUR DIOXIDE**

Requested Concentration: 50 ppm
Certified Concentration: 47.9 ppm
Instrument Used: Ametek 921CE S/N AW-921-S321
Analytical Method: Ultraviolet Absorption
Last Multipoint Calibration: 10/13/2017

Reference Standard Type: NTRM
Ref. Std. Cylinder #: CC72593
Ref. Std. Conc: 48.58 ppm
Ref. Std. traceable to SRM #: n/a
SRM Sample #: 12070103
SRM Cylinder #: N/A

First Analysis Data:						Date:	10/17/2017
Z:	0	R:	48.2	C:	48.4	Conc:	48.7
R:	48.2	Z:	0	C:	48.5	Conc:	48.8
Z:	0	C:	48.5	R:	48.2	Conc:	48.8
UOM:	ppm					Mean Test Assay:	48.8 ppm

Second Analysis Data:						Date:	10/24/2017
Z:	0	R:	48.2	C:	48	Conc:	48.4
R:	48.2	Z:	0	C:	48.1	Conc:	48.5
Z:	0	C:	48.1	R:	48.2	Conc:	48.5
UOM:	ppm					Mean Test Assay:	48.4 ppm

Analyzed by: Henry Koung

Certified by: Amalia Real

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

DocNumber: 000109342

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

MAXXAM ANALYTICS INC *NA*
9372 49TH ST
EDMONTON AB T6B 2L7

Praxair Order Number: 28946198
Customer PO Number: 35-68215
Customer Reference Number:

Fill Date: 4/27/2017
Part Number: NI HS10ME-AO
Lot Number: 70086711701
Cylinder Style and Outlet: AO CGA 330
Cylinder Pressure and Volume: 2000 psig 75 cu. ft.

Certified Concentration:

Expiration Date: / Cylinder Number:			NIST Traceable Expanded Uncertainty:
		05/16/2020 / **LL119432**	
10.3	**ppm**	**HYDROGEN SULFIDE**	**± 1.3 %**
	Balance	**NITROGEN**	

Certification Information:

Certification Date : 5/16/2017 *Term :* 36 Months *Expiration Date :* 05/16/2020

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

Analytical Data:

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

1 . Component: **HYDROGEN SULFIDE**

Requested Concentration: 10 ppm
Certified Concentration: 10.3 ppm
Instrument Used: INTERSCAN RM-17 S/N 715726
Analytical Method: ELECTROLYTIC CELL
Last Multipoint Calibration: 04/25/2017

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

First Analysis Data:						Date: 05/08/2017	
Z:	0	R:	40.69	C:	20.69	Conc:	10.3
R:	40.7	Z:	0	C:	20.71	Conc:	10.3
Z:	0	C:	20.71	R:	40.7	Conc:	10.3
UOM:	mV					Mean Test Assay:	10.3 ppm

Second Analysis Data:						Date: 05/16/2017	
Z:	0	R:	40.64	C:	20.67	Conc:	10.3
R:	40.54	Z:	0	C:	20.68	Conc:	10.3
Z:	0	C:	20.68	R:	40.54	Conc:	10.3
UOM:	mV					Mean Test Assay:	10.3 ppm

Analyzed by: Ying Yu

Certified by: Nassim Haddad

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

DocNumber: 000116091

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

MAXXAM ANALYTICS INC
500 1919 MINNESOTA CRT
MISSISSAUGA ON L5N 0C9

Praxair Order Number: 44723832
Customer PO Number: PO0000001677
Customer Reference Number:

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

Certified Concentration:

Expiration Date:		**10/18/2025**	NIST Traceable
Cylinder Number:		**LL107207**	Expanded Uncertainty:
207	**ppm**	**PROPANE**	**± 0.6 %**
600	**ppm**	**METHANE**	**± 0.3 %**
	Balance	**NITROGEN**	

Certification Information:

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

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

Analytical Data:

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

1 . Component: **PROPANE**

Requested Concentration: 200 ppm
Certified Concentration: 207 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: Fourier Transform Infrared
Last Multipoint Calibration: 10/15/2017

First Analysis Data: **Date:** 10/17/2017

Z:	0	**R:**	246.853	**C:**	200.173	**Conc:**	207
R:	246.886	**Z:**	0	**C:**	99.999	**Conc:**	207
Z:	0	**C:**	99.999	**R:**	246.886	**Conc:**	207

UOM: ppm **Mean Test Assay:** 207 ppm

Reference Standard Type: GMIS
Ref. Std. Cylinder #: CC119142
Ref. Std. Conc: 255.6 ppm
Ref. Std. traceable to SRM #: 2644a
SRM Sample #: 101-C-45
SRM Cylinder #: XF003829B

Second Analysis Data: **Date:**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: ppm **Mean Test Assay:** 0 ppm

2 . Component: **METHANE**

Requested Concentration: 600 ppm
Certified Concentration: 600 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: Fourier Transform Infrared
Last Multipoint Calibration: 09/27/2017

First Analysis Data: **Date:** 10/17/2017

Z:	0	**R:**	234.603	**C:**	665.923	**Conc:**	600
R:	234.657	**Z:**	0	**C:**	666.718	**Conc:**	601
Z:	0	**C:**	666.718	**R:**	234.657	**Conc:**	600

UOM: ppm **Mean Test Assay:** 600 ppm

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

Second Analysis Data: **Date:**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: ppm **Mean Test Assay:** 0 ppm

Analyzed by: Jenna Lockman

Certified by: Jose Vasquez

APPENDIX III
MAXIMUM INSTANTANEOUS DATA

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	2	2	1	1	1	1	1	1	1	1	S	1	1	2	1	1	1	1	1	2	1	1	2	1	1	2	1	24
2	1	1	1	1	1	1	1	1	1	S	2	1	1	2	1	1	1	2	1	1	1	1	1	1	1	2	1	24
3	1	1	2	1	2	1	1	1	S	1	2	2	1	1	2	1	1	1	1	2	2	2	1	1	1	2	1	24
4	1	1	2	1	2	2	2	S	1	2	2	2	2	2	2	1	1	2	2	2	1	2	2	2	1	2	2	24
5	2	2	2	2	1	1	S	2	1	2	2	2	2	5	5	2	2	2	2	2	2	2	2	2	1	5	2	24
6	1	1	1	2	2	S	2	2	1	1	1	2	1	2	1	1	1	2	1	1	1	1	2	1	1	2	1	24
7	1	1	1	2	S	1	2	1	2	1	1	2	2	1	2	1	2	1	1	2	1	1	2	1	1	2	1	24
8	1	1	1	S	1	2	2	1	1	1	1	1	1	1	2	2	2	2	1	1	2	2	1	1	1	2	1	24
9	1	1	S	2	2	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1	2	2	24
10	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	2	1	1	2	2	24
11	S	1	1	1	1	1	1	1	1	2	1	2	2	2	1	2	1	2	1	1	1	1	1	S	1	2	1	24
12	1	2	1	1	2	1	2	2	2	2	3	2	2	2	2	2	2	2	1	2	2	2	S	2	1	3	2	24
13	2	2	2	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	S	2	2	1	3	2	24
14	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	1	Y	2	S	2	2	2	1	2	2	23
15	2	1	2	2	2	2	2	2	2	2	2	2	3	C	C	C	C	C	C	C	2	2	2	3	1	3	2	24
16	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	S	2	2	3	2	2	2	3	2	24
17	2	2	2	2	2	1	2	1	2	2	2	2	2	1	2	2	2	S	2	2	2	2	2	2	1	2	2	24
18	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	2	S	2	2	2	2	2	2	2	1	2	2	24
19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	3	2	2	2	2	1	2	2	1	3	2	24
20	3	2	2	2	2	2	1	2	2	2	2	2	1	2	S	2	2	2	2	2	2	2	2	2	1	3	2	24
21	3	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	3	3	2	2	2	3	2	24
22	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	3	2	2	2	2	2	2	2	2	3	2	24
23	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	3	2	3	2	3	2	24
24	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2	24
25	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	24
26	2	2	2	2	2	2	2	2	S	2	2	3	2	2	2	3	3	3	2	2	2	2	2	2	2	3	2	24
27	2	2	2	2	2	2	2	S	2	3	2	2	2	3	3	2	2	2	3	2	2	2	2	2	2	3	2	24
28	2	2	2	2	2	3	S	3	2	2	3	3	2	3	6	4	3	3	3	2	2	2	2	2	2	6	3	24
HOURLY MAX	3	2	2	2	2	3	2	3	2	3	3	3	3	5	6	4	3	3	3	2	3	3	3	3				
HOURLY AVG	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	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

