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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

THREE CREEKS 986B STATION

JOB #: 8449-2018-04-67-C

April 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **May 24, 2018**

Prepared by:

Wunmi Adekanmbi, M.Sc., EPt, PMP
Project Team Lead, Customer Service, Air Services

Reviewed by:

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

SUMMARY

In April 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 non-compliance parameters, as requested by the PRAMP Committee.

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

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

TRS: An as-found response check was completed on April 30, to assess analyzer performance after a slight biased high drift in span response, incurring two hours of downtime.

THC/CH_4/NMHC: The NMHC span response exhibited an abrupt biased high drift on April 22. As corrective actions, a repeat zero-span check and a repeat calibration were performed on April 23 and April 24, respectively. Five hours of downtime were incurred due to the additional quality checks.

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	2	1	8	0.3	NNW	1	1	100.0
TRS (ppb)	-	-	-	-	0.29	0.52	1	7	2.4	ESE	0.35	26	99.7
THC (ppm)	-	-	-	-	1.98	2.48	1	7	2.4	ESE	2.09	1	99.3
CH_4 (ppm)	-	-	-	-	1.98	2.48	1	7	2.4	ESE	2.09	1	99.3
NMHC (ppm)	-	-	-	-	0.00	0.01	26	2	1	E	0.00	1	99.3
RELATIVE HUMIDITY (%)	-	-	-	-	59	99	16	22	6	N	93	17	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	942	960	5	9	8.6	NNW	959	5	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	0.7	23.1	27	16	10.0	SSW	13.9	27	100.0
STATION TEMPERATURE (°C)	-	-	-	-	23.1	25.2	16	6	8.2	N	23.8	17	100.0
VECTOR WS (kph)	-	-	-	-	1.2	21.4	30	19	-	NW	10.6	19	100.0
VECTOR WD (sec)	-	-	-	-	219 (SW)	-	-	-	-	-	-	-	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	April

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	0.002	ppm	0	0.001	ppm	0
TRS	99.7	0.001	ppm	-	0.000	ppm	-
THC	99.3	2.48	ppm	-	2.09	ppm	-
CH_4	99.3	2.48	ppm	-	2.09	ppm	-
NMHC	99.3	0.01	ppm	-	0.00	ppm	-
RH	100.0	99	%	-	93	%	-
BP	100.0	960	mb	-	959	mb	-
Ambient TPX	100.0	23.1	°C	-	13.9	°C	-
Station TPX	100.0	25.2	°C	-	23.8	°C	-
Wind Speed	100.0	21.4	kph	-	10.6	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 April 10.

TOTAL REDUCED SULPHUR (TRS)

- Operational time for the monitoring period was 99.7%, equivalent to two hours of downtime.
- The routine monthly calibration was performed on April 10.
- An as-found response check was completed on April 30 to assess analyzer performance after a slight drift in span response towards the upper acceptance limit on April 28. The results met AMD requirements. Two hours of downtime were incurred due to the additional quality check.
- The case fan was replaced during the April 30 site visit.

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

- Operational time for the monitoring period was 99.3%, equivalent to five hours of downtime.
- The routine monthly calibration was performed on April 10. The fuel (H_2), carrier (N_2) and span gas cylinders were replaced during this site visit.
- The NMHC span response exhibited an abrupt biased high drift on April 22. A repeat zero-span check conducted on April 23 showed the same trend. This prompted a site visit on April 24 where a repeat calibration was successfully completed as a corrective action. Five hours of downtime were incurred due to this event.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month. A trigger test was performed during the routine monthly calibration on April 10 to assess the effectiveness of the canister system.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 100%.
- The routine annual wind system audit was performed on April 4.
- 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 April 10. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.
- A pressure sensor audit was conducted on April 10. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on April 10. 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 technicians were Christopher Wesson and Limin Li.

3.0 Plant Monthly Required AMD Summary

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

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

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - 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

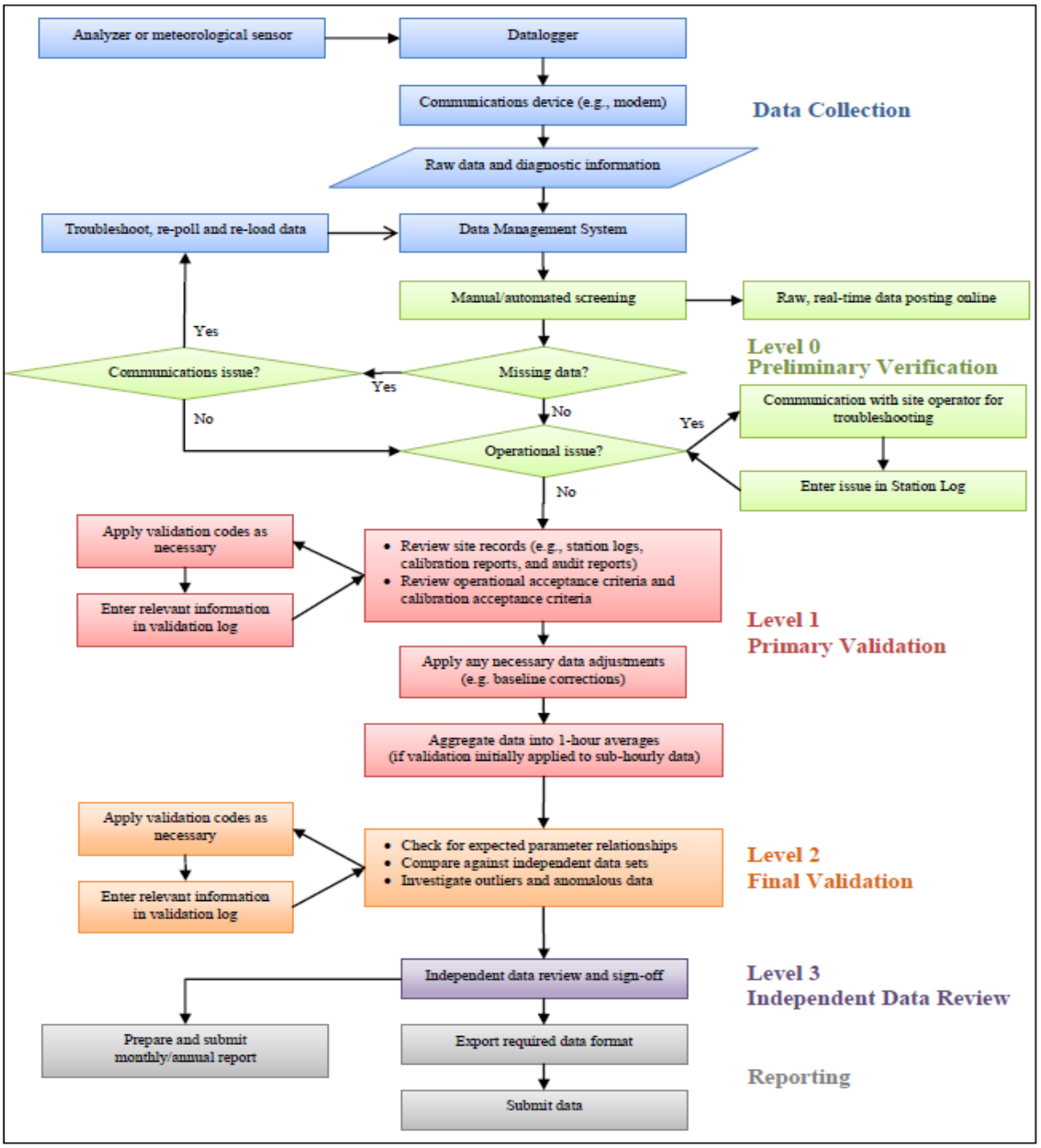
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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)

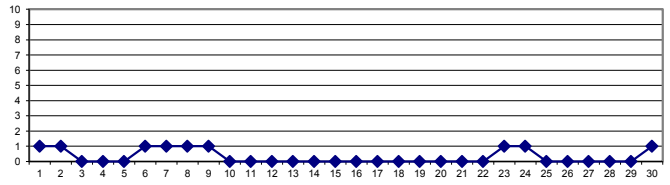
HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY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

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

24 HR AVERAGES April 2018

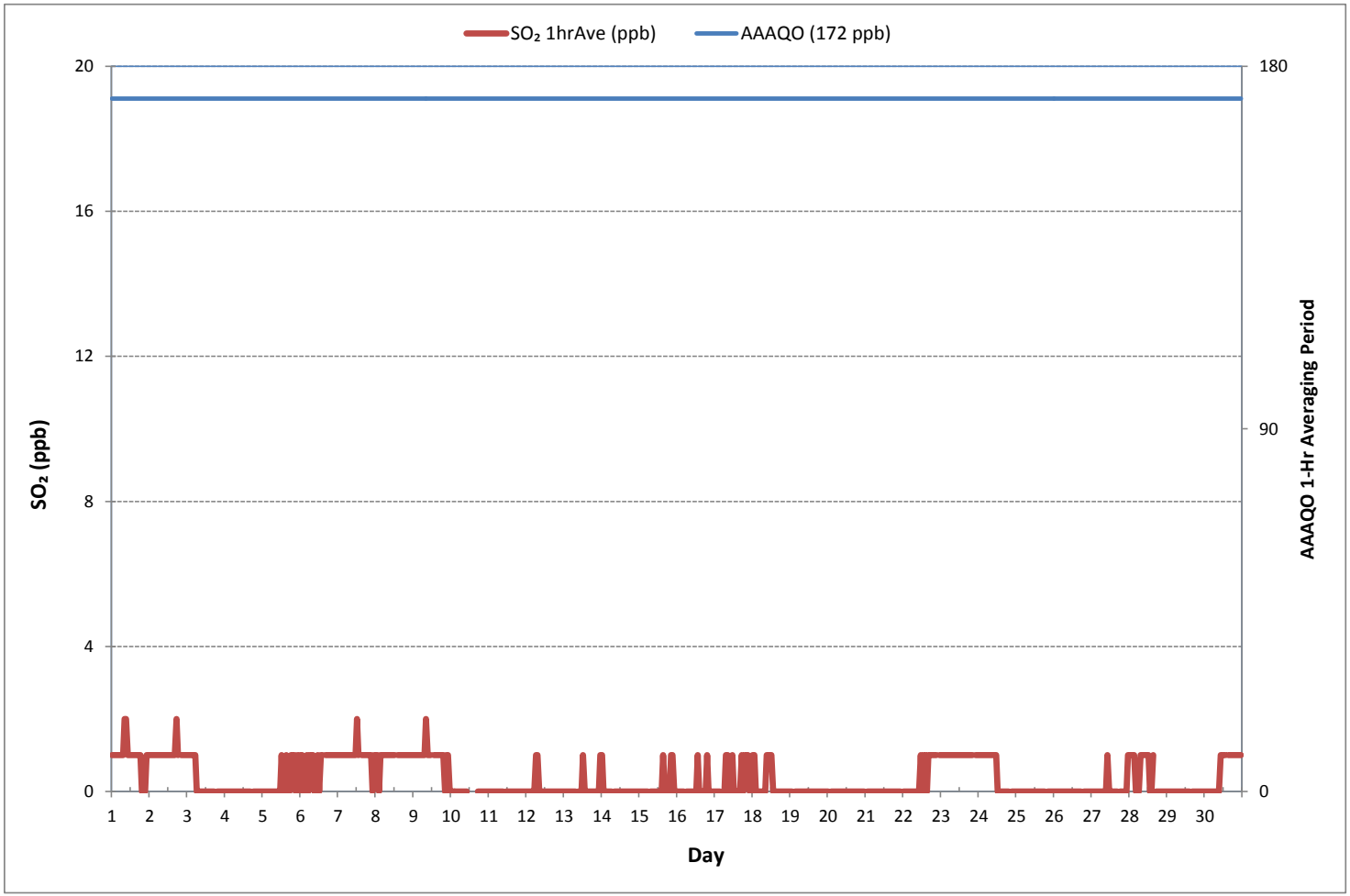


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0					
NUMBER OF 24-HR EXCEEDANCES:	0					
NUMBER OF NON-ZERO READINGS:	232					
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	19	ON DAY	1
MAXIMUM 1-HR AVERAGE:	2	ppb	@ HOUR	8	ON DAY	1
MAXIMUM 24-HR AVERAGE:	1	ppb			ON DAY	1

IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



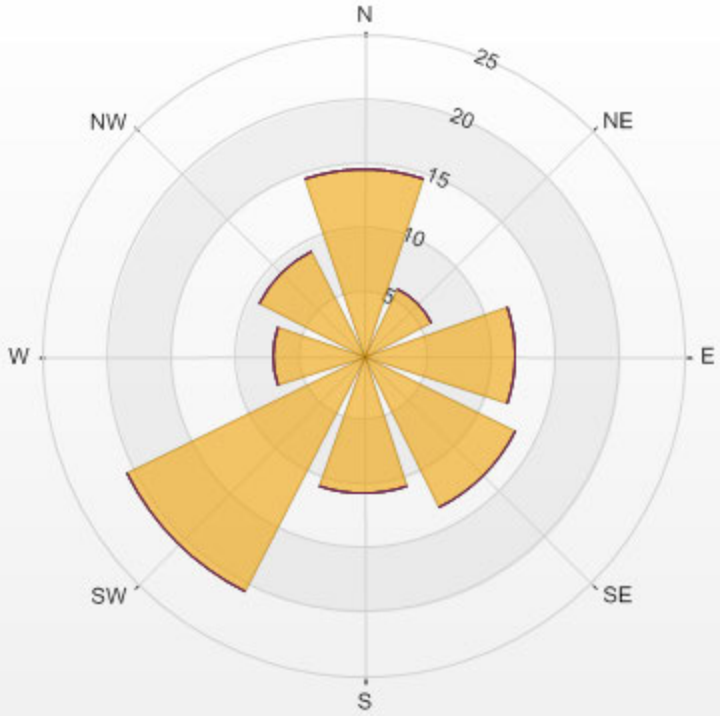
Wind: PRAMP_986
Poll.: PRAMP_986-SO_2[ppb]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.73% Calm Avg: 0.38 [ppb]