MONTHLY SUMMARY

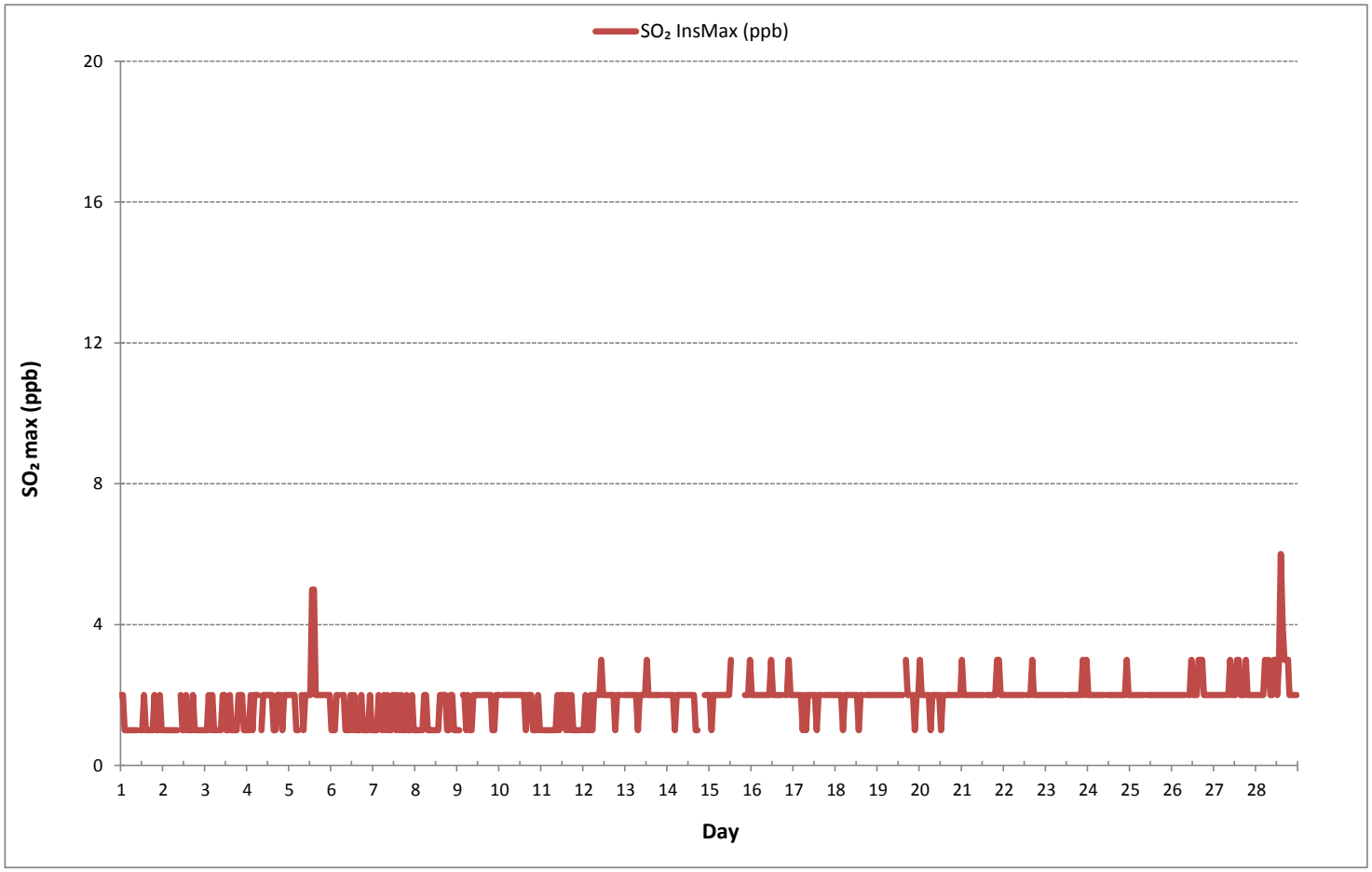
NUMBER OF NON-ZERO READINGS: 636

MAXIMUM INSTANTANEOUS VALUE: 6 ppb @ HOUR 14 ON DAY 28

IZS CALIBRATION TIME: 28 hrs
MONTHLY CALIBRATION TIME: 7 hrs
STANDARD DEVIATION: 1

OPERATIONAL TIME: 671 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)



TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.32	0.37	0.35	0.37	0.35	0.37	0.35	0.37	0.37	0.43	S	0.64	0.40	0.37	0.34	0.35	0.37	0.35	0.37	0.38	0.37	0.38	0.37	0.35	0.32	0.64	0.38	24
2	0.35	0.37	0.35	0.32	0.34	0.35	0.37	0.38	0.48	S	0.64	0.38	0.40	0.38	0.35	0.38	0.38	0.37	0.38	0.40	0.38	0.35	0.33	0.33	0.32	0.64	0.38	24
3	0.35	0.37	0.35	0.35	0.35	0.33	0.40	0.51	S	0.59	0.38	0.38	0.40	0.38	0.38	0.40	0.40	0.40	0.38	0.35	0.38	0.38	0.38	0.35	0.33	0.59	0.39	24
4	0.35	0.35	0.38	0.38	0.38	0.40	0.40	S	0.74	0.40	0.43	0.40	0.40	0.43	0.40	0.43	0.43	0.43	0.45	0.45	0.43	0.43	0.43	0.51	0.35	0.74	0.43	24
5	0.45	0.45	0.48	0.45	0.45	0.56	S	0.82	0.58	0.56	0.61	0.45	0.48	0.45	0.43	0.40	0.43	0.45	0.45	0.51	0.45	0.48	0.45	0.48	0.40	0.82	0.49	24
6	0.55	0.58	0.45	0.43	0.42	S	0.71	0.66	0.50	0.48	0.48	0.43	0.43	0.43	0.40	0.48	0.64	0.69	0.61	0.45	0.66	0.45	0.58	0.69	0.40	0.71	0.53	24
7	0.51	0.64	0.69	0.74	S	0.87	0.61	0.77	0.73	0.66	0.64	0.69	0.51	0.45	0.43	0.45	0.48	0.43	0.50	0.79	0.48	0.50	0.64	0.64	0.43	0.87	0.60	24
8	0.48	0.56	0.45	S	0.66	0.56	0.48	0.48	0.45	0.45	0.45	0.45	0.45	0.48	0.43	0.45	0.43	0.45	0.43	0.43	0.42	0.43	0.43	0.45	0.42	0.66	0.47	24
9	0.45	0.51	S	0.69	0.45	0.45	0.45	0.50	0.48	0.43	0.48	0.48	0.50	0.48	0.48	0.50	0.48	0.50	0.51	0.45	0.45	0.48	0.47	0.53	0.43	0.69	0.49	24
10	0.45	S	0.66	0.48	0.45	0.50	0.43	0.50	0.48	0.43	0.42	0.45	0.43	0.43	0.38	0.40	0.35	0.38	0.37	0.38	0.37	0.40	0.37	0.40	0.35	0.66	0.43	24
11	S	0.51	0.42	0.37	0.40	0.47	0.40	0.35	0.45	0.43	0.43	0.42	0.40	0.37	0.42	0.40	0.38	0.38	0.40	0.40	0.42	0.42	0.40	S	0.35	0.51	0.41	24
12	0.56	0.38	0.37	0.40	0.40	0.42	0.40	0.42	0.40	0.40	0.40	0.37	0.37	0.40	0.40	0.43	0.35	0.40	0.40	0.40	0.35	0.38	S	0.51	0.35	0.56	0.40	24
13	0.37	0.35	0.35	0.33	0.35	0.33	0.32	0.34	0.38	0.35	0.35	0.35	0.35	0.35	0.35	0.32	0.35	0.40	0.37	0.35	0.32	S	0.38	0.32	0.32	0.40	0.35	24
14	0.35	0.40	0.35	0.40	0.34	0.34	0.33	0.32	0.35	0.35	0.37	0.42	0.40	0.40	0.45	0.40	0.35	0.40	0.63	0.42	S	0.64	0.40	0.48	0.32	0.64	0.40	24
15	0.43	0.38	0.38	0.40	0.40	0.40	0.43	0.40	0.40	0.43	0.47	C	C	C	C	C	C	0.48	0.36	S	0.57	0.45	0.37	0.42	0.36	0.57	0.42	24
16	0.35	0.35	0.32	0.35	0.37	0.34	0.37	0.30	0.33	0.29	0.32	0.32	0.29	0.34	0.29	0.30	0.29	0.29	S	0.48	0.30	0.35	0.30	0.32	0.29	0.48	0.33	24
17	0.32	0.29	0.27	0.29	0.29	0.30	0.29	0.30	0.27	0.29	0.30	0.35	0.32	0.29	0.29	0.29	0.29	S	0.43	0.32	0.32	0.37	0.32	0.32	0.27	0.43	0.31	24
18	0.35	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.33	0.34	0.35	0.37	0.33	0.37	0.35	0.37	S	0.47	0.48	0.35	0.32	0.35	0.37	0.32	0.32	0.48	0.35	24
19	0.32	0.33	0.35	0.35	0.35	0.40	0.35	0.35	0.35	0.37	0.38	0.40	0.37	0.37	0.35	S	0.51	0.38	0.35	0.37	0.35	0.37	0.32	0.38	0.32	0.51	0.37	24
20	0.34	0.37	0.33	0.35	0.32	0.32	0.37	0.32	0.35	0.34	0.32	0.34	0.37	0.34	S	0.53	0.37	0.34	0.37	0.40	0.35	0.34	0.34	0.37	0.32	0.53	0.36	24
21	0.35	0.37	0.37	0.34	0.37	0.34	0.34	0.40	0.37	0.35	0.37	0.40	0.35	S	0.48	0.43	0.37	0.40	0.37	0.38	0.38	0.45	0.42	0.69	0.34	0.69	0.40	24
22	0.40	0.38	0.45	0.40	0.40	0.48	0.53	0.43	0.40	0.40	0.38	0.40	S	0.55	0.37	0.40	0.40	0.37	0.40	0.37	0.50	0.32	0.34	0.32	0.32	0.55	0.41	24
23	0.35	0.30	0.34	0.34	0.27	0.32	0.32	0.34	0.30	0.30	0.32	S	0.45	0.32	0.30	0.32	0.35	0.34	0.35	0.45	0.37	0.34	0.32	0.40	0.27	0.45	0.34	24
24	0.32	0.30	0.30	0.32	0.35	0.35	0.30	0.35	0.32	0.29	S	0.45	0.32	0.35	0.32	0.32	0.32	0.30	0.32	0.30	0.27	0.35	0.29	0.27	0.27	0.45	0.32	24
25	0.27	0.29	0.30	0.27	0.27	0.29	0.27	0.32	0.35	S	0.40	0.29	0.30	0.29	0.30	0.27	0.29	0.29	0.29	0.29	0.27	0.34	0.24	0.29	0.24	0.40	0.29	24
26	0.32	0.32	0.34	0.35	0.35	0.33	0.33	0.32	S	0.51	0.37	0.34	0.35	0.32	0.32	0.32	0.32	0.32	0.32	0.30	0.34	0.29	0.29	0.29	0.29	0.51	0.33	24
27	0.32	0.27	0.27	0.27	0.27	0.29	0.30	S	0.35	0.32	0.29	0.29	0.35	0.33	0.29	0.27	0.25	0.29	0.29	0.27	0.32	0.32	0.27	0.27	0.25	0.35	0.29	24
28	0.32	0.32	0.30	0.32	0.32	0.35	S	0.50	0.38	0.35	0.37	0.35	0.35	0.29	0.38	0.35	0.32	0.30	0.50	0.29	0.35	**2.11**	1.76	0.32	0.29	**2.11**	0.49	24
HOURLY MAX	0.56	0.64	0.69	0.74	0.66	0.87	0.71	0.82	0.74	0.66	0.64	0.69	0.51	0.55	0.48	0.53	0.64	0.69	0.63	0.79	0.66	2.11	1.76	0.69				
HOURLY AVG	0.38	0.39	0.38	0.38	0.37	0.40	0.39	0.43	0.42	0.41	0.41	0.41	0.39	0.38	0.37	0.38	0.38	0.39	0.41	0.40	0.39	0.46	0.43	0.41				