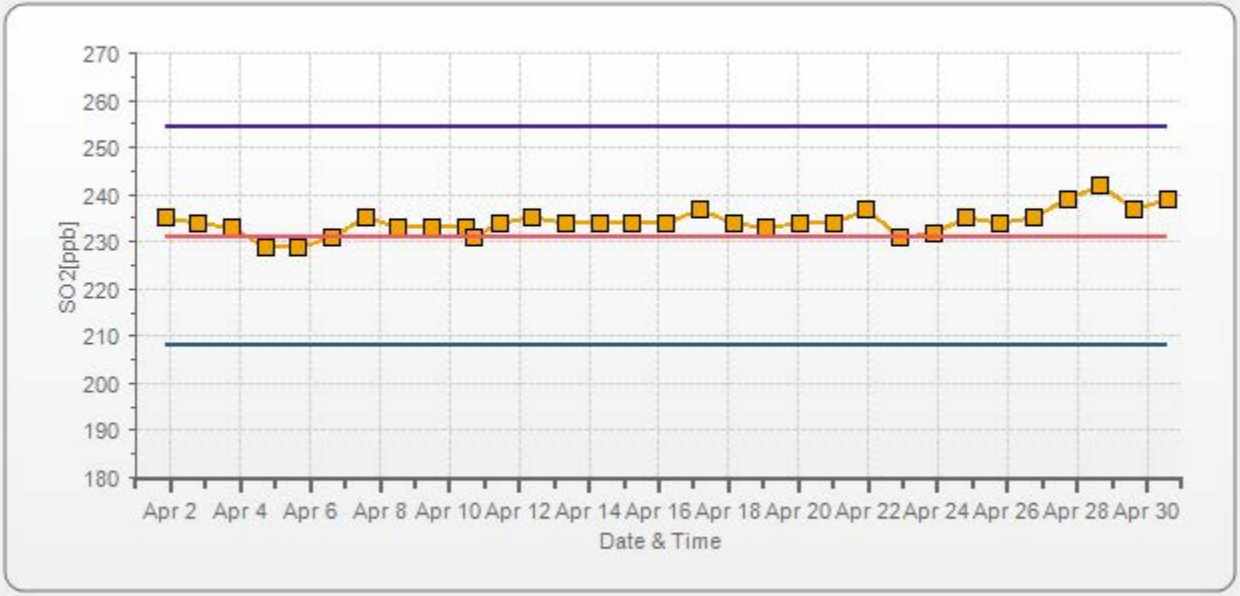
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	14.6	0.0	0.0	0.0	0.0	14.6
NE	5.9	0.0	0.0	0.0	0.0	5.9
E	11.8	0.0	0.0	0.0	0.0	11.8
SE	13.3	0.0	0.0	0.0	0.0	13.3
S	10.8	0.0	0.0	0.0	0.0	10.8
SW	20.6	0.0	0.0	0.0	0.0	20.6
W	7.2	0.0	0.0	0.0	0.0	7.2
NW	9.1	0.0	0.0	0.0	0.0	9.1
Summary	93.3	0.0	0.0	0.0	0.0	93.3

% Icon Classes (ppb)	93 0-3	0 3-10	0 10-85	0 85-170	0 >170.0

PRAMP_986 Poll.: PRAMP_986-SO2[ppb] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.73% Calm Poll Avg: 0.38[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 18/04 Type: Span



TOTAL REDUCED SULPHUR

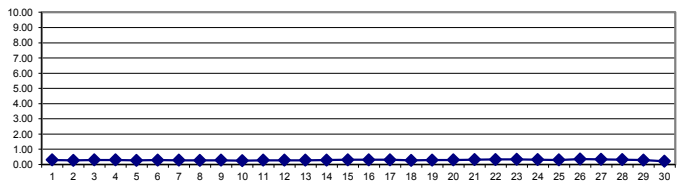
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.30	0.30	0.30	0.30	0.30	0.36	0.44	**0.52**	0.46	0.32	0.28	0.27	0.26	0.26	0.26	0.24	0.24	0.23	0.23	0.25	**S**	0.32	0.25	0.24	0.23	**0.52**	0.30	24
2	0.22	0.24	0.24	0.23	0.24	0.23	0.26	0.26	0.27	0.26	0.28	0.27	0.26	0.28	0.29	0.28	0.26	0.28	0.28	**S**	0.35	0.30	0.27	0.30	0.22	0.35	0.27	24
3	0.28	0.31	0.34	0.31	0.31	0.31	0.29	0.30	0.32	0.31	0.30	0.30	0.29	0.29	0.30	0.29	0.28	0.30	**S**	0.37	0.29	0.29	0.30	0.29	0.28	0.37	0.30	24
4	0.29	0.29	0.29	0.29	0.30	0.29	0.29	0.29	0.30	0.30	0.32	0.30	0.30	0.30	0.31	0.30	0.30	**S**	0.40	0.32	0.30	0.28	0.29	0.28	0.28	0.40	0.30	24
5	0.27	0.27	0.27	0.26	0.26	0.27	0.27	0.27	0.28	0.26	0.29	0.27	0.27	0.27	0.26	0.25	**S**	0.33	0.27	0.26	0.26	0.27	0.26	0.25	0.25	0.33	0.27	24
6	0.28	0.30	0.27	0.27	0.28	0.31	0.41	0.37	0.31	0.27	0.26	0.27	0.26	0.26	0.26	**S**	0.35	0.28	0.28	0.27	0.27	0.26	0.27	0.26	0.26	0.41	0.29	24
7	0.26	0.27	0.28	0.27	0.28	0.28	0.29	0.31	0.28	0.30	0.28	0.27	0.29	0.28	**S**	0.35	0.27	0.27	0.26	0.27	0.27	0.27	0.27	0.25	0.25	0.35	0.28	24
8	0.26	0.26	0.25	0.26	0.26	0.25	0.25	0.28	0.27	0.27	0.27	0.27	0.26	**S**	0.34	0.28	0.27	0.27	0.25	0.26	0.26	0.25	0.27	0.27	0.25	0.34	0.27	24
9	0.27	0.27	0.28	0.30	0.29	0.28	0.30	0.31	0.29	0.31	0.27	0.26	**S**	0.34	0.30	0.27	0.28	0.26	0.27	0.27	0.27	0.25	0.25	0.27	0.25	0.34	0.28	24
10	0.31	0.28	0.26	0.27	0.26	0.26	0.26	0.25	0.26	**C**	**C**	**C**	**C**	**C**	**C**	0.42	0.34	0.18	0.19	0.20	0.20	0.21	0.21	0.21	0.18	0.42	0.25	24
11	0.21	0.26	0.26	0.26	0.25	0.25	0.29	0.28	0.29	0.31	**S**	0.35	0.29	0.28	0.29	0.28	0.29	0.29	0.30	0.30	0.28	0.28	0.29	0.27	0.21	0.35	0.28	24
12	0.29	0.29	0.29	0.33	0.29	0.29	0.28	0.27	0.29	**S**	0.33	0.27	0.26	0.25	0.25	0.26	0.26	0.26	0.27	0.27	0.26	0.27	0.27	0.27	0.25	0.33	0.28	24
13	0.27	0.29	0.30	0.28	0.28	0.29	0.29	0.28	**S**	0.34	0.31	0.29	0.28	0.28	0.27	0.28	0.27	0.28	0.26	0.25	0.27	0.27	0.28	0.27	0.25	0.34	0.28	24
14	0.27	0.31	0.32	0.31	0.29	0.29	0.31	**S**	0.36	0.31	0.29	0.30	0.29	0.28	0.28	0.27	0.27	0.26	0.27	0.27	0.28	0.31	0.30	0.28	0.26	0.36	0.29	24
15	0.29	0.30	0.29	0.29	0.29	0.28	**S**	0.37	0.31	0.29	0.30	0.30	0.31	0.30	0.32	0.35	0.34	0.34	0.32	0.28	0.29	0.30	0.30	0.32	0.28	0.37	0.31	24
16	0.31	0.29	0.30	0.29	0.30	**S**	0.38	0.32	0.32	0.33	0.33	0.32	0.30	0.29	0.30	0.29	0.29	0.28	0.29	0.29	0.30	0.30	0.30	0.29	0.28	0.38	0.30	24
17	0.28	0.28	0.28	0.28	**S**	0.35	0.30	0.31	0.32	0.32	0.32	0.35	0.32	0.31	0.31	0.32	0.31	0.31	0.33	0.33	0.30	0.29	0.30	0.27	0.27	0.35	0.31	24
18	0.25	0.27	0.26	**S**	0.33	0.29	0.26	0.31	0.33	0.28	0.29	0.28	0.26	0.25	0.23	0.25	0.25	0.24	0.24	0.24	0.23	0.24	0.25	0.24	0.23	0.33	0.26	24
19	0.27	0.28	**S**	0.33	0.30	0.31	0.31	0.30	0.29	0.27	0.28	0.27	0.27	0.28	0.25	0.27	0.27	0.28	0.28	0.29	0.27	0.30	0.30	0.31	0.25	0.33	0.29	24
20	0.31	**S**	0.37	0.32	0.32	0.31	0.31	0.32	0.32	0.30	0.29	0.31	0.29	0.29	0.27	0.29	0.27	0.29	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.37	0.29	24
21	**S**	0.38	0.32	0.34	0.35	0.31	0.34	0.32	0.34	0.31	0.29	0.39	0.31	0.32	0.30	0.29	0.29	0.29	0.29	0.31	0.31	0.30	0.31	**S**	0.29	0.39	0.32	24
22	0.41	0.36	0.32	0.35	0.31	0.32	0.32	0.34	0.33	0.33	0.32	0.31	0.30	0.30	0.30	0.30	0.29	0.28	0.30	0.39	0.32	0.33	**S**	0.37	0.28	0.41	0.33	24
23	0.36	0.36	0.36	0.34	0.36	0.37	0.37	0.38	0.36	0.36	0.34	0.34	0.34	0.33	0.31	0.32	0.30	0.30	0.30	0.30	0.30	**S**	0.38	0.36	0.30	0.38	0.34	24
24	0.35	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.32	0.32	0.32	0.31	0.30	0.31	0.30	0.31	0.30	0.29	0.28	0.30	**S**	0.36	0.40	0.38	0.28	0.40	0.32	24
25	0.30	0.34	0.31	0.33	0.34	0.32	0.31	0.31	0.29	0.28	0.28	0.27	0.27	0.28	0.29	0.28	0.27	0.27	0.27	**S**	0.34	0.29	0.29	0.29	0.27	0.34	0.30	24
26	0.30	0.29	0.34	0.37	0.39	0.40	0.37	0.39	0.34	0.32	0.33	0.35	0.33	0.33	0.33	0.32	0.31	0.30	**S**	0.37	0.37	0.45	0.35	0.33	0.29	0.45	**0.35**	24
27	0.35	0.36	0.37	0.36	0.33	0.33	0.30	0.33	0.32	0.32	0.33	0.32	0.33	0.33	0.35	0.33	0.33	**S**	0.36	0.33	0.36	0.36	0.34	0.32	0.30	0.37	0.34	24
28	0.33	0.31	0.30	0.29	0.28	0.29	0.31	0.30	0.32	0.32	0.33	0.34	0.31	0.33	0.36	0.31	**S**	0.32	0.29	0.30	0.30	0.30	0.34	0.33	0.28	0.36	0.31	24
29	0.34	0.33	0.34	0.32	0.32	0.33	0.33	0.30	0.30	0.29	0.31	0.28	0.28	0.26	0.27	**S**	0.31	0.27	0.26	0.26	0.25	0.25	0.26	0.25	0.25	0.34	0.29	24
30	0.28	0.28	0.26	0.27	0.24	0.24	0.25	0.25	0.24	0.23	0.23	**C1**	**C1**	0.32	**S**	0.26	0.21	0.18	0.16	0.16	0.14	0.14	**0.12**	0.16	**0.12**	0.32	0.22	22
HOURLY MAX	0.41	0.38	0.37	0.37	0.39	0.40	0.44	0.52	0.46	0.36	0.34	0.39	0.34	0.34	0.36	0.42	0.35	0.34	0.40	0.39	0.37	0.45	0.40	0.38				
HOURLY AVG	0.29	0.30	0.30	0.30	0.30	0.30	0.31	0.32	0.31	0.30	0.30	0.30	0.29	0.29	0.29	0.30	0.29	0.28	0.28	0.29	0.28	0.29	0.29	0.28				

STATUS FLAG CODES

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

24 HR AVERAGES April 2018

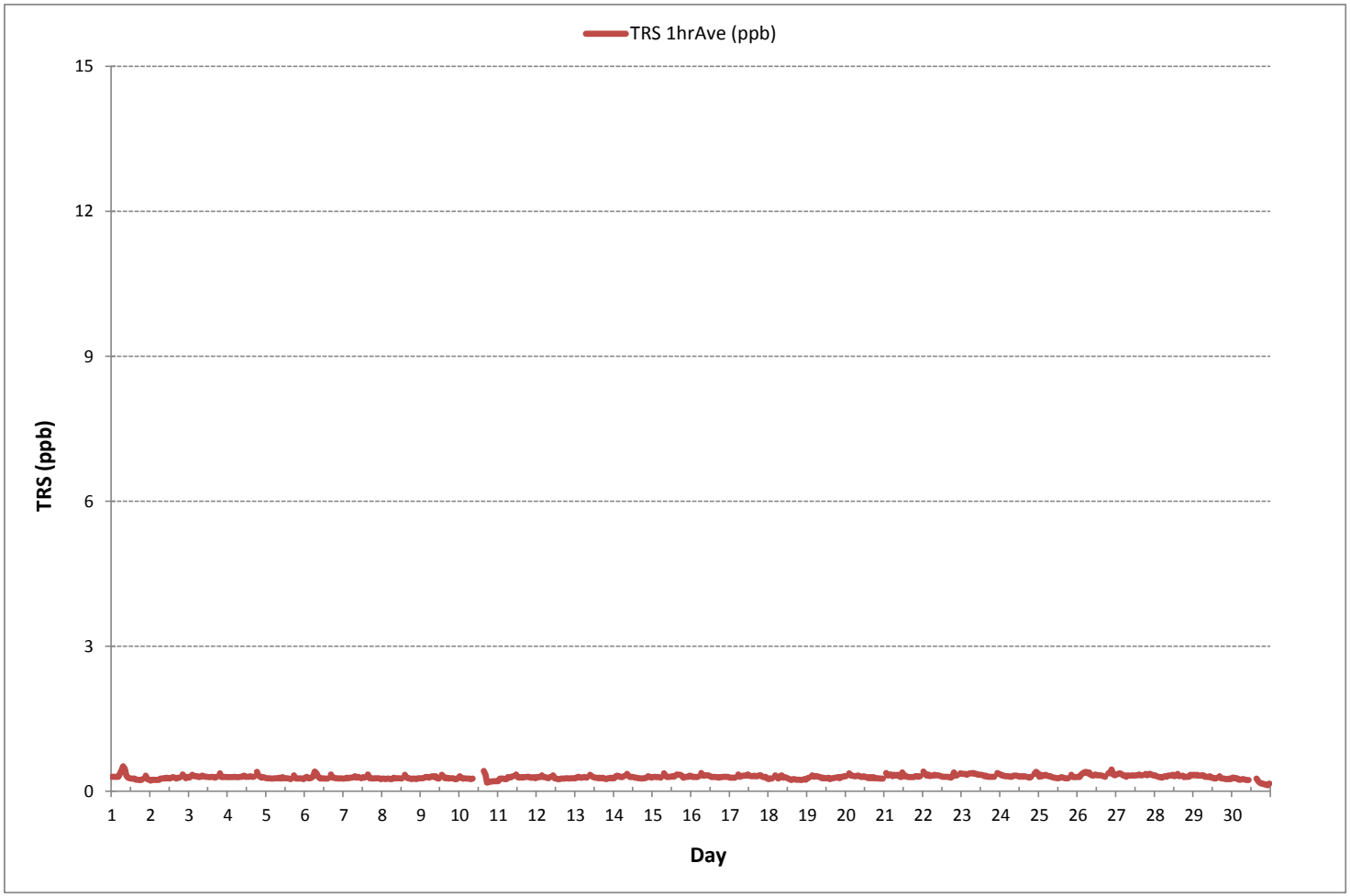


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		682				
MINIMUM 1-HR AVERAGE	0.12	ppb	@ HOUR	22	ON DAY	30
MAXIMUM 1-HR AVERAGE:	0.52	ppb	@ HOUR	7	ON DAY	1
MAXIMUM 24-HR AVERAGE:	0.35	ppb			ON DAY	26

IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	718	hrs
MONTHLY CALIBRATION TIME:	6	hrs	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.29	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



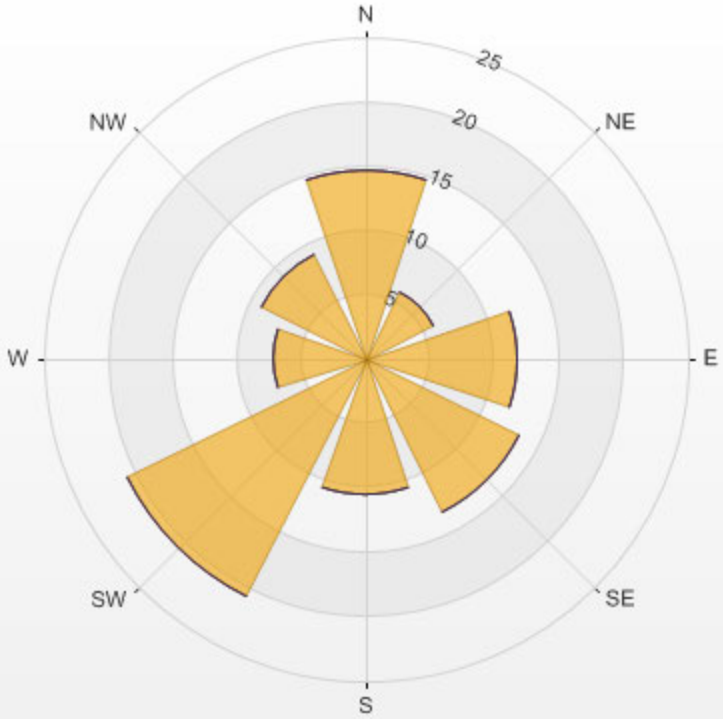
Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.75% Calm Avg: 0.30 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	14.7	0.0	0.0	0.0	14.7
NE	5.9	0.0	0.0	0.0	5.9
E	11.8	0.0	0.0	0.0	11.8
SE	13.4	0.0	0.0	0.0	13.4
S	10.6	0.0	0.0	0.0	10.6
SW	20.7	0.0	0.0	0.0	20.7
W	7.2	0.0	0.0	0.0	7.2
NW	9.1	0.0	0.0	0.0	9.1
Summary	93.2	0.0	0.0	0.0	93.2

% Icon Classes (ppb)	93 0-1	0 1-3	0 3-10	0 >10.0

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.75% Calm Poll Avg: 0.30[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 18/04 Type: Span

TOTAL HYDROCARBON

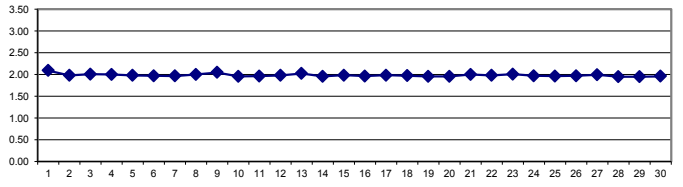
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	2.02	2.02	2.04	2.05	2.09	2.18	2.35	**2.48**	2.35	2.09	2.06	2.02	2.02	2.02	2.01	2.00	2.03	2.04	2.07	2.28	**S**	1.99	1.96	1.96	1.96	**2.48**	**2.09**	24
2	1.97	2.01	1.98	1.99	1.98	2.03	1.98	1.96	1.97	1.97	1.97	1.98	1.95	2.00	1.98	1.98	1.98	1.96	1.96	**S**	1.95	1.96	2.05	1.97	1.95	2.05	1.98	24
3	2.03	1.98	2.10	2.04	1.98	2.00	2.06	2.14	1.97	1.97	1.98	2.00	1.99	1.97	2.00	2.02	1.98	2.01	**S**	2.04	1.96	1.96	1.97	1.99	1.96	2.14	2.01	24
4	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.98	1.97	2.00	2.00	2.04	2.03	2.02	2.02	2.01	2.02	**S**	1.94	2.08	2.00	1.98	2.20	1.97	1.94	2.20	2.00	24
5	1.97	1.97	1.97	1.98	1.98	1.97	2.13	1.97	1.97	1.98	1.99	1.99	2.01	2.01	2.00	1.96	**S**	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	2.13	1.98	24
6	1.98	1.98	1.97	1.97	1.98	1.99	2.00	1.99	1.98	1.99	1.97	1.97	1.97	1.98	1.95	**S**	1.95	1.93	1.96	1.95	1.95	1.96	1.98	1.97	1.93	2.00	1.97	24
7	1.98	1.97	1.98	1.99	1.98	1.98	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.96	**S**	1.93	1.95	1.93	1.94	1.95	1.94	1.96	1.96	1.98	1.93	2.00	1.97	24
8	1.99	1.98	1.98	1.98	1.99	1.99	2.01	2.03	2.03	2.02	2.02	2.02	2.01	**S**	1.99	2.01	1.99	1.98	1.98	1.98	2.01	2.02	2.02	2.03	1.98	2.03	2.00	24
9	2.05	2.06	2.06	2.08	2.07	2.07	2.05	2.04	2.03	2.02	2.00	1.99	**S**	2.00	2.01	2.01	1.99	2.10	2.11	2.36	2.01	1.98	2.01	2.04	1.98	2.36	2.05	24
10	2.01	1.99	1.96	1.96	1.96	1.96	1.95	1.94	1.94	**C**	**C**	**C**	**C**	**C**	1.97	1.96	1.96	1.95	1.94	1.94	1.96	1.97	1.96	1.96	1.94	2.01	1.96	24
11	1.97	1.98	1.98	1.97	1.95	1.96	1.96	1.97	1.97	1.97	**S**	1.97	1.95	1.94	1.94	1.97	1.96	1.95	1.98	1.98	1.96	1.95	1.97	1.98	1.94	1.98	1.96	24
12	1.99	1.98	1.96	1.96	1.97	1.98	1.98	1.98	1.98	**S**	1.97	1.94	1.95	1.97	1.96	1.97	1.98	2.00	2.00	1.99	1.98	2.00	2.03	2.04	1.94	2.04	1.98	24
13	2.04	2.04	2.06	2.05	2.03	2.04	2.04	2.04	**S**	2.05	2.02	2.02	2.02	1.98	1.98	1.97	1.97	2.03	2.21	1.98	2.00	2.01	1.99	1.97	1.97	2.21	2.02	24
14	1.96	2.02	2.05	2.00	1.94	1.94	1.95	**S**	1.93	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.96	1.94	1.93	2.05	1.96	24
15	1.95	1.97	1.98	1.96	1.97	1.98	**S**	1.98	2.01	1.98	2.01	2.00	2.01	2.01	2.03	2.00	2.00	1.99	1.98	1.98	1.96	1.95	1.97	1.98	1.95	2.03	1.98	24
16	1.98	1.96	1.97	1.98	1.98	**S**	1.98	1.98	1.96	1.97	1.98	1.98	1.97	1.95	1.95	1.97	1.97	1.95	1.95	1.97	1.97	1.95	1.95	1.96	1.95	1.98	1.97	24
17	1.96	1.96	1.94	1.96	**S**	2.04	2.04	2.04	2.08	1.99	1.98	1.97	1.95	1.97	1.98	1.97	1.96	1.98	1.97	1.97	1.97	1.98	1.98	1.98	1.94	2.08	1.98	24
18	1.98	1.97	2.00	**S**	2.02	2.00	2.00	2.01	2.00	2.00	2.00	2.00	1.99	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.93	1.92	1.92	2.02	1.98	24
19	1.95	1.96	**S**	1.93	1.94	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.93	1.97	1.95	24
20	1.95	**S**	1.92	1.93	1.96	1.96	1.94	1.93	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.01	1.92	2.01	1.96	24
21	**S**	2.02	2.00	2.14	2.22	2.12	2.06	2.00	2.00	1.97	1.96	1.97	1.96	1.95	1.96	1.95	1.95	1.96	1.95	2.03	1.95	1.95	1.95	**S**	1.95	2.22	2.00	24
22	1.96	1.95	1.95	1.95	1.95	1.95	1.97	1.98	2.01	2.02	2.02	2.01	2.01	2.02	1.99	1.97	1.96	1.96	1.97	1.98	1.98	2.02	**S**	1.96	1.95	2.02	1.98	24
23	1.98	2.01	2.02	2.00	2.00	2.02	2.02	2.03	**S1**	2.02	2.02	2.02	2.02	2.01	2.01	2.00	2.00	2.00	1.99	2.00	2.01	**S**	2.01	2.00	1.98	2.03	2.01	23
24	1.98	1.98	1.96	1.96	1.99	1.99	1.99	1.98	1.98	1.99	1.98	1.97	1.96	**C1**	**C1**	**C1**	**C1**	1.94	1.94	1.94	**S**	1.95	2.00	2.00	1.94	2.00	1.97	20
25	1.99	1.95	1.97	2.02	2.02	2.01	1.96	1.96	1.98	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.95	1.94	1.94	**S**	1.94	1.96	1.96	1.96	1.94	2.02	1.97	24
26	1.95	1.95	1.97	1.95	1.97	1.98	2.08	2.00	1.95	1.97	1.98	1.97	1.96	1.95	1.96	1.97	1.95	1.94	**S**	1.95	1.95	1.96	1.99	2.03	1.94	2.08	1.97	24
27	2.10	2.11	2.09	2.12	2.11	2.08	2.04	1.99	1.96	1.94	1.94	1.95	1.96	1.95	1.95	1.95	1.95	**S**	1.93	1.96	1.95	1.94	1.95	1.97	1.93	2.12	2.00	24
28	1.99	1.99	2.04	2.00	1.93	**1.91**	1.92	1.93	1.95	1.95	1.96	1.95	1.94	1.94	1.96	1.94	**S**	1.94	1.95	1.94	1.94	1.95	1.95	1.95	**1.91**	2.04	1.95	24
29	1.94	1.94	1.94	1.92	1.93	1.96	1.96	1.94	1.93	1.96	1.98	1.98	1.96	1.96	1.95	**S**	1.95	1.96	1.96	1.95	1.94	1.95	1.93	1.92	1.92	1.98	1.95	24
30	1.93	1.99	2.00	1.99	1.96	1.94	1.96	1.95	1.96	1.95	1.95	1.96	1.94	1.93	**S**	1.95	1.95	1.98	1.98	1.93	1.93	1.93	1.96	2.09	1.93	2.09	1.96	24
HOURLY MAX	2.10	2.11	2.10	2.14	2.22	2.18	2.35	2.48	2.35	2.09	2.06	2.04	2.03	2.02	2.03	2.02	2.03	2.10	2.21	2.36	2.01	2.02	2.20	2.09				
HOURLY AVG	1.98	1.99	1.99	1.99	1.99	2.00	2.01	2.01	1.99	1.99	1.98	1.98	1.98	1.97	1.98	1.97	1.97	1.97	1.98	2.00	1.96	1.97	1.98	1.98				

STATUS FLAG CODES

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

24 HR AVERAGES April 2018

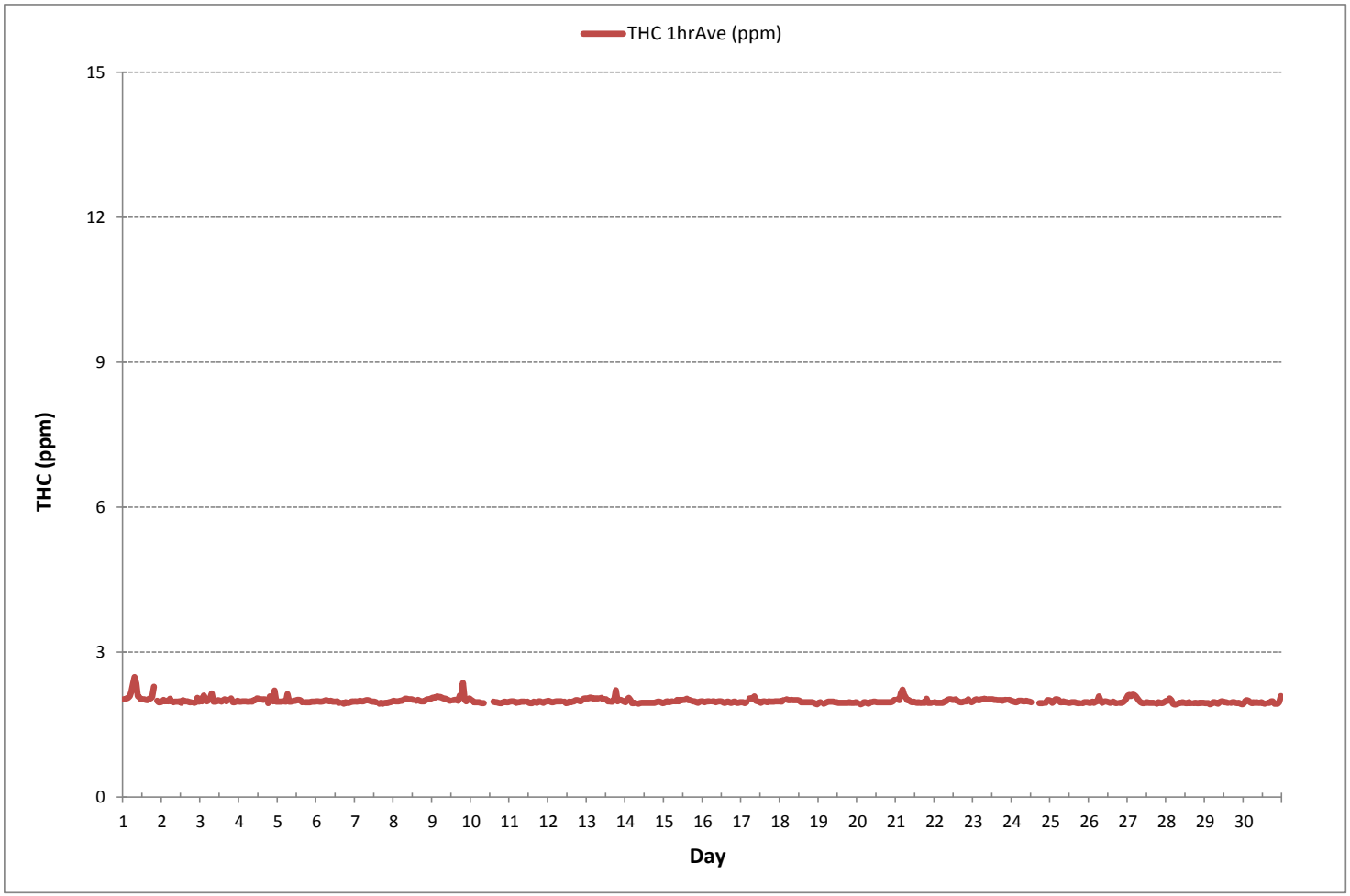


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		680				
MINIMUM 1-HR AVERAGE	1.91	ppm	@ HOUR	5	ON DAY	28
MAXIMUM 1-HR AVERAGE:	2.48	ppm	@ HOUR	7	ON DAY	1
MAXIMUM 24-HR AVERAGE:	2.09	ppm			ON DAY	1

IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	715	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	99.3	%
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:	1.98	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



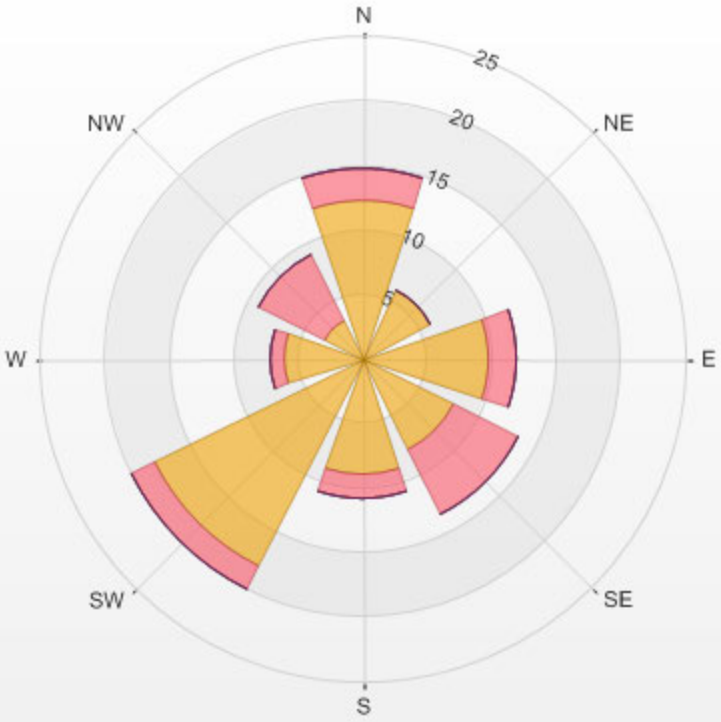
Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.77% Calm Avg: 2.01 [ppm]

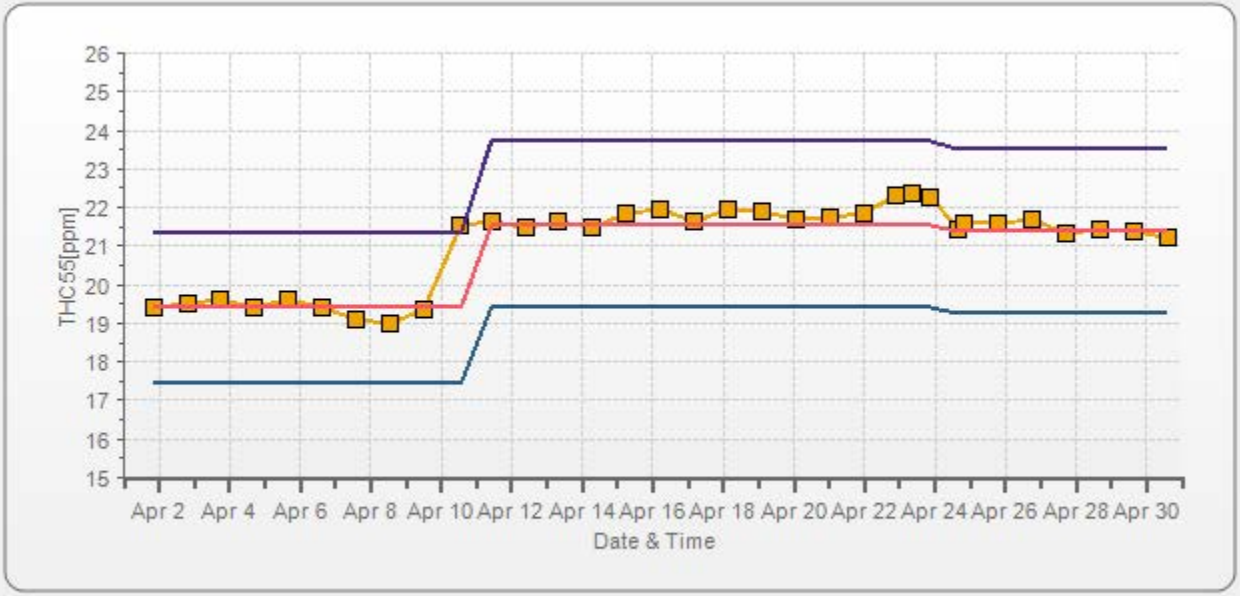
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	12.4	2.4	0.0	0.0	0.0	14.7
NE	5.9	0.0	0.0	0.0	0.0	5.9
E	9.7	2.2	0.0	0.0	0.0	11.9
SE	8.0	5.5	0.0	0.0	0.0	13.4
S	9.0	1.9	0.0	0.0	0.0	10.9
SW	18.0	2.1	0.0	0.0	0.0	20.0
W	6.0	1.2	0.0	0.0	0.0	7.2
NW	3.4	5.7	0.0	0.0	0.0	9.1
Summary	72.3	20.9	0.0	0.0	0.0	93.2

% Icon Classes (ppm)	72 0-2	21 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.77% Calm Poll Avg: 2.01[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 18/04 Type: Span



METHANE

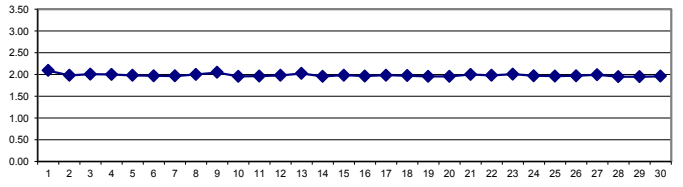
METHANE Hourly Averages (CH_4 ppm)

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	2.02	2.02	2.04	2.05	2.09	2.18	2.35	**2.48**	2.35	2.09	2.06	2.02	2.02	2.02	2.01	2.00	2.03	2.04	2.07	2.28	**S**	1.99	1.96	1.96	1.96	**2.48**	**2.09**	24
2	1.97	2.01	1.98	1.99	1.98	2.03	1.98	1.96	1.97	1.97	1.97	1.98	1.95	2.00	1.98	1.98	1.98	1.96	1.96	**S**	1.95	1.96	2.05	1.97	1.95	2.05	1.98	24
3	2.03	1.98	2.10	2.04	1.98	2.00	2.06	2.14	1.97	1.97	1.98	2.00	1.99	1.97	2.00	2.02	1.98	2.01	**S**	2.04	1.96	1.96	1.97	1.99	1.96	2.14	2.01	24
4	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.98	1.97	2.00	2.00	2.04	2.03	2.02	2.02	2.01	2.02	**S**	1.94	2.08	2.00	1.98	2.20	1.97	1.94	2.20	2.00	24
5	1.97	1.97	1.97	1.98	1.98	1.97	2.13	1.97	1.97	1.98	1.99	1.99	2.01	2.01	2.00	1.96	**S**	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	2.13	1.98	24
6	1.98	1.98	1.97	1.97	1.98	1.99	2.00	1.99	1.98	1.99	1.97	1.97	1.97	1.98	1.95	**S**	1.95	1.93	1.96	1.95	1.95	1.96	1.98	1.97	1.93	2.00	1.97	24
7	1.98	1.97	1.98	1.99	1.98	1.98	1.99	2.00	2.00	1.99	1.98	1.97	1.97	1.96	**S**	1.93	1.95	1.93	1.94	1.95	1.94	1.96	1.96	1.98	1.93	2.00	1.97	24
8	1.99	1.98	1.98	1.98	1.99	1.99	2.01	2.03	2.03	2.02	2.02	2.02	2.01	**S**	1.99	2.01	1.99	1.98	1.98	1.98	2.01	2.02	2.02	2.03	1.98	2.03	2.00	24
9	2.05	2.06	2.06	2.08	2.07	2.07	2.05	2.04	2.03	2.02	2.00	1.99	**S**	2.00	2.01	2.01	1.99	2.10	2.11	2.36	2.01	1.98	2.01	2.04	1.98	2.36	2.05	24
10	2.01	1.99	1.96	1.96	1.96	1.96	1.95	1.94	1.94	**C**	**C**	**C**	**C**	**C**	1.97	1.96	1.96	1.95	1.94	1.94	1.96	1.97	1.96	1.96	1.94	2.01	1.96	24
11	1.97	1.98	1.98	1.97	1.95	1.96	1.96	1.97	1.97	1.97	**S**	1.97	1.95	1.94	1.94	1.97	1.96	1.95	1.98	1.98	1.96	1.95	1.97	1.98	1.94	1.98	1.96	24
12	1.99	1.98	1.96	1.96	1.97	1.98	1.98	1.98	1.98	**S**	1.97	1.94	1.95	1.97	1.96	1.97	1.98	2.00	2.00	1.99	1.98	2.00	2.03	2.04	1.94	2.04	1.98	24
13	2.04	2.04	2.06	2.05	2.03	2.04	2.04	2.04	**S**	2.05	2.02	2.02	2.02	1.98	1.98	1.97	1.97	2.03	2.21	1.98	2.00	2.01	1.99	1.97	1.97	2.21	2.02	24
14	1.96	2.02	2.05	2.00	1.94	1.94	1.95	**S**	1.93	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.96	1.94	1.93	2.05	1.96	24
15	1.95	1.97	1.98	1.96	1.97	1.98	**S**	1.98	2.01	1.98	2.01	2.00	2.01	2.01	2.03	2.00	2.00	1.99	1.98	1.98	1.96	1.95	1.97	1.98	1.95	2.03	1.98	24
16	1.98	1.96	1.97	1.98	1.98	**S**	1.98	1.98	1.96	1.97	1.98	1.98	1.97	1.95	1.95	1.97	1.97	1.95	1.95	1.97	1.97	1.95	1.95	1.96	1.95	1.98	1.97	24
17	1.96	1.96	1.94	1.96	**S**	2.04	2.04	2.04	2.08	1.99	1.98	1.97	1.95	1.97	1.98	1.97	1.96	1.98	1.97	1.97	1.97	1.98	1.98	1.98	1.94	2.08	1.98	24
18	1.98	1.97	2.00	**S**	2.02	2.00	2.00	2.01	2.00	2.00	2.00	2.00	1.99	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.93	1.92	1.92	2.02	1.98	24
19	1.95	1.96	**S**	1.93	1.94	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.93	1.97	1.95	24
20	1.95	**S**	1.92	1.93	1.96	1.96	1.94	1.93	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.01	1.92	2.01	1.96	24
21	**S**	2.02	2.00	2.14	2.22	2.12	2.06	2.00	2.00	1.97	1.96	1.97	1.96	1.95	1.96	1.95	1.96	1.95	2.03	1.95	1.95	1.95	**S**	1.96	1.95	2.22	2.00	24
22	1.96	1.95	1.95	1.95	1.95	1.95	1.97	1.98	2.01	2.02	2.02	2.01	2.01	2.02	1.99	1.97	1.96	1.96	1.97	1.98	1.98	2.02	**S**	1.96	1.95	2.02	1.98	24
23	1.98	2.01	2.02	2.00	2.00	2.02	2.02	2.03	**S1**	2.02	2.02	2.02	2.02	2.01	2.01	2.00	2.00	2.00	1.99	2.00	2.01	**S**	2.01	2.00	1.98	2.03	2.01	23
24	1.98	1.98	1.96	1.96	1.99	1.99	1.99	1.98	1.98	1.99	1.98	1.97	1.96	**C1**	**C1**	**C1**	**C1**	1.94	1.94	1.94	**S**	1.95	2.00	2.00	1.94	2.00	1.97	20
25	1.99	1.95	1.97	2.02	2.02	2.01	1.96	1.96	1.98	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.95	1.94	1.94	**S**	1.94	1.96	1.96	1.96	1.94	2.02	1.97	24
26	1.95	1.95	1.97	1.95	1.97	1.98	2.08	2.00	1.95	1.97	1.98	1.97	1.96	1.95	1.96	1.97	1.95	1.94	**S**	1.95	1.95	1.96	1.99	2.03	1.94	2.08	1.97	24
27	2.10	2.11	2.09	2.12	2.11	2.08	2.04	1.99	1.96	1.94	1.94	1.95	1.96	1.95	1.95	1.95	1.95	**S**	1.93	1.96	1.95	1.94	1.95	1.97	1.93	2.12	2.00	24
28	1.99	1.99	2.04	2.00	1.93	**1.91**	1.92	1.93	1.95	1.95	1.96	1.95	1.94	1.94	1.96	1.94	**S**	1.94	1.95	1.94	1.94	1.95	1.95	1.95	**1.91**	2.04	1.95	24
29	1.94	1.94	1.94	1.92	1.93	1.96	1.96	1.94	1.93	1.96	1.98	1.98	1.96	1.96	1.95	**S**	1.95	1.96	1.96	1.95	1.94	1.95	1.93	1.92	1.92	1.98	1.95	24
30	1.93	1.99	2.00	1.98	1.96	1.94	1.96	1.95	1.96	1.95	1.95	1.96	1.94	1.93	**S**	1.95	1.95	1.98	1.98	1.93	1.93	1.93	1.96	2.09	1.93	2.09	1.96	24
HOURLY MAX	2.10	2.11	2.10	2.14	2.22	2.18	2.35	2.48	2.35	2.09	2.06	2.04	2.03	2.02	2.03	2.02	2.03	2.10	2.21	2.36	2.01	2.02	2.20	2.09				
HOURLY AVG	1.98	1.99	1.99	1.99	1.99	2.00	2.01	2.01	1.99	1.99	1.98	1.98	1.98	1.97	1.98	1.97	1.97	1.97	1.98	2.00	1.96	1.97	1.98	1.98				