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

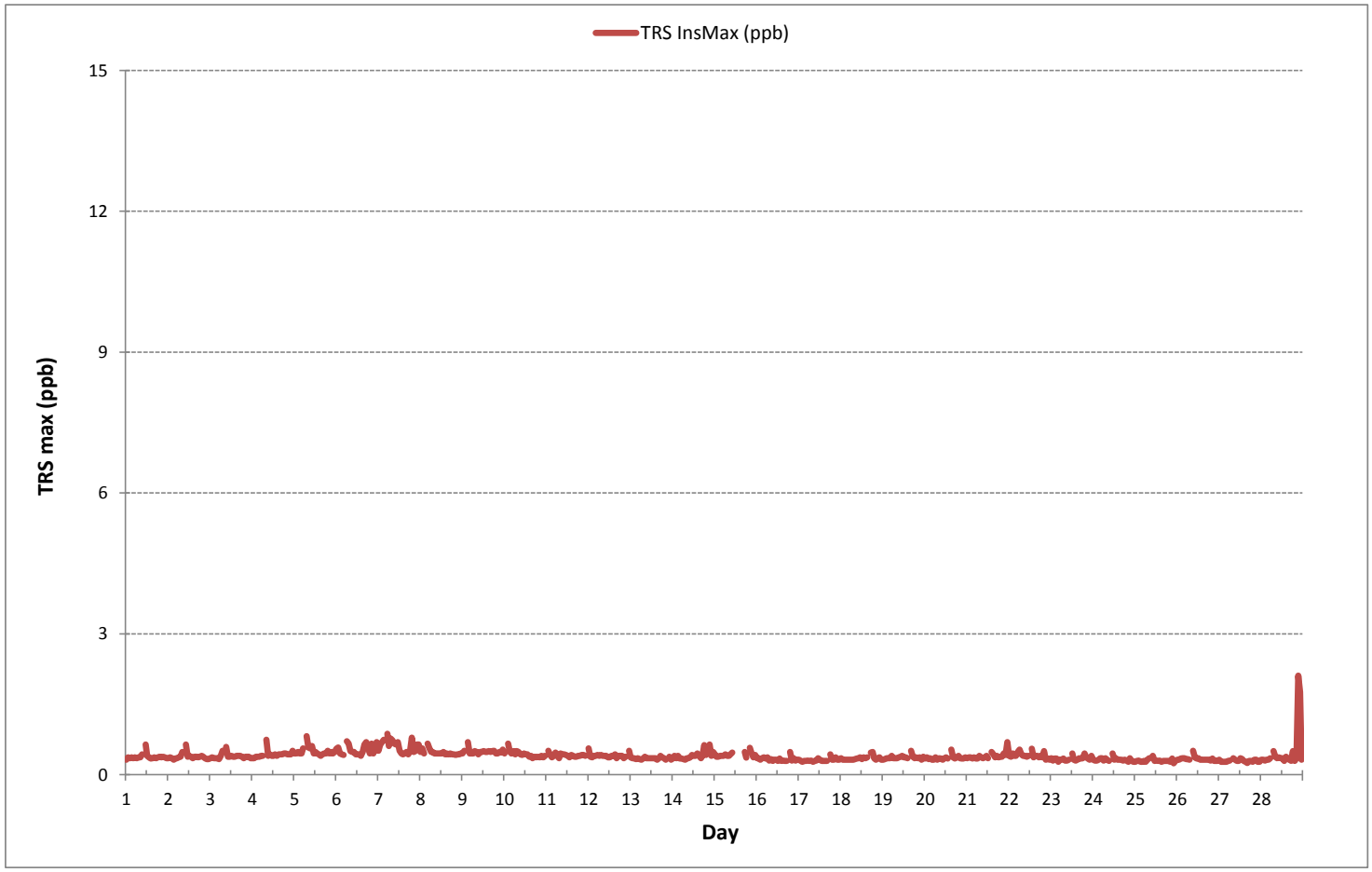
NUMBER OF NON-ZERO READINGS: 637

MAXIMUM INSTANTANEOUS VALUE: 2.11 ppb @ HOUR 21 ON DAY 28

IZS CALIBRATION TIME: 29 hrs
MONTHLY CALIBRATION TIME: 6 hrs
STANDARD DEVIATION: 0.13

OPERATIONAL TIME: 672 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	2.33	2.36	2.28	2.37	2.46	2.37	2.50	2.26	2.41	2.31	S	2.06	2.30	2.21	2.38	2.19	2.23	2.16	2.31	2.27	2.11	2.50	2.23	2.28	2.06	2.50	2.30	24
2	1.97	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.97	S	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.15	1.98	1.98	1.95	2.15	1.97	24
3	2.21	2.18	2.14	2.21	2.62	2.61	1.98	1.98	S	2.10	2.31	1.99	1.98	1.98	1.98	1.99	1.99	2.00	2.00	1.99	1.99	1.99	2.00	1.99	1.98	2.62	2.10	24
4	1.99	1.99	1.99	1.99	1.99	2.00	2.00	S	2.00	2.01	2.01	2.11	2.30	2.01	2.34	2.32	2.49	2.47	2.07	2.06	2.06	2.05	2.05	2.05	1.99	2.49	2.10	24
5	2.07	2.06	2.04	2.03	2.03	2.05	S	2.08	2.09	2.14	2.11	2.06	2.02	2.00	2.00	1.99	2.03	2.23	2.05	2.06	2.60	3.10	2.15	2.53	1.99	3.10	2.15	24
6	2.42	2.14	2.12	2.09	2.05	S	2.05	2.02	2.01	2.01	2.00	2.09	2.16	1.98	2.16	1.99	1.99	2.17	2.01	1.98	2.01	2.00	1.99	1.99	1.98	2.42	2.06	24
7	X	X	X	X	X	X	X	X	X	X	S	S	2.49	2.10	2.39	2.02	3.38	3.42	4.42	2.00	1.99	2.00	2.00	2.00	1.99	4.42	2.52	14
8	**4.67**	2.05	2.03	S	2.04	2.03	2.00	2.02	2.03	2.08	3.07	2.40	2.01	2.02	2.20	2.30	2.00	2.00	2.03	2.05	2.04	2.07	2.03	2.02	2.00	**4.67**	2.23	24
9	2.02	2.02	S	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.04	2.02	2.03	2.03	2.03	2.03	2.02	2.04	2.02	24
10	2.03	S	2.01	2.01	1.99	1.98	2.00	1.99	1.98	1.98	2.29	2.63	2.45	2.15	2.15	2.37	1.94	1.94	1.98	1.95	1.95	1.95	1.95	1.95	1.94	2.63	2.07	24
11	S	2.21	2.68	2.41	1.97	1.97	1.96	1.97	2.00	2.02	2.08	2.10	2.08	2.17	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	S	1.96	2.68	2.07	24
12	1.97	1.97	1.98	2.00	2.02	2.02	2.03	2.01	2.01	2.01	2.01	2.01	1.99	1.99	1.99	1.99	1.98	1.98	1.99	1.98	1.97	1.97	S	1.96	1.96	2.03	1.99	24
13	1.93	1.93	1.92	1.92	1.92	1.91	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.90	1.91	1.99	1.92	1.93	S	1.91	1.92	1.90	1.99	1.92	24
14	1.93	1.94	2.04	1.95	1.96	2.06	2.04	2.02	2.08	2.05	2.26	2.14	2.26	2.31	2.27	2.57	2.03	2.02	Y	1.99	S	1.99	2.00	2.00	1.93	2.57	2.09	23
15	2.01	2.02	1.99	2.10	2.07	2.01	2.01	2.01	2.01	2.00	2.02	C	C	C	C	Y	Y	2.02	2.04	S	2.03	2.02	2.03	2.01	1.99	2.10	2.02	22
16	1.99	1.98	2.40	2.76	2.41	2.54	1.98	2.00	2.15	2.20	2.09	2.26	2.36	2.20	2.37	2.13	2.08	2.35	S	2.01	2.07	2.10	2.10	2.22	1.98	2.76	2.21	24
17	2.13	2.13	3.14	2.52	2.16	2.03	2.29	2.43	2.16	2.11	2.37	2.34	2.39	2.27	2.43	2.32	2.29	S	2.46	1.99	2.33	2.46	2.02	2.04	1.99	3.14	2.30	24
18	2.03	2.16	2.07	2.31	2.88	2.39	2.62	2.41	3.00	2.51	2.11	2.34	2.03	2.29	2.18	2.20	S	2.41	2.62	2.07	2.03	2.02	2.03	2.00	2.00	3.00	2.29	24
19	2.01	2.01	2.01	2.01	2.01	2.00	2.00	1.99	2.00	1.99	2.00	2.00	2.00	2.00	1.99	S	1.99	2.95	2.73	2.56	3.47	2.56	2.71	2.03	1.99	3.47	2.22	24
20	2.12	1.99	1.99	2.34	1.99	1.99	2.00	2.00	2.00	2.19	2.32	2.28	2.26	2.26	S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	2.34	2.08	24
21	1.99	2.00	2.01	2.01	2.00	2.00	2.01	2.01	2.02	2.02	2.02	2.01	2.11	S	2.50	2.38	2.43	2.08	2.00	2.07	2.01	2.01	2.41	2.48	1.99	2.50	2.11	24
22	2.61	2.22	2.12	2.40	2.62	1.99	2.00	2.01	2.00	2.00	2.00	2.00	S	2.01	2.01	2.01	2.01	2.01	2.02	2.06	2.00	1.99	1.99	1.99	1.99	2.62	2.09	24
23	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.99	1.99	1.96	S	1.95	1.95	1.95	1.95	1.94	1.96	1.98	2.04	1.95	1.98	1.98	1.98	1.94	2.04	1.97	24
24	2.12	1.97	2.05	2.01	2.03	2.09	2.19	2.00	3.11	2.67	S	2.10	2.11	2.30	1.97	1.96	1.96	2.11	1.98	1.98	1.98	1.98	1.99	1.99	1.96	3.11	2.12	24
25	1.99	1.97	1.98	1.97	2.15	2.44	3.34	2.94	2.75	S	2.11	2.33	2.32	2.34	2.36	2.60	2.65	2.98	3.32	2.41	2.00	1.99	2.00	2.07	1.97	3.34	2.39	24
26	2.11	2.14	2.15	2.08	2.09	2.09	2.11	2.08	S	1.99	2.00	2.01	2.01	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95	1.95	1.94	1.94	2.15	2.02	24
27	1.94	1.95	1.94	1.94	1.94	1.94	1.95	S	1.94	1.94	1.94	2.02	1.95	1.94	1.94	1.94	1.95	1.94	1.94	2.07	2.37	1.94	2.83	1.96	1.94	2.83	2.01	24
28	2.00	2.04	2.05	2.07	2.05	2.02	S	2.01	2.00	2.01	1.98	1.98	1.97	1.98	2.18	2.47	1.98	1.98	1.98	1.99	2.00	2.02	2.01	2.00	1.97	2.47	2.03	24
HOURLY MAX	4.67	2.36	3.14	2.76	2.88	2.61	3.34	2.94	3.11	2.67	3.07	2.63	2.49	2.34	2.50	2.60	3.38	3.42	4.42	2.56	3.47	3.10	2.83	2.53				
HOURLY AVG	2.18	2.05	2.12	2.13	2.13	2.10	2.12	2.08	2.15	2.09	2.12	2.13	2.13	2.09	2.14	2.14	2.12	2.19	2.23	2.05	2.10	2.10	2.09	2.05				

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

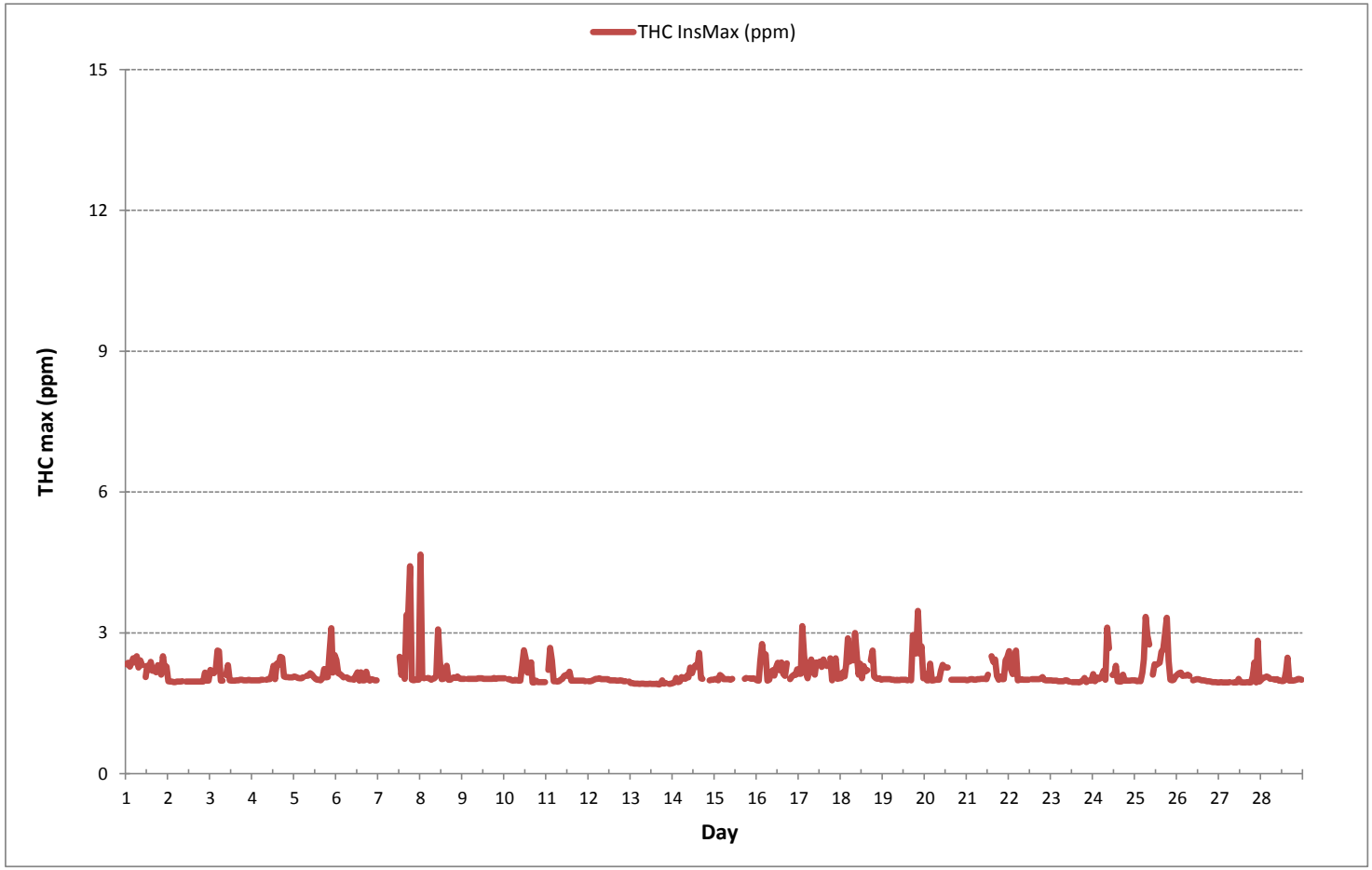
NUMBER OF NON-ZERO READINGS: 625

MAXIMUM INSTANTANEOUS VALUE: 4.67 ppm @ HOUR 0 ON DAY 8

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.27

OPERATIONAL TIME: 659 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	2.34	2.37	2.28	2.38	2.46	2.38	2.51	2.27	2.43	2.32	S	2.06	2.31	2.22	2.39	2.20	2.25	2.17	2.32	2.27	2.12	2.51	2.24	2.28	2.06	2.51	2.31	24
2	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	S	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.16	1.98	1.98	1.96	2.16	1.97	24
3	2.22	2.19	2.16	2.22	2.63	2.62	1.99	1.99	S	2.11	2.32	2.00	1.99	1.99	1.99	1.99	2.00	2.01	2.01	1.99	2.00	2.00	2.00	1.99	1.99	2.63	2.10	24
4	1.99	2.00	2.00	2.00	1.99	2.00	2.01	S	2.01	2.01	2.01	2.11	2.31	2.02	2.35	2.33	2.50	2.48	2.07	2.07	2.06	2.06	2.06	2.06	1.99	2.50	2.11	24
5	2.08	2.07	2.05	2.04	2.04	2.05	S	2.09	2.10	2.15	2.12	2.07	2.02	2.01	2.00	1.99	2.04	2.24	2.06	2.07	2.61	3.11	2.16	2.53	1.99	3.11	2.16	24
6	2.43	2.11	2.09	2.11	2.06	S	2.06	2.02	2.02	2.02	2.01	2.11	2.17	1.99	2.17	1.99	2.00	2.18	2.01	1.99	2.01	2.01	2.00	1.99	1.99	2.43	2.07	24
7	X	X	X	X	X	X	X	X	X	X	S	S	2.50	2.11	2.40	2.02	3.40	3.44	4.43	2.01	1.99	2.01	2.01	2.01	1.99	4.43	**2.53**	14
8	**4.68**	2.06	2.04	S	2.05	2.04	2.01	2.02	2.04	2.09	3.08	2.41	2.02	2.02	2.21	2.31	2.01	2.01	2.03	2.06	2.04	2.08	2.03	2.02	2.01	**4.68**	2.23	24
9	2.03	2.03	S	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	2.03	2.03	2.04	2.03	2.04	2.03	2.04	2.04	2.02	2.04	2.03	24
10	2.04	S	2.01	2.02	2.00	1.99	2.01	2.00	1.99	1.98	2.30	2.64	2.45	2.17	2.16	2.39	1.94	1.94	1.99	1.95	1.95	1.95	1.95	1.95	1.94	2.64	2.08	24
11	S	2.22	2.70	2.43	1.98	1.97	1.97	1.98	2.00	2.03	2.08	2.10	2.09	2.18	1.99	1.99	1.99	1.99	1.98	1.98	1.99	1.98	1.97	S	1.97	2.70	2.07	24
12	1.98	1.98	1.99	2.01	2.02	2.03	2.04	2.02	2.02	2.01	2.02	2.02	2.00	1.99	2.00	1.99	1.99	1.98	1.99	1.98	1.97	1.97	S	1.96	1.96	2.04	2.00	24
13	1.93	1.93	1.92	1.93	1.92	1.91	1.92	1.92	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.90	1.91	2.00	1.92	1.94	S	1.91	1.92	1.90	2.00	1.92	24
14	1.93	1.94	2.04	1.95	1.96	2.07	2.04	2.03	2.08	2.05	2.27	2.15	2.26	2.32	2.28	2.58	2.04	2.02	Y	2.01	S	2.00	2.00	2.00	1.93	2.58	2.09	23
15	2.02	2.02	2.00	2.00	2.01	2.01	2.02	2.02	2.01	2.01	2.03	C	C	C	C	Y	Y	2.03	2.04	S	2.03	2.03	2.04	2.01	2.00	2.04	2.02	22
16	2.00	1.99	2.41	2.78	2.43	2.55	1.99	2.01	2.16	2.21	2.09	2.28	2.37	2.21	2.38	2.14	2.09	2.36	S	2.02	2.08	2.11	2.11	2.24	1.99	2.78	2.22	24
17	2.15	2.15	3.16	2.53	2.17	2.03	2.30	2.45	2.18	2.12	2.38	2.35	2.41	2.27	2.45	2.33	2.29	S	2.46	2.00	2.35	2.46	2.03	2.05	2.00	3.16	2.31	24
18	2.04	2.17	2.08	2.32	2.89	2.40	2.63	2.43	3.01	2.52	2.13	2.35	2.04	2.29	2.19	2.21	S	2.42	2.63	2.07	2.04	2.03	2.03	2.00	2.00	3.01	2.30	24
19	2.01	2.02	2.01	2.02	2.02	2.01	2.01	2.00	2.00	2.00	2.01	2.00	2.01	2.01	2.00	S	2.00	2.97	2.74	2.57	3.49	2.57	2.73	2.04	2.00	3.49	2.23	24
20	2.14	1.99	2.00	2.35	2.00	2.00	2.01	2.00	2.01	2.20	2.32	2.29	2.27	2.27	S	2.01	2.01	2.01	2.00	2.01	2.01	2.00	2.01	2.00	1.99	2.35	2.08	24
21	2.00	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.02	2.03	2.03	2.02	2.12	S	2.50	2.39	2.44	2.09	2.01	2.07	2.02	2.02	2.42	2.49	2.00	2.50	2.12	24
22	2.62	2.24	2.13	2.41	2.63	2.00	2.01	2.01	2.01	2.01	2.01	2.01	S	2.01	2.01	2.02	2.02	2.01	2.03	2.07	2.01	2.00	2.00	2.00	2.00	2.63	2.10	24
23	1.99	1.99	1.99	1.98	1.97	1.98	1.98	1.98	1.99	1.99	1.96	S	1.96	1.95	1.95	1.95	1.94	1.96	1.99	2.05	1.95	1.98	1.98	1.99	1.94	2.05	1.98	24
24	2.14	1.97	2.05	2.02	2.03	2.10	2.20	2.01	3.13	2.68	S	2.11	2.12	2.31	1.97	1.96	1.97	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.96	3.13	2.12	24
25	2.00	1.97	1.98	1.97	2.16	2.45	3.36	2.96	2.76	S	2.11	2.33	2.33	2.35	2.37	2.61	2.67	2.99	3.34	2.43	2.00	2.00	2.01	2.08	1.97	3.36	2.40	24
26	2.12	2.15	2.16	2.10	2.10	2.10	2.11	2.09	S	2.00	2.01	2.02	2.02	2.01	2.00	2.00	1.99	1.97	1.97	1.96	1.95	1.95	1.95	1.94	1.94	2.16	2.03	24
27	1.94	1.95	1.94	1.94	1.94	1.94	1.95	S	1.94	1.94	1.94	2.03	1.95	1.94	1.94	1.95	1.95	1.94	1.94	2.07	2.38	1.95	2.84	1.97	1.94	2.84	2.01	24
28	2.01	2.05	2.06	2.07	2.06	2.03	S	2.02	2.01	2.01	1.98	1.99	1.98	1.99	2.19	2.48	1.99	1.99	1.99	1.99	2.00	2.02	2.02	2.01	1.98	2.48	2.04	24
HOURLY MAX	4.68	2.37	3.16	2.78	2.89	2.62	3.36	2.96	3.13	2.68	3.08	2.64	2.50	2.35	2.50	2.61	3.40	3.44	4.43	2.57	3.49	3.11	2.84	2.53				
HOURLY AVG	2.18	2.06	2.12	2.14	2.13	2.10	2.13	2.09	2.15	2.10	2.13	2.13	2.14	2.10	2.15	2.14	2.13	2.19	2.23	2.06	2.11	2.11	2.09	2.06				