STATUS FLAG CODES

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

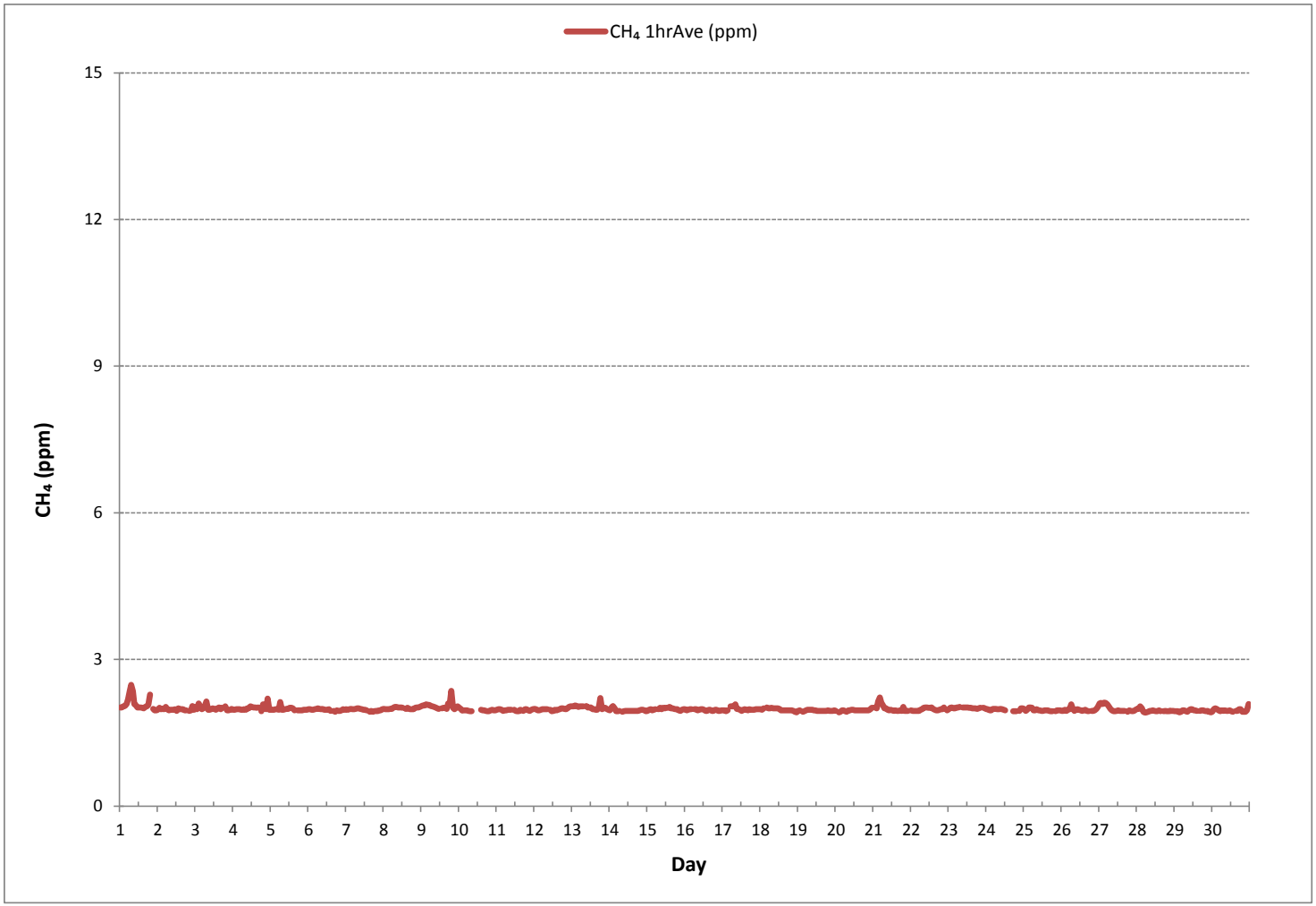
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		680					
MINIMUM 1-HR AVERAGE	1.91	ppm	@ HOUR	5	ON DAY	28	
MAXIMUM 1-HR AVERAGE:	2.48	ppm	@ HOUR	7	ON DAY	1	
MAXIMUM 24-HR AVERAGE:	2.09	ppm			ON DAY	1	
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:			715	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			99.3	%
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:			1.98	ppm

METHANE Hourly Averages (CH_4 ppm)



Wind: PRAMP_986
Poll.: PRAMP_986-CH_4[ppm]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

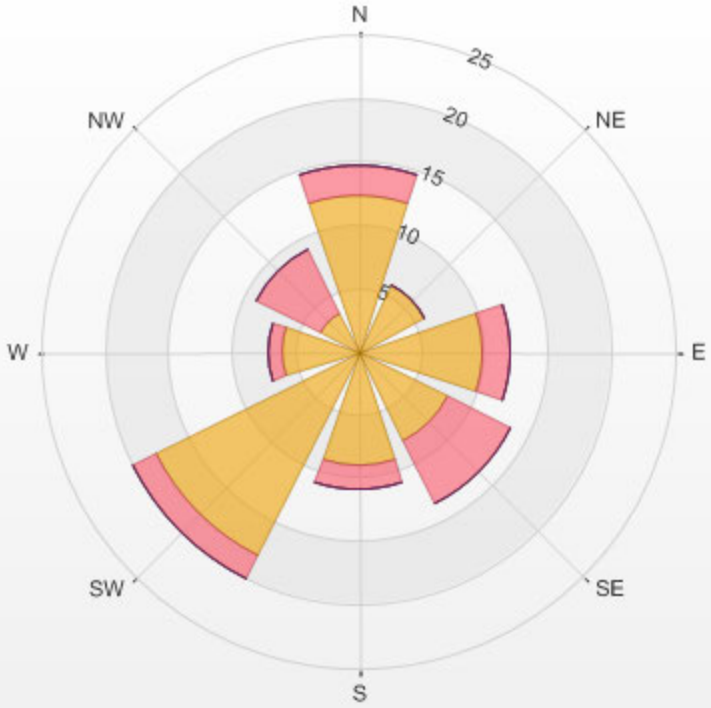
Calm: 6.77%

Calm Avg: 2.01 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	12.4	2.4	0.0	0.0	0.0	14.7
NE	5.9	0.0	0.0	0.0	0.0	5.9
E	9.7	2.2	0.0	0.0	0.0	11.9
SE	8.0	5.5	0.0	0.0	0.0	13.4
S	9.0	1.9	0.0	0.0	0.0	10.9
SW	18.0	2.1	0.0	0.0	0.0	20.0
W	6.0	1.2	0.0	0.0	0.0	7.2
NW	3.4	5.7	0.0	0.0	0.0	9.1
Summary	72.3	20.9	0.0	0.0	0.0	93.2

% Icon	Classes (ppm)	72	0-2	21	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.77% Calm Poll Avg: 2.01[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 18/04 Type: Span

NON-METHANE HYDROCARBON

Maxxam
A Bureau Veritas Group Company

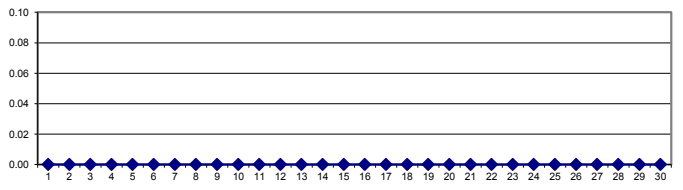
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	**0.00**	0.00	**0.00**	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**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
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**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
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**C**	**C**	**C**	**C**	**C**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
11	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
12	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
13	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
14	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
15	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
16	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
17	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	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
19	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
20	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
21	**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
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	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	**S1**	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	23
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**C1**	**C1**	**C1**	**C1**	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	20
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	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	**S**	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	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
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.00	0.00	0.01	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	0.00	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

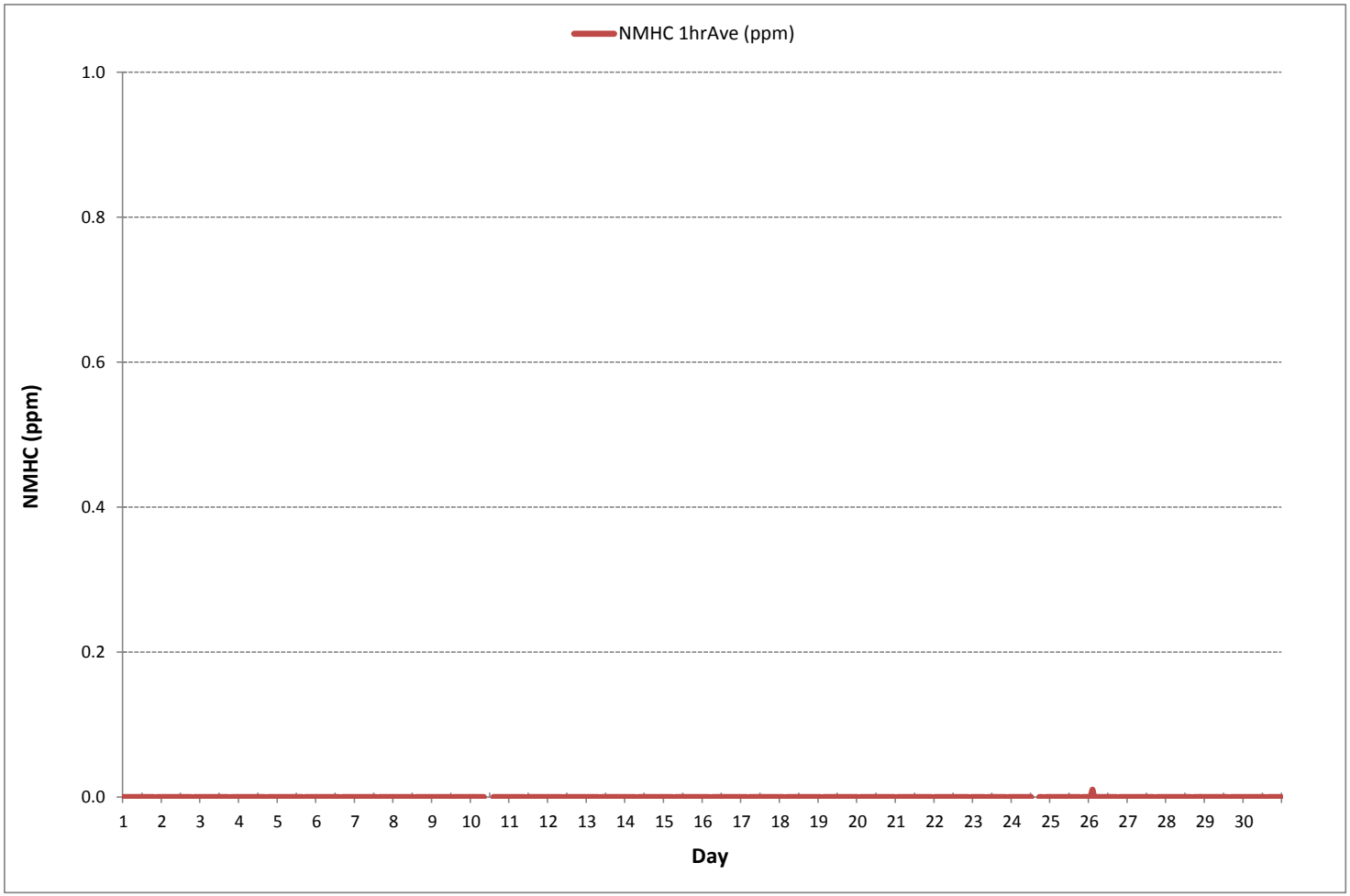
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			1				
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	0.01	ppm	@ HOUR	2	ON DAY	26	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	1	
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:			715	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			99.3	%
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: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

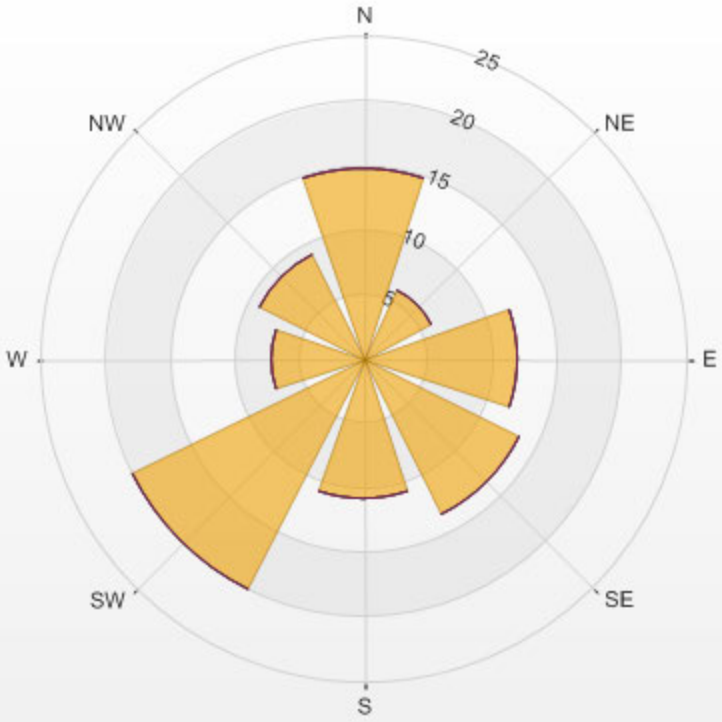
Calm: 6.77%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	14.7	0.0	0.0	0.0	0.0	14.7
NE	5.9	0.0	0.0	0.0	0.0	5.9
E	11.9	0.0	0.0	0.0	0.0	11.9
SE	13.4	0.0	0.0	0.0	0.0	13.4
S	10.9	0.0	0.0	0.0	0.0	10.9
SW	20.0	0.0	0.0	0.0	0.0	20.0
W	7.2	0.0	0.0	0.0	0.0	7.2
NW	9.1	0.0	0.0	0.0	0.0	9.1
Summary	93.2	0.0	0.0	0.0	0.0	93.2

% Icon Classes (ppm)	93 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] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.77% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 18/04 Type: Span

WIND SPEED

Maxxam
A Bureau Veritas Group Company

WIND SPEED Hourly Averages (WS kph)