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

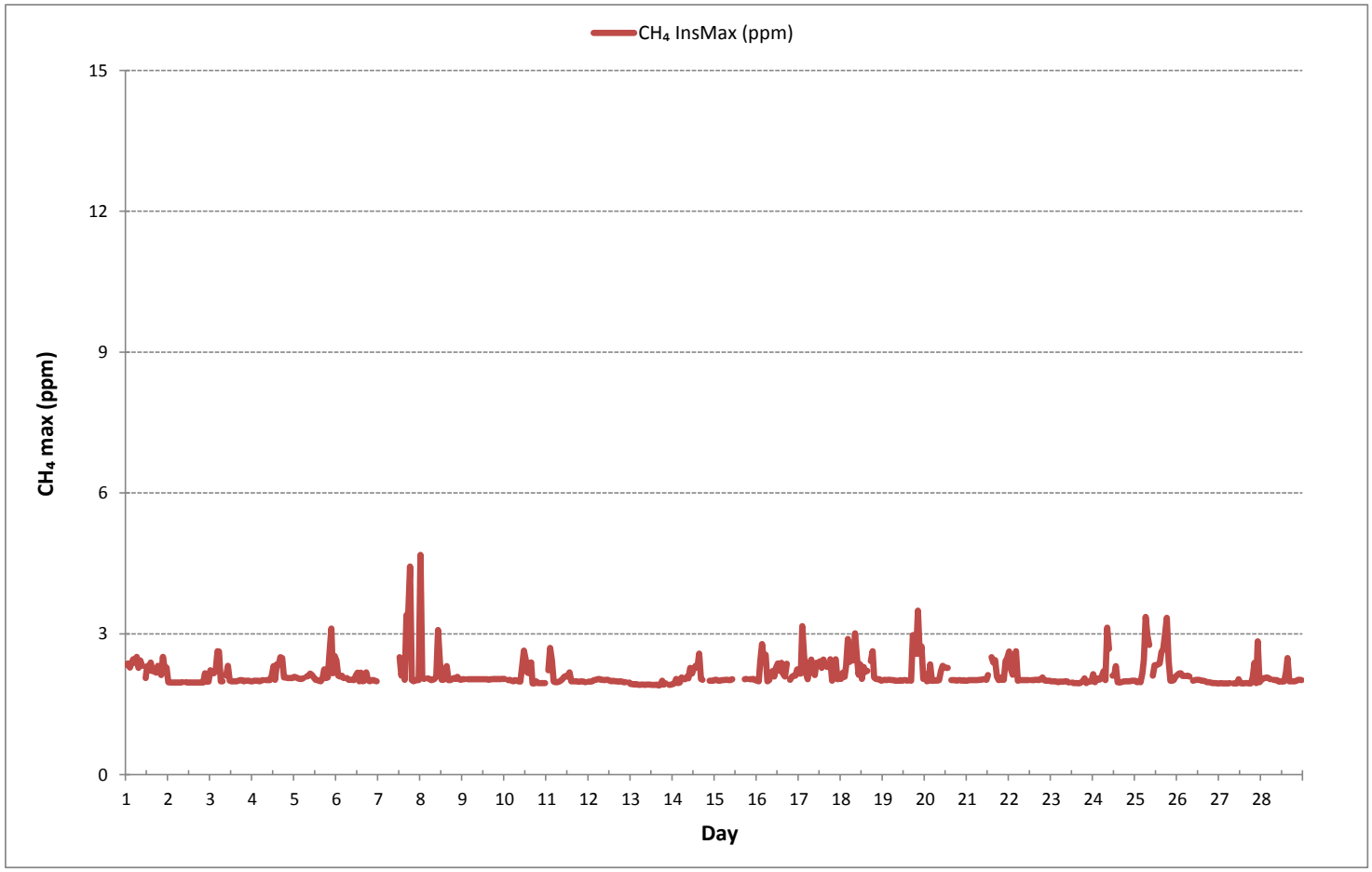
NUMBER OF NON-ZERO READINGS: 625

MAXIMUM INSTANTANEOUS VALUE: 4.68 ppm @ HOUR 0 ON DAY 8

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.27

OPERATIONAL TIME: 659 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	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	0.01	0.00	24
2	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	0.01	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
3	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
4	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
5	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.04	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.00	24
6	0.06	0.06	0.06	0.00	0.00	S	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	0.00	0.00	0.00	0.00	0.00	0.06	0.01	24
7	X	X	X	X	X	X	X	X	X	X	S	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	14
8	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
9	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
10	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
11	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
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.02	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Y	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	23
15	0.00	0.00	0.00	0.12	0.08	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	Y	Y	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.12	0.01	22
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	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	0.02	0.00	24
23	0.01	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	0.01	0.00	24
24	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	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	24
25	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
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	0.00	0.00	0.01	0.00	24
27	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
28	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
HOURLY MAX	0.06	0.06	0.06	0.12	0.08	0.00	0.01	0.02	0.01	0.04	0.00	0.02	0.00	0.03	0.01	0.01	0.01	0.16	0.00	0.00	0.04	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	0.01	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

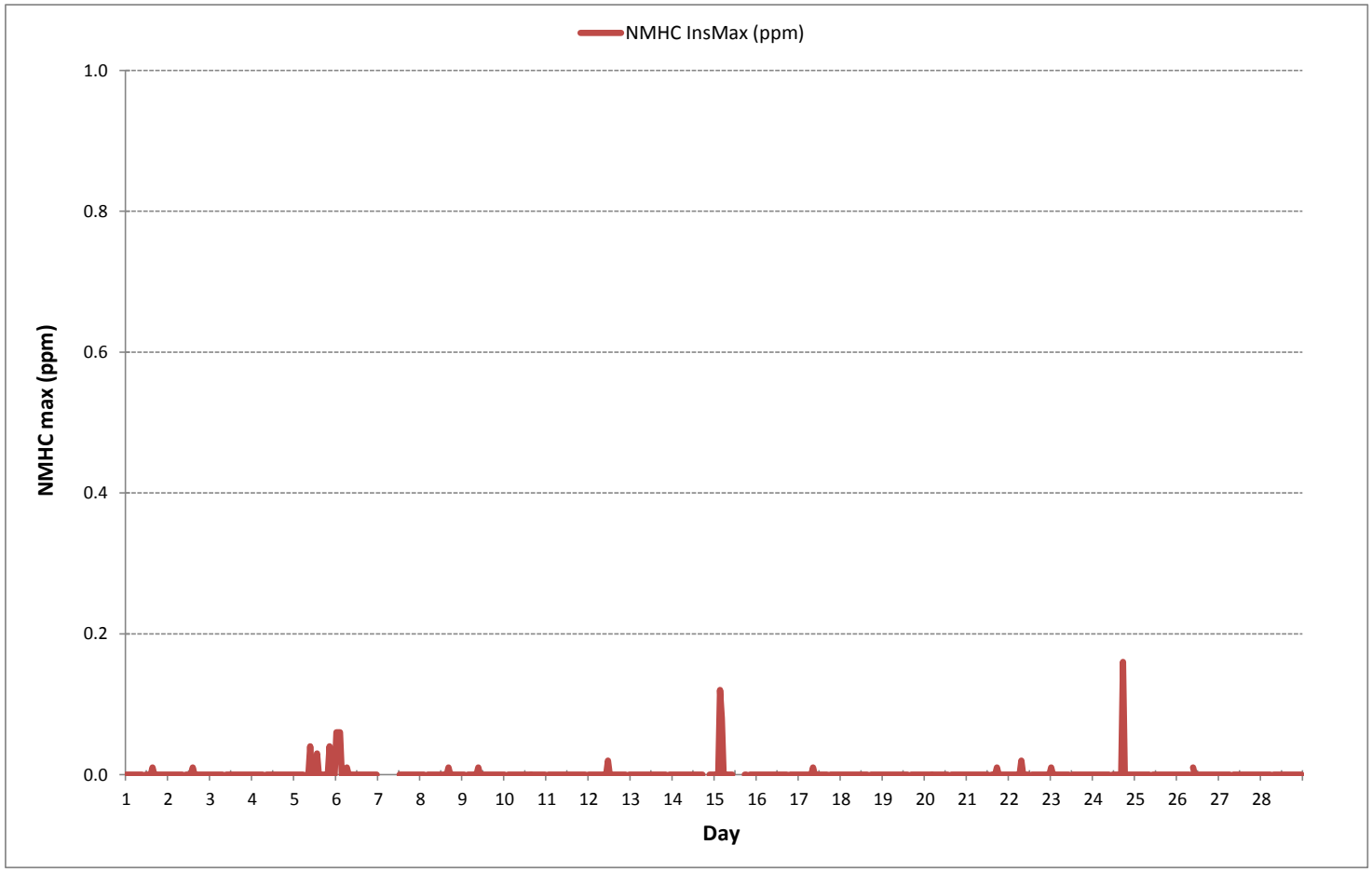
NUMBER OF NON-ZERO READINGS: 20

MAXIMUM INSTANTANEOUS VALUE: 0.16 ppm @ HOUR 17 ON DAY 24

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.01

OPERATIONAL TIME: 659 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	7.8	8.9	8.1	9.6	8.8	12.4	10.0	10.7	10.0	11.7	11.1	12.2	13.1	13.4	15.6	13.7	12.4	14.9	16.1	12.8	12.2	9.3	6.7	6.8	6.7	16.1	11.2	24
2	7.2	6.6	6.2	6.2	7.2	7.0	7.3	9.8	9.6	12.1	13.5	14.0	16.7	22.0	19.2	18.7	17.8	17.9	14.5	9.7	10.5	12.5	12.3	12.9	6.2	22.0	12.1	24
3	14.1	17.3	16.5	16.0	10.8	6.4	3.1	10.1	10.9	8.0	17.2	16.1	13.5	15.0	23.4	21.7	17.8	21.8	19.9	19.2	21.7	21.7	18.8	19.7	3.1	23.4	15.9	24
4	20.6	23.0	17.9	15.2	15.6	10.9	11.0	9.9	9.4	9.9	8.8	6.9	13.7	16.9	9.8	8.9	6.3	7.4	5.5	7.9	8.2	5.5	4.8	4.6	4.6	23.0	10.8	24
5	5.4	8.7	7.2	7.7	8.5	10.2	7.7	12.8	12.8	12.0	15.4	14.1	20.4	21.6	17.8	17.7	12.7	10.7	9.4	10.8	3.9	4.4	3.8	9.2	3.8	21.6	11.0	24
6	7.6	4.6	4.1	6.5	6.5	6.8	5.4	4.7	4.9	7.7	14.6	14.2	13.8	16.6	10.7	9.0	3.0	2.9	2.1	2.6	3.6	5.3	4.4	3.4	2.1	16.6	6.9	24
7	2.7	3.8	3.2	9.8	3.7	3.5	2.1	5.5	3.4	3.7	6.2	5.0	3.3	3.9	8.2	9.3	7.0	10.5	7.1	4.7	2.7	4.3	3.9	4.0	2.1	10.5	5.1	24
8	2.5	4.0	3.9	3.9	2.3	2.1	3.2	4.3	7.5	5.0	5.5	8.0	8.3	8.4	9.3	7.8	11.0	10.9	12.1	14.1	15.0	10.4	12.2	10.2	2.1	15.0	7.6	24
9	13.0	12.2	13.3	10.5	11.6	13.0	12.5	12.2	13.7	16.7	20.2	19.0	17.6	18.1	15.5	17.3	18.8	15.5	11.4	12.4	12.3	10.3	10.7	9.7	9.7	20.2	14.1	24
10	9.1	5.6	8.8	11.7	10.2	11.2	7.5	9.5	8.6	6.8	8.9	8.9	19.0	21.9	20.3	17.5	19.9	19.0	22.0	33.2	30.9	37.4	28.7	30.3	5.6	37.4	17.0	24
11	20.4	13.2	9.7	8.9	3.7	5.1	5.7	6.4	4.8	5.1	5.0	5.1	11.3	14.7	20.1	19.3	20.4	14.9	13.4	12.5	11.9	14.0	12.3	18.5	3.7	20.4	11.5	24
12	20.3	17.9	21.5	24.7	26.4	20.8	21.6	24.4	25.8	27.0	27.7	27.9	26.2	23.1	25.4	25.1	25.0	22.0	26.0	23.9	23.2	21.1	26.0	22.7	17.9	27.9	**24.0**	24
13	23.0	22.2	20.8	18.8	23.7	26.5	30.4	30.7	22.5	21.2	16.5	21.1	18.4	8.7	18.5	24.5	15.9	16.4	24.2	14.5	18.3	41.0	42.3	**51.4**	8.7	**51.4**	23.8	24
14	43.6	40.5	39.3	38.0	37.0	32.0	36.1	27.6	25.3	24.6	19.8	15.5	18.3	22.7	15.8	10.9	8.3	9.4	7.2	12.4	11.9	7.2	6.2	7.7	6.2	43.6	21.6	24
15	7.5	8.2	8.4	10.3	12.0	12.5	9.1	11.2	9.5	15.0	26.4	26.6	23.8	23.3	24.1	19.2	22.0	21.0	19.8	18.0	13.4	9.7	12.5	10.8	7.5	26.6	15.6	24
16	12.7	14.8	7.7	9.3	13.4	13.9	20.0	21.4	17.6	19.7	16.2	27.1	30.9	39.4	37.9	35.6	33.3	21.7	13.9	17.7	18.6	19.7	17.4	21.4	7.7	39.4	20.9	24
17	19.6	20.1	17.6	18.8	8.7	9.3	15.0	17.5	12.2	15.5	23.4	29.1	23.3	33.2	30.2	23.6	31.5	28.6	10.6	5.1	8.2	10.8	13.1	9.3	5.1	33.2	18.1	24
18	18.4	13.8	14.1	22.5	16.5	10.9	14.6	17.0	10.7	13.8	14.8	19.5	19.1	22.5	19.7	17.6	17.4	30.6	13.8	7.0	17.1	17.6	13.7	8.4	7.0	30.6	16.3	24
19	9.3	15.6	17.4	19.6	15.1	11.3	15.5	13.7	11.2	16.9	17.0	20.4	21.7	23.4	22.6	19.3	24.5	21.7	20.6	17.9	9.7	12.4	11.0	15.3	9.3	24.5	16.8	24
20	21.9	24.0	16.2	15.0	13.4	13.4	16.4	13.4	13.4	13.7	15.2	17.7	24.5	23.4	17.8	12.9	16.0	16.6	13.4	11.3	11.1	12.1	10.6	13.2	10.6	24.5	15.7	24
21	12.9	17.0	17.7	16.8	19.6	23.5	21.4	21.1	14.4	12.0	14.2	10.8	9.4	22.0	26.5	23.2	16.9	11.7	11.9	14.8	13.0	15.6	19.7	7.6	7.6	26.5	16.4	24
22	9.7	17.8	17.3	12.9	10.0	6.9	6.7	7.6	7.1	12.7	12.5	13.9	17.4	26.2	23.1	24.4	23.4	21.2	12.9	8.2	8.3	19.1	23.1	32.4	6.7	32.4	15.6	24
23	26.0	31.5	26.2	28.3	24.4	22.4	26.4	26.0	23.2	21.9	24.9	24.8	26.3	22.1	24.7	25.9	18.2	15.6	15.0	8.6	9.4	14.7	12.1	25.0	8.6	31.5	21.8	24
24	30.4	29.1	24.4	26.2	20.5	26.1	22.0	20.6	6.2	7.7	10.6	10.8	14.6	9.8	8.4	10.8	9.6	6.4	9.3	10.1	9.7	9.0	11.8	8.2	6.2	30.4	14.7	24
25	14.1	11.0	7.7	9.5	8.4	5.9	4.1	5.2	12.7	15.0	18.9	17.6	14.6	17.8	14.7	13.4	10.9	9.0	5.6	2.7	3.8	4.9	4.7	6.5	2.7	18.9	9.9	24
26	6.9	9.0	7.5	9.1	8.3	7.7	7.8	8.7	8.0	17.7	14.7	19.4	20.8	28.0	27.1	27.0	18.8	20.6	25.0	24.9	34.1	25.1	40.3	37.0	6.9	40.3	18.9	24
27	37.4	28.1	26.7	20.9	22.6	22.2	30.2	23.4	18.8	17.2	18.7	18.2	18.9	27.1	25.7	30.7	37.7	16.5	13.2	11.0	16.7	9.3	4.1	10.9	4.1	37.7	21.1	24
28	6.2	8.6	7.0	8.1	6.5	8.6	9.1	5.7	5.4	6.4	13.3	11.3	12.0	7.9	11.4	13.5	12.2	10.3	5.7	6.4	4.0	8.7	12.4	20.2	4.0	20.2	9.2	24
HOURLY MAX	43.6	40.5	39.3	38.0	37.0	32.0	36.1	30.7	25.8	27.0	27.7	29.1	30.9	39.4	37.9	35.6	37.7	30.6	26.0	33.2	34.1	41.0	42.3	51.4				
HOURLY AVG	15.4	15.6	14.2	14.8	13.4	12.9	13.6	14.0	12.1	13.5	15.4	16.3	17.5	19.8	19.4	18.5	17.5	15.9	13.6	12.7	13.0	14.0	14.3	15.6				