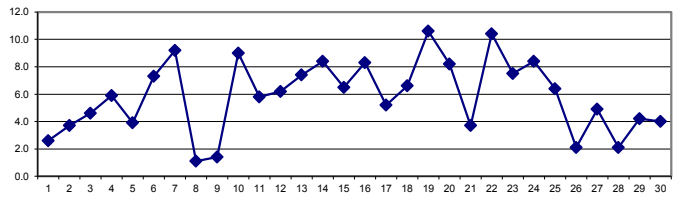
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	3.8	2.5	2.5	2.6	2.6	2.3	2.8	2.4	0.3	2.2	6.8	7.2	11.0	10.1	7.9	7.9	8.5	7.0	4.9	3.9	2.0	2.5	2.3	1.7	0.3	11.0	2.6	24
2	1.8	0.9	2.0	0.9	1.2	4.9	4.2	4.9	7.2	5.4	6.4	5.3	7.3	11.5	7.8	8.7	8.1	7.0	6.2	3.7	1.6	1.6	0.6	1.6	0.6	11.5	3.7	24
3	1.1	1.8	**0.0**	2.9	3.7	2.7	3.2	4.4	5.8	6.5	5.8	6.6	6.9	7.7	6.8	7.7	7.9	8.8	6.5	5.5	3.9	4.9	3.3	4.5	**0.0**	8.8	4.6	24
4	5.2	2.1	3.1	4.0	1.8	2.7	4.2	6.2	8.5	8.6	11.6	15.3	14.2	12.7	12.4	19.0	**C**	**C**	5.1	2.1	0.9	1.2	2.5	1.2	0.9	19.0	5.9	24
5	0.3	0.5	1.1	0.3	3.4	5.5	5.0	6.8	7.8	8.6	7.8	7.4	7.4	9.4	7.2	7.0	4.9	6.8	4.4	4.3	6.4	3.7	3.5	4.3	0.3	9.4	3.9	24
6	5.2	4.5	4.0	4.3	5.3	6.3	5.6	5.3	5.7	7.9	10.6	9.8	9.2	9.1	11.9	10.2	9.1	10.4	9.8	6.1	6.0	6.4	7.1	6.6	4.0	11.9	7.3	24
7	5.5	5.4	5.2	5.9	6.9	7.6	5.9	6.2	4.9	14.3	16.0	15.5	14.7	12.5	11.7	13.5	12.0	14.5	12.7	9.7	8.5	6.5	5.6	4.7	4.7	16.0	9.2	24
8	4.7	4.7	4.8	4.6	4.1	5.4	5.0	4.7	2.6	1.9	8.5	5.6	5.0	6.4	9.1	5.8	2.9	5.4	4.9	4.3	2.2	1.8	3.3	2.7	1.8	9.1	1.1	24
9	3.5	3.4	3.1	5.5	4.9	4.0	2.4	4.4	2.4	5.1	6.6	5.7	5.7	4.7	7.2	6.9	3.5	2.6	4.6	3.4	0.9	2.6	1.5	0.4	0.4	7.2	1.4	24
10	3.6	6.6	7.4	6.0	9.1	9.0	9.4	12.0	12.3	9.5	10.6	11.7	10.5	9.2	10.0	11.3	11.3	9.8	10.9	9.2	8.2	8.9	7.7	8.4	3.6	12.3	9.0	24
11	6.4	6.7	5.9	8.7	8.5	7.6	5.5	5.9	6.2	4.8	6.5	6.3	5.8	7.5	8.5	8.0	6.9	6.3	5.8	5.4	5.7	3.3	2.7	3.7	2.7	8.7	5.8	24
12	3.6	6.4	4.4	5.5	6.3	5.1	6.6	5.8	7.8	6.4	7.9	7.0	6.8	5.0	2.4	8.7	9.4	8.8	14.2	11.6	6.5	8.4	6.2	5.4	2.4	14.2	6.2	24
13	10.4	7.8	5.6	5.4	4.9	5.2	7.8	11.4	12.1	12.4	11.2	9.7	9.6	10.3	9.3	9.4	7.4	2.5	2.7	3.0	9.5	15.2	21.2	15.5	2.5	21.2	7.4	24
14	9.8	7.1	9.4	11.2	9.4	9.5	9.8	10.2	11.8	10.8	11.7	13.2	14.1	14.1	13.7	10.9	11.8	10.7	7.6	5.8	7.2	5.6	5.3	4.9	4.9	14.1	8.4	24
15	4.0	3.1	3.1	2.2	0.8	1.0	0.3	3.8	7.4	6.6	9.2	9.8	10.5	11.7	12.0	12.2	11.1	11.6	11.2	10.2	11.1	11.1	9.0	9.1	0.3	12.2	6.5	24
16	9.5	9.8	8.6	8.3	8.5	7.2	8.2	8.5	6.8	9.9	11.1	10.3	10.9	9.9	11.6	9.9	9.8	7.7	8.4	8.2	7.2	5.6	6.0	5.9	5.6	11.6	8.3	24
17	5.5	6.0	5.0	5.6	4.8	5.5	5.7	5.8	5.6	11.6	10.7	7.0	6.3	7.5	8.0	8.9	8.5	9.8	7.4	10.1	5.9	5.2	4.6	6.2	4.6	11.6	5.2	24
18	4.8	2.7	1.5	1.6	1.0	1.4	3.8	4.3	5.9	8.2	10.4	10.8	11.8	11.6	12.1	10.4	9.7	11.2	9.5	5.8	7.2	8.2	8.6	7.4	1.0	12.1	6.6	24
19	5.5	5.5	6.1	6.7	10.5	10.5	11.1	15.2	14.9	14.8	15.3	15.1	12.8	16.0	14.0	13.6	11.0	10.5	9.3	9.0	9.9	8.8	7.1	5.3	5.3	16.0	**10.6**	24
20	7.4	10.0	9.9	7.5	9.1	10.8	9.9	10.0	11.1	13.9	13.3	10.5	10.8	12.1	12.2	11.4	11.2	6.8	4.9	1.5	3.5	4.7	4.2	3.5	1.5	13.9	8.2	24
21	3.9	2.7	3.0	2.5	1.6	1.8	0.3	1.1	2.2	3.0	5.2	6.5	6.2	6.7	8.9	9.7	9.2	7.9	7.7	4.6	5.8	6.3	7.5	7.7	0.3	9.7	3.7	24
22	7.6	14.5	12.0	13.6	16.7	14.5	16.9	14.7	13.8	19.5	19.2	16.4	16.4	12.3	13.2	10.4	12.2	9.5	6.9	4.5	2.7	2.6	2.7	2.7	2.6	19.5	10.4	24
23	4.4	4.3	4.5	3.9	4.2	4.9	4.2	8.2	7.5	8.4	9.3	10.0	12.0	12.3	13.6	14.7	14.4	9.3	8.8	7.1	5.7	8.1	5.7	5.1	3.9	14.7	7.5	24
24	6.7	6.4	7.2	8.9	9.9	7.6	8.5	12.0	10.5	8.4	9.7	10.4	12.7	12.3	11.9	12.4	11.8	9.2	8.5	7.0	4.4	5.2	7.8	3.7	3.7	12.7	8.4	24
25	0.8	2.0	0.7	0.2	0.5	1.7	1.6	3.3	4.5	4.7	7.1	11.5	14.3	15.5	15.2	15.8	12.6	13.0	9.6	6.2	5.5	5.6	6.9	6.3	0.2	15.8	6.4	24
26	3.9	1.4	1.0	1.0	1.6	2.4	0.5	1.6	6.2	6.2	7.7	6.8	4.8	5.3	6.5	5.8	6.2	6.7	5.8	3.9	2.8	1.9	2.9	3.9	0.5	7.7	2.1	24
27	4.6	3.7	5.1	5.1	4.1	5.6	7.1	7.3	6.8	8.9	8.9	6.9	8.7	11.4	11.9	10.0	10.0	8.8	8.4	7.4	3.1	3.4	4.5	6.0	3.1	11.9	4.9	24
28	7.1	6.8	6.1	5.8	5.9	5.2	5.5	6.3	6.3	6.0	6.6	7.0	7.1	12.8	9.3	10.4	11.3	11.0	10.1	10.3	10.7	10.2	6.7	10.0	5.2	12.8	2.1	24
29	12.6	13.2	11.2	8.7	8.3	5.8	5.3	6.8	6.1	4.0	7.7	8.5	3.3	3.5	6.3	4.6	6.0	8.2	7.3	5.6	5.3	4.8	4.2	2.9	2.9	13.2	4.2	24
30	3.9	3.1	5.6	6.0	7.3	7.3	8.8	12.0	10.5	11.9	12.5	15.2	15.3	11.4	9.1	7.5	13.8	11.7	13.0	**21.4**	12.5	8.3	6.1	5.1	3.1	**21.4**	4.0	24
HOURLY MAX	12.6	14.5	12.0	13.6	16.7	14.5	16.9	15.2	14.9	19.5	19.2	16.4	16.4	16.0	15.2	19.0	14.4	14.5	14.2	21.4	12.5	15.2	21.2	15.5				
HOURLY AVG	1.6	1.2	1.4	1.2	1.2	1.3	0.9	1.2	1.2	2.0	2.7	3.1	3.3	3.8	3.8	3.4	3.3	2.9	2.2	1.2	0.9	1.5	1.6	1.5				

STATUS FLAG CODES

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

LAST CALIBRATION:	April 4, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

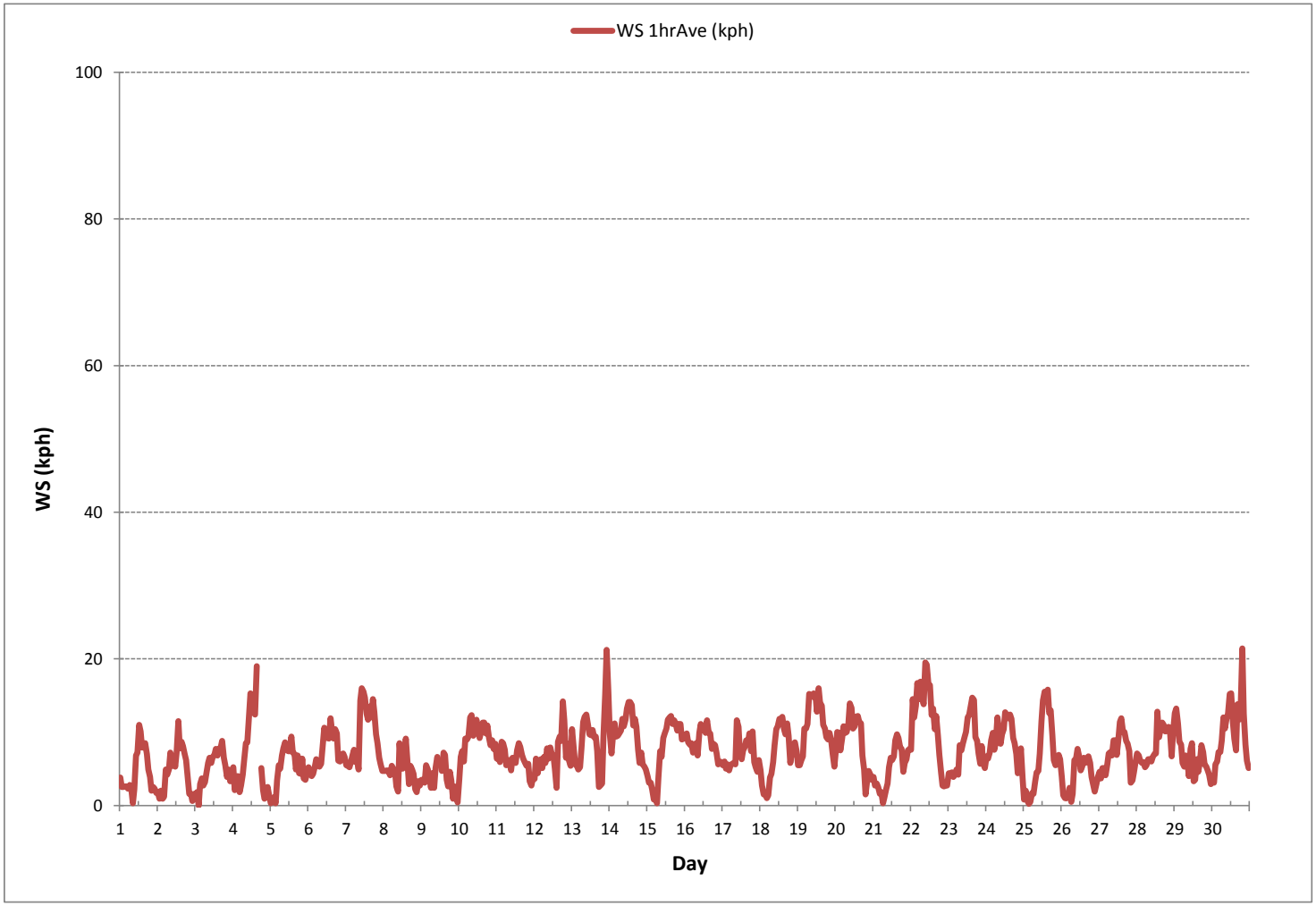
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		717					
MINIMUM 1-HR AVERAGE	0.0	kph	@ HOUR	2	ON DAY	3	
MAXIMUM 1-HR AVERAGE:	21.4	kph	@ HOUR	19	ON DAY	30	
MAXIMUM 24-HR AVERAGE:	10.6	kph			ON DAY	19	
			OPERATIONAL TIME:			720	hrs
MONTHLY CALIBRATION TIME:	2	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	3.8		MONTHLY AVERAGE:			1.2	kph

WIND SPEED Hourly Averages (WS kph)



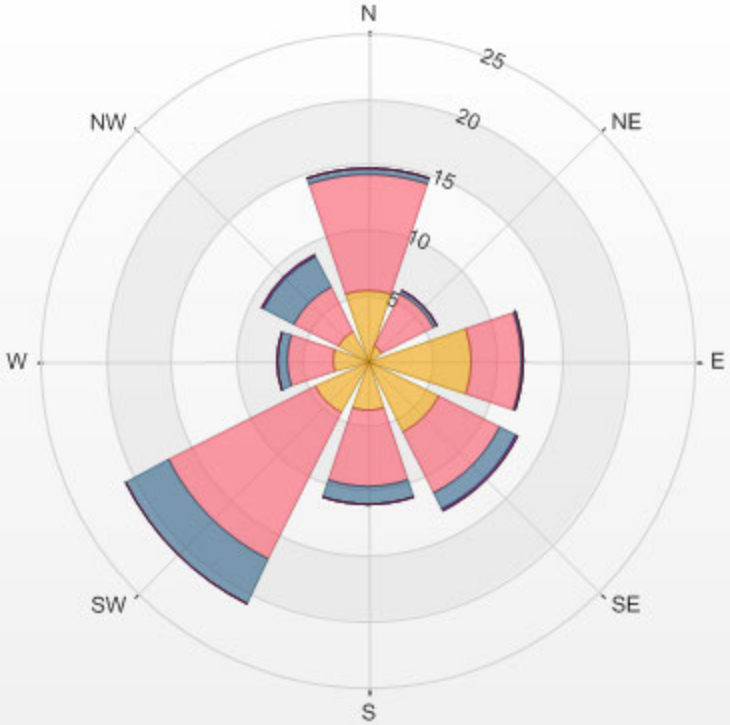
Wind: PRAMP_986
Monitor: WSP [kph]
Monthly: 18/04
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 6.69%

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	5.4	8.9	0.4	0.0	0.0	0.0	14.8
NE	1.3	4.5	0.3	0.0	0.0	0.0	6.0
E	7.9	3.8	0.3	0.0	0.0	0.0	12.0
SE	6.1	5.2	1.4	0.1	0.0	0.0	12.8
S	3.8	5.9	1.4	0.0	0.0	0.0	11.0
SW	4.5	12.5	3.8	0.0	0.0	0.0	20.8
W	2.7	3.5	0.8	0.0	0.0	0.0	7.0
NW	2.5	3.9	2.5	0.1	0.0	0.0	9.1
Summary	34.1	48.0	10.9	0.3	0.0	0.0	93.3

%	Icon	Classes (kph)	34	1.8-6.0	48	6.0-12.0	11	12.0-20.0	0	20.0-29.0	0	29.0-39.0	0	>39.0

PRAMP_986 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 6.69% Calm Wind Avg Speed: 1.07(kph)



WIND DIRECTION

Maxxam
A Bureau Veritas Group Company

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - April 2018

WIND DIRECTION Hourly Averages (WD)