STATUS FLAG CODES

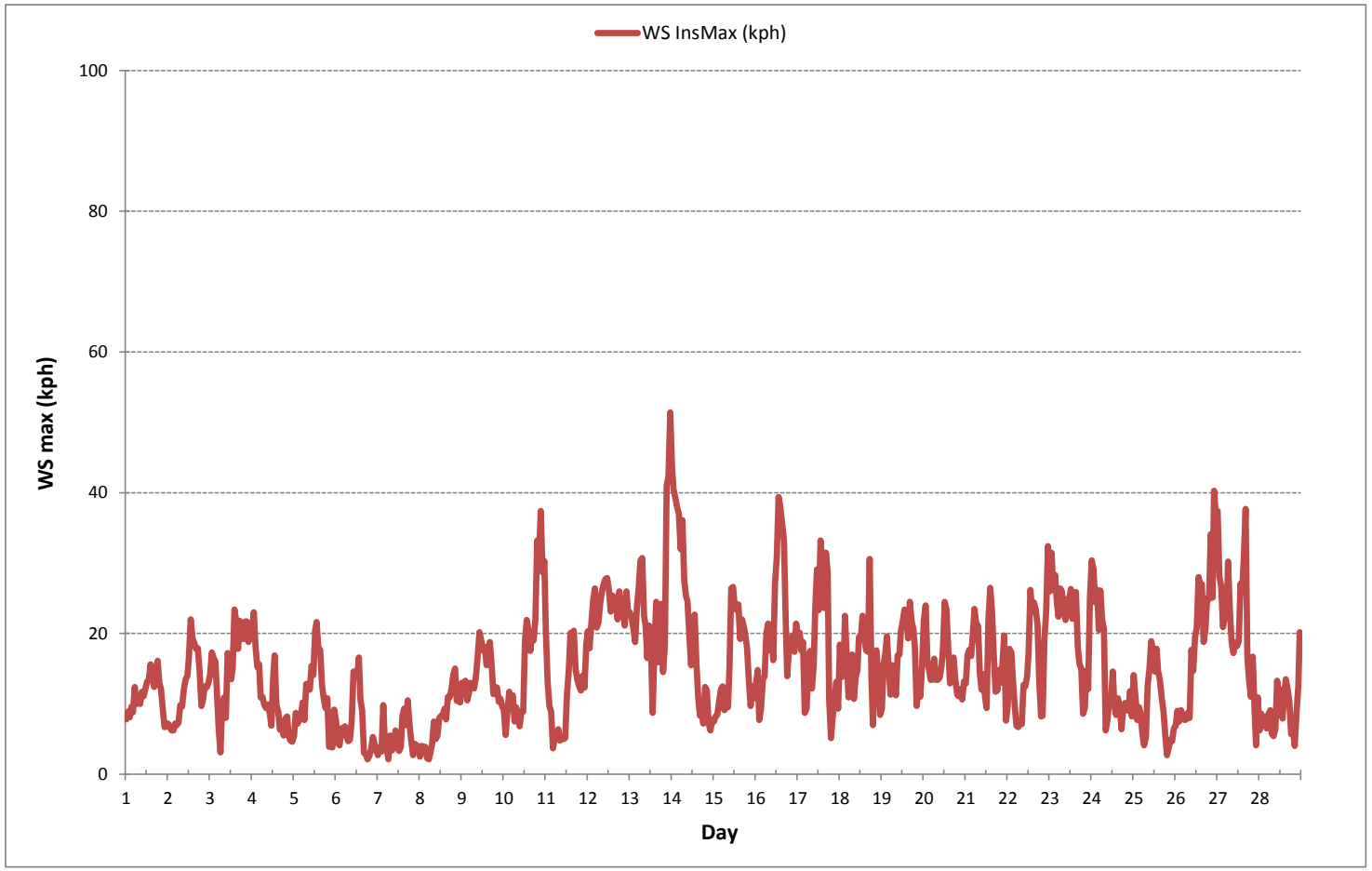
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE: 51.4 kph @ HOUR 23 ON DAY 13

OPERATIONAL TIME: 672 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	**Three Creeks 986b Station**
Name of the Representative of the Person Responsible	**Position / Title of the Representative of the Person Responsible**
Mike Bisaga / Lily Lin	**Technical Program Managers**
Is an External Party Certifying the Report?	
■ **Yes** ☐ **No**	
Name of External Person Certifying the Report	**Position / Title of External Person Certifying the Report**
Cheri Sinclair	**Supervisor, Customer Service, Air Services**
Company Name for the External Person Certifying the Report	**Identification of Qualifications / Professional Designations of the External Person Certifying the Report**
Maxxam Analytics, A Bureau Veritas Group Company	**B.Sc.**

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

Cheri Sinclair

Signature of the External Person Certifying the Report

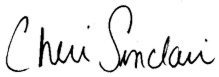
21-03-2018

Report Issued Date (dd-mm-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client:	Peace River Area Monitoring Program Committee	**Project #:**	8449-2018-02-67-C
Site:	Three Creeks 986b Station	**Contact:**	Karla Reesor

Level 0 Preliminary Verification		**Date**	March 15, 2018
Level 1 Primary Validation		**Date**	March 15, 2018
Level 2 Final Validation		**Date**	March 20, 2018
Level 3 Independent Data Review		**Date**	March 21, 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.