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

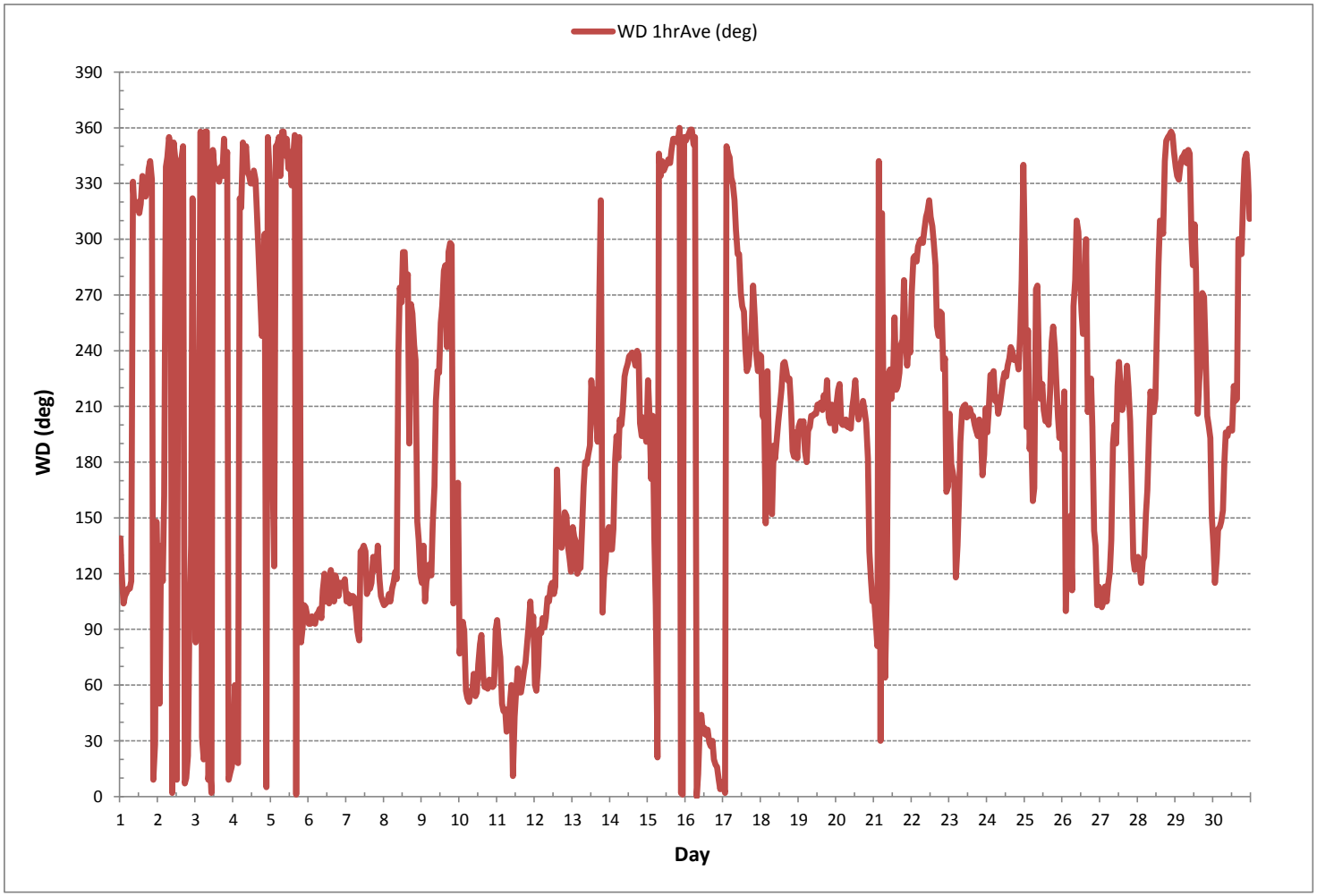
STATUS FLAG CODES

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

LAST CALIBRATION:	April 4, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	2	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	97		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	219 (SW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

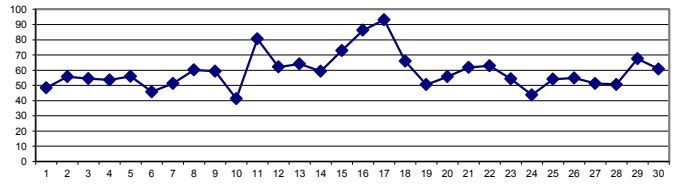
RELATIVE HUMIDITY Hourly Averages (RH %)

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	62	63	64	65	65	65	66	64	52	44	43	40	37	35	32	29	28	28	29	36	43	52	57	61	28	66	48	24
2	64	65	65	67	67	70	75	66	58	52	48	44	39	44	45	42	43	44	43	45	53	62	67	69	39	75	56	24
3	70	70	71	73	75	75	77	74	53	45	44	44	43	44	42	41	39	37	36	46	54	52	49	55	36	77	55	24
4	54	54	64	64	61	66	68	67	58	54	52	50	46	42	39	38	37	37	39	48	57	61	66	64	37	68	54	24
5	63	63	65	67	68	74	76	74	66	61	57	52	49	48	45	42	38	39	39	42	45	52	58	59	38	76	56	24
6	53	54	58	64	65	65	65	61	49	43	39	34	31	30	30	28	**26**	28	30	37	48	51	54	56	**26**	65	46	24
7	53	57	60	62	61	64	64	60	54	54	52	48	47	44	42	39	36	33	36	42	48	56	57	60	33	64	51	24
8	62	65	67	69	70	73	73	70	63	54	59	55	53	52	49	47	40	43	47	54	61	70	74	74	40	74	60	24
9	76	77	76	79	81	81	79	72	60	50	44	41	40	39	41	40	36	35	40	48	67	73	74	74	35	81	59	24
10	71	52	47	47	41	41	38	38	43	45	43	40	38	37	35	32	33	34	33	34	35	37	39	57	32	71	41	24
11	87	91	88	89	88	89	90	88	85	79	79	77	70	66	69	71	73	75	77	78	77	81	84	82	66	91	81	24
12	82	72	59	61	62	65	67	68	70	69	62	57	55	52	46	42	43	42	50	60	69	76	79	83	42	83	62	24
13	82	81	82	83	81	87	90	87	85	81	74	62	57	49	44	34	28	28	32	49	58	61	62	63	28	90	64	24
14	67	73	75	73	80	91	93	82	67	59	54	47	44	41	40	39	36	36	38	48	57	59	59	66	36	93	59	24
15	62	67	74	77	82	87	88	80	76	71	71	66	65	66	65	63	62	71	71	73	76	77	79	81	62	88	73	24
16	84	86	88	89	90	90	89	88	85	80	73	71	72	73	72	75	84	93	97	97	98	98	**99**	99	71	**99**	86	24
17	99	98	98	98	98	98	97	96	95	93	89	86	81	82	85	86	90	93	93	92	96	97	98	96	81	99	**93**	24
18	89	91	93	93	93	93	93	92	80	72	68	64	56	48	44	40	37	35	37	43	54	57	53	56	35	93	66	24
19	63	64	67	67	66	68	63	55	51	49	45	42	38	35	34	36	33	36	40	48	49	51	54	59	33	68	51	24
20	59	60	62	69	69	69	67	64	59	54	53	49	45	45	44	44	42	40	41	52	59	63	62	65	40	69	56	24
21	72	72	74	72	79	80	81	76	61	52	47	48	50	48	52	54	53	51	52	57	56	58	66	73	47	81	62	24
22	86	94	90	82	81	82	81	79	75	67	59	50	43	40	37	32	43	46	45	46	52	59	66	73	32	94	63	24
23	68	70	72	69	80	81	77	61	52	50	49	47	45	41	40	38	37	39	40	39	47	54	55	51	37	81	54	24
24	52	50	45	40	41	44	45	45	44	46	43	38	36	34	33	33	37	39	42	43	51	53	53	62	33	62	44	24
25	60	75	81	87	90	90	81	52	41	40	39	38	39	43	42	40	37	34	35	37	45	56	59	57	34	90	54	24
26	60	68	80	86	89	91	85	64	48	41	37	35	32	32	31	29	31	32	31	37	56	72	74	76	29	91	55	24
27	71	74	79	78	74	71	70	62	44	39	36	34	36	36	35	33	30	27	27	37	50	64	64	61	27	79	51	24
28	62	63	61	66	64	64	64	53	44	43	44	43	35	31	33	33	33	37	39	44	49	63	72	75	31	75	51	24
29	76	78	85	88	91	94	93	91	86	77	70	65	55	49	44	40	40	40	40	43	56	70	73	78	40	94	68	24
30	85	88	91	89	83	85	81	68	59	51	50	47	40	33	33	33	30	31	31	46	62	74	80	87	30	91	61	24
HOURLY MAX	99	98	98	98	98	98	97	96	95	93	89	86	81	82	85	86	90	93	97	97	98	98	99	99				
HOURLY AVG	70	71	73	74	75	76	76	70	62	57	54	50	47	45	44	42	42	43	44	50	58	64	66	69				

STATUS FLAG CODES

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

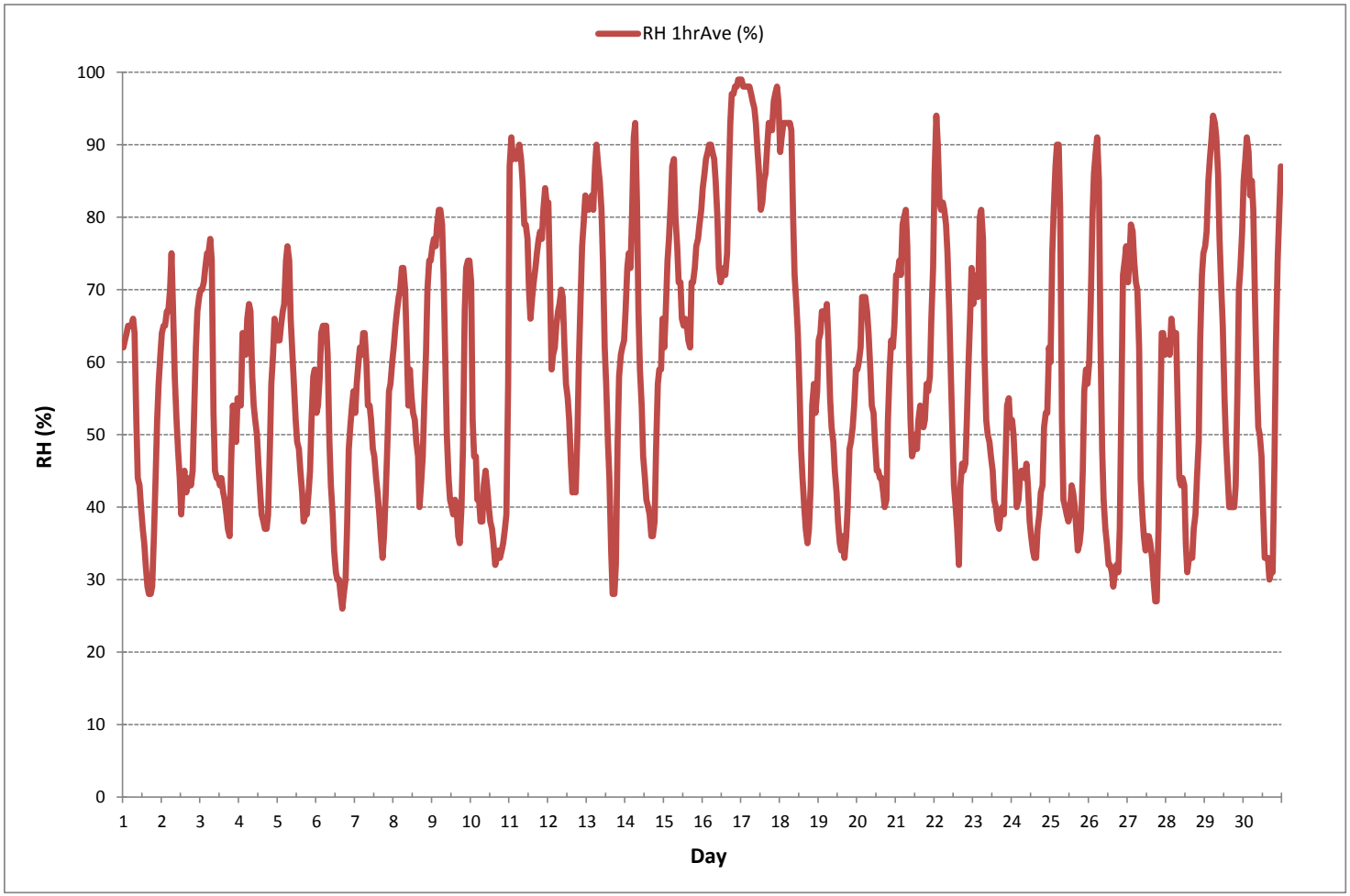
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	26	%	@ HOUR	16	ON DAY	6	
MAXIMUM 1-HR AVERAGE:	99	%	@ HOUR	22	ON DAY	16	
MAXIMUM 24-HR AVERAGE:	93	%			ON DAY	17	
			OPERATIONAL TIME:			720	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	18		MONTHLY AVERAGE:			59	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE

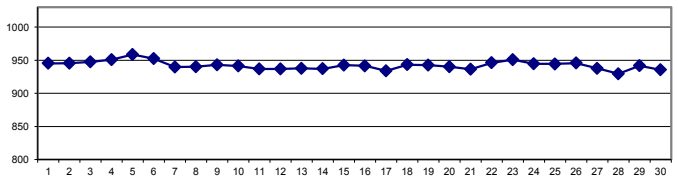
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	950	950	949	949	949	949	948	948	946	946	945	945	944	944	943	943	942	942	942	942	942	943	943	943	942	950	945	24
2	944	944	944	944	945	945	945	945	946	946	946	946	946	946	946	946	946	946	946	946	947	947	947	947	944	947	946	24
3	948	948	948	948	948	948	949	949	949	949	949	948	948	948	947	947	946	946	946	946	947	947	947	947	946	949	948	24
4	947	948	948	949	949	950	951	951	951	951	951	951	951	951	951	951	951	951	951	952	952	953	954	954	947	954	951	24
5	955	956	957	957	957	958	958	959	959	**960**	960	960	960	960	960	960	959	958	958	958	959	959	959	959	955	**960**	**959**	24
6	959	958	958	958	958	957	957	956	955	954	953	953	952	951	950	950	949	948	948	947	947	947	947	946	946	959	952	24
7	946	945	945	945	944	943	943	942	941	940	939	939	939	938	938	937	936	936	936	936	937	937	937	937	936	946	940	24
8	937	937	937	938	938	938	938	939	939	939	940	940	940	941	941	941	941	942	942	942	942	943	943	943	937	943	940	24
9	943	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	943	942	942	942	942	942	942	942	942	944	943	24
10	942	943	943	943	943	943	943	944	944	944	944	944	943	942	941	941	939	939	938	937	938	938	937	937	937	944	941	24
11	937	936	936	936	936	936	937	937	937	937	937	938	938	938	938	937	938	937	937	937	937	937	937	937	936	938	937	24
12	937	936	936	936	936	936	936	936	936	936	936	937	937	937	937	937	937	937	937	938	938	938	938	938	936	938	937	24
13	938	938	938	938	939	939	939	939	939	939	939	939	939	939	939	938	938	938	937	936	935	935	934	934	934	939	938	24
14	934	934	935	935	936	936	936	936	937	937	937	937	937	937	938	938	938	938	939	939	939	939	939	939	934	939	937	24
15	939	939	939	940	940	941	941	941	942	942	942	943	943	943	944	944	944	944	945	945	946	946	946	946	939	946	943	24
16	946	946	946	946	946	946	945	945	944	944	943	943	942	941	940	939	939	938	938	937	937	936	935	935	935	946	942	24
17	934	933	932	932	932	932	932	932	932	932	932	933	933	933	934	934	935	935	936	936	937	937	937	938	932	938	934	24
18	938	939	940	941	941	942	942	943	943	943	944	944	944	945	945	945	945	945	945	945	945	945	945	945	938	945	943	24
19	945	945	944	945	945	945	944	944	944	944	944	944	943	943	942	942	941	941	940	940	939	939	939	939	939	945	943	24
20	939	939	939	940	940	940	940	941	941	941	941	941	941	941	941	941	941	940	940	940	940	940	939	939	939	941	940	24
21	939	938	937	937	936	936	935	935	935	935	935	936	935	935	936	936	936	936	937	937	938	938	938	938	935	939	936	24
22	939	940	940	941	942	943	944	945	945	946	947	947	947	948	948	948	949	949	950	950	950	950	950	950	939	950	946	24
23	951	951	951	952	952	952	952	952	953	953	952	952	952	952	951	951	950	950	949	949	948	948	948	948	948	953	951	24
24	948	947	947	947	947	946	946	946	945	945	945	945	944	944	944	944	943	943	942	942	943	943	943	944	942	948	945	24
25	944	944	945	945	946	946	946	946	947	946	946	946	946	945	944	944	943	943	943	943	943	942	942	942	942	947	944	24
26	942	943	944	944	945	945	946	947	947	948	948	948	948	948	947	947	946	946	946	945	945	945	944	944	942	948	946	24
27	944	943	943	942	942	941	941	940	940	940	939	938	938	937	937	936	935	935	934	934	933	933	932	932	932	944	938	24
28	931	930	930	929	929	929	**928**	928	928	928	928	928	928	928	928	928	928	928	929	930	932	934	935	936	**928**	936	930	24
29	937	938	939	940	941	941	942	943	943	944	944	944	943	943	943	942	942	942	942	942	942	942	941	941	937	944	942	24
30	940	940	939	939	939	938	938	937	937	936	936	935	934	933	933	932	931	931	932	933	934	935	936	936	931	940	936	24
HOURLY MAX	959	958	958	958	958	958	958	959	959	960	960	960	960	960	960	960	959	958	958	958	959	959	959	959				
HOURLY AVG	942	942	942	943	943	943	943	943	943	943	943	943	943	942	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

24 HR AVERAGES April 2018

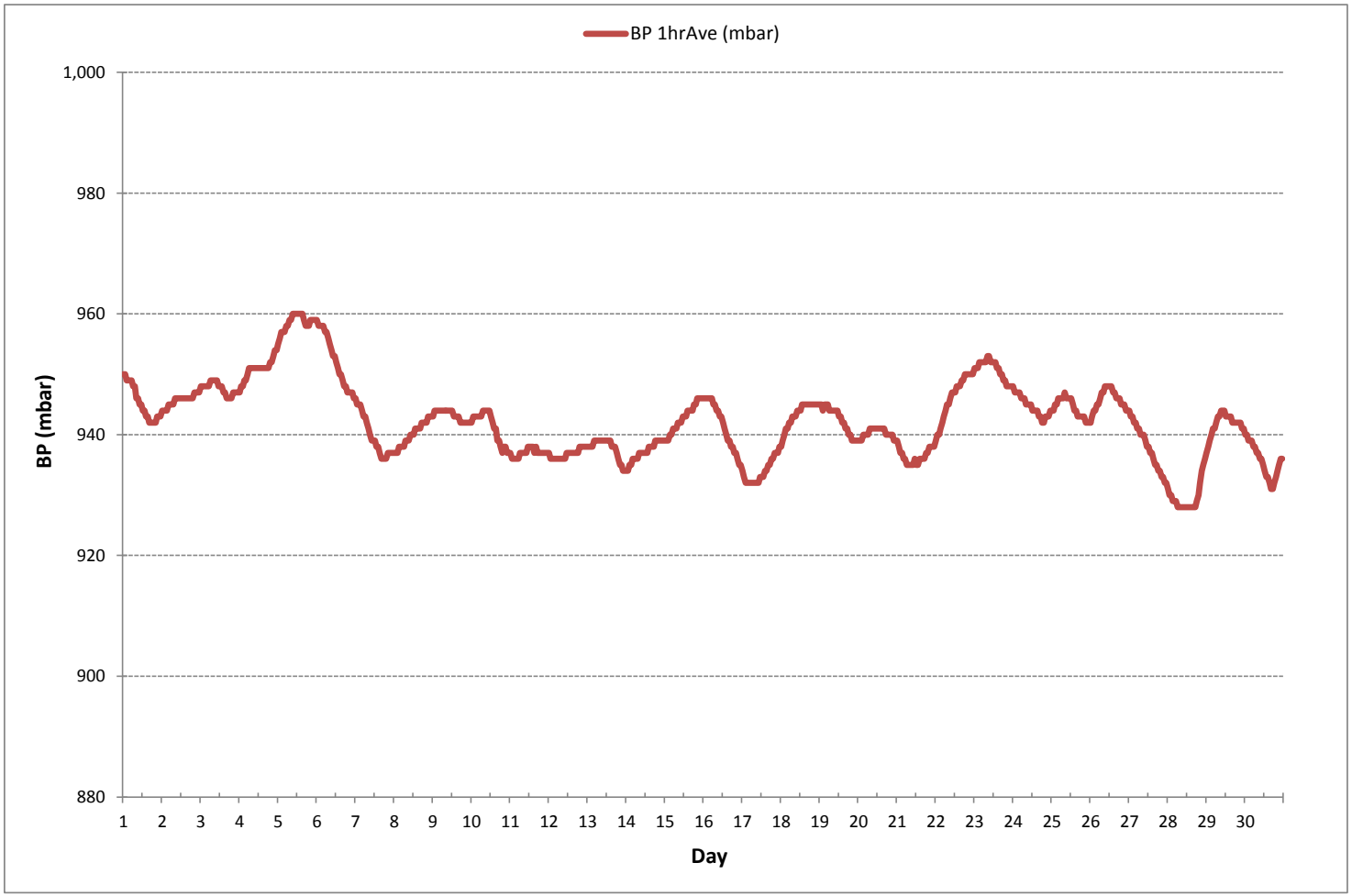


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	928	mbar	@ HOUR	6	ON DAY	28
MAXIMUM 1-HR AVERAGE:	960	mbar	@ HOUR	9	ON DAY	5
MAXIMUM 24-HR AVERAGE:	959	mbar			ON DAY	5

OPERATIONAL TIME:	720	hrs	
AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6	MONTHLY AVERAGE:	942 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

Maxxam
A Bureau Veritas Group Company

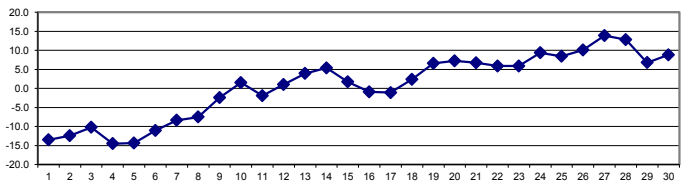
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	-22.1	-22.8	-23.9	-24.9	-26.1	**-26.7**	-26.7	-24.3	-17.1	-10.2	-7.5	-4.9	-4.2	-3.3	-2.1	-1.7	-1.6	-1.8	-2.7	-6.0	-10.6	-15.4	-18.0	-19.8	**-26.7**	-1.6	-13.5	24
2	-20.8	-21.5	-23.4	-23.9	-24.8	-23.6	-16.7	-14.1	-11.8	-9.9	-7.4	-5.6	-4.3	-4.9	-4.8	-4.1	-3.8	-4.4	-5.2	-6.4	-10.7	-15.8	-15.5	-14.2	-24.8	-3.8	-12.4	24
3	-13.6	-13.2	-12.7	-11.8	-12.6	-15.7	-17.6	-14.7	-11.4	-9.4	-8.4	-7.2	-5.9	-5.5	-4.9	-4.8	-4.9	-5.1	-5.9	-8.8	-11.6	-12.3	-12.8	-14.8	-17.6	-4.8	-10.2	24
4	-14.4	-17.6	-22.2	-18.9	-22.8	-25.6	-24.0	-18.0	-15.2	-13.4	-12.3	-11.1	-10.0	-8.3	-6.9	-6.3	-5.3	-5.1	-5.8	-9.5	-14.9	-19.0	-20.6	-21.3	-25.6	-5.1	-14.5	24
5	-23.0	-23.8	-23.4	-21.5	-20.8	-15.8	-17.1	-15.8	-14.8	-14.1	-13.0	-11.3	-10.2	-9.6	-8.2	-7.1	-6.6	-6.8	-7.3	-9.2	-11.3	-15.6	-18.9	-18.6	-23.8	-6.6	-14.3	24
6	-15.1	-15.7	-18.9	-21.7	-21.7	-21.3	-21.4	-18.7	-13.5	-9.6	-7.3	-5.7	-4.2	-2.8	-1.8	-1.1	-0.3	-0.8	-2.7	-6.5	-11.4	-13.5	-15.4	-15.2	-21.7	-0.3	-11.1	24
7	-15.0	-17.3	-17.6	-17.0	-16.1	-16.8	-17.1	-14.6	-11.4	-7.6	-5.2	-3.3	-2.1	-0.8	0.1	0.3	0.7	0.5	-1.2	-3.5	-6.7	-9.1	-9.4	-10.6	-17.6	0.7	-8.4	24
8	-11.4	-13.6	-15.1	-15.6	-17.0	-16.7	-16.7	-12.3	-8.0	-4.1	-5.2	-3.8	-2.6	-1.8	-0.8	0.3	2.8	1.1	0.2	-2.2	-5.3	-9.7	-11.0	-11.9	-17.0	2.8	-7.5	24
9	-12.3	-11.7	-12.3	-13.4	-13.2	-12.8	-11.9	-7.9	-3.0	0.5	2.2	3.4	3.6	4.7	4.5	5.3	6.3	6.5	5.3	3.7	0.6	-2.1	-2.5	-1.3	-13.4	6.5	-2.4	24
10	-0.5	1.2	0.5	0.0	-0.1	-0.4	-0.7	-0.3	0.1	1.3	2.1	2.6	3.3	4.1	4.8	4.4	4.4	4.0	3.2	2.2	1.0	0.1	0.0	-0.8	-0.8	4.8	1.5	24
11	-1.2	-1.5	-2.6	-3.4	-4.2	-4.6	-4.8	-4.9	-4.5	-3.4	-2.9	-2.3	0.2	0.9	0.4	0.2	-0.1	-0.5	-0.7	-0.8	-0.5	-0.9	-2.0	-1.4	-4.9	0.9	-1.9	24
12	-1.6	-2.1	-2.1	-2.1	-2.2	-2.3	-2.2	-1.7	-0.8	0.2	1.6	2.9	3.6	5.1	6.3	7.2	7.2	7.3	5.2	2.7	0.4	-1.7	-2.6	-3.9	-3.9	7.3	1.0	24
13	-2.1	-1.6	-1.4	-1.8	-2.1	-1.8	-0.9	0.8	1.7	2.6	4.4	6.7	6.9	8.1	8.8	9.9	11.1	11.0	9.2	5.8	4.3	5.0	4.9	4.5	-2.1	11.1	3.9	24
14	3.0	1.7	1.8	2.8	3.1	2.4	2.6	3.8	5.2	6.2	6.9	7.5	8.1	8.7	8.9	9.6	10.0	9.6	9.1	6.4	4.0	3.3	2.6	1.4	1.4	10.0	5.4	24
15	2.4	1.1	-0.3	-0.7	-1.7	-3.2	-3.9	0.5	2.8	4.6	5.0	6.1	6.3	5.8	5.1	4.9	4.4	2.5	2.0	1.0	-0.3	-0.8	-1.0	-1.3	-3.9	6.3	1.7	24
16	-1.9	-2.4	-2.7	-2.8	-2.9	-3.0	-3.1	-2.6	-1.6	-0.8	-0.2	0.4	0.9	1.3	1.7	1.8	1.3	0.7	-0.1	-0.7	-1.0	-1.2	-1.4	-1.4	-3.1	1.8	-0.9	24
17	-1.4	-1.5	-1.5	-1.8	-1.9	-2.0	-2.1	-1.9	-1.8	-1.7	-1.1	-0.5	0.1	0.3	0.9	0.4	-0.3	-0.9	-1.0	-1.2	-1.4	-1.6	-1.4	-1.1	-2.1	0.9	-1.1	24
18	-1.3	-3.5	-5.8	-7.0	-6.2	-5.6	-4.9	-1.8	1.0	3.4	4.3	4.9	6.2	7.3	7.7	8.8	9.2	9.0	8.4	6.6	4.8	3.9	4.5	3.4	-7.0	9.2	2.4	24
19	2.4	2.8	2.4	2.5	2.5	1.7	3.0	4.9	6.7	7.4	8.3	8.9	10.2	10.8	11.0	10.4	11.5	10.0	9.0	7.3	7.1	6.8	5.8	4.8	1.7	11.5	6.6	24
20	5.3	5.8	5.5	3.8	3.7	3.9	4.3	5.0	6.3	7.7	8.4	9.5	10.4	10.2	10.2	10.4	10.9	11.2	10.9	8.1	6.3	5.6	5.6	4.9	3.7	11.2	7.2	24
21	4.1	3.8	3.6	3.4	2.6	1.7	1.9	3.5	6.7	8.0	9.1	9.2	10.0	10.7	10.5	10.5	10.2	10.0	9.0	7.7	7.5	7.0	6.3	5.3	1.7	10.7	6.8	24
22	4.7	4.7	4.7	4.7	4.1	3.8	3.6	3.4	3.9	5.2	6.4	7.5	8.4	9.2	9.4	9.7	8.8	8.9	8.1	7.7	5.8	4.3	2.8	1.3	1.3	9.7	5.9	24
23	1.6	1.0	0.3	0.5	-1.7	-1.7	-0.3	3.5	5.6	6.6	7.8	9.0	9.3	10.4	11.1	11.8	11.5	10.6	10.5	9.8	7.2	5.9	5.3	5.8	-1.7	11.8	5.9	24
24	5.7	5.8	6.7	7.5	7.2	6.5	7.0	7.5	8.3	8.2	9.8	12.1	12.9	13.4	13.8	13.7	13.3	12.5	11.6	11.1	8.7	8.3	8.0	5.8	5.7	13.8	9.4	24
25	5.6	2.4	1.3	0.0	-0.5	-0.4	1.6	6.7	8.1	10.0	11.5	11.7	12.3	12.7	13.4	14.1	14.2	14.2	14.5	13.7	10.9	8.3	7.5	8.2	-0.5	14.5	8.4	24
26	7.3	5.3	2.5	1.2	0.4	0.5	2.4	8.0	10.1	12.0	13.2	14.2	15.3	16.2	16.9	17.6	18.6	18.3	17.8	16.3	11.1	7.5	5.4	4.6	0.4	18.6	10.1	24
27	5.0	4.3	4.2	4.4	4.9	5.5	6.5	8.9	14.0	16.7	18.3	20.2	20.3	20.7	21.4	22.3	**23.1**	22.8	22.5	19.7	14.9	11.0	11.1	10.8	4.2	**23.1**	**13.9**	24
28	9.5	9.6	9.2	7.4	7.2	7.7	9.7	11.9	13.6	14.8	15.5	16.4	18.9	19.4	18.9	18.9	17.6	16.7	15.7	13.6	11.1	9.0	7.7	7.2	7.2	19.4	12.8	24
29	5.7	5.2	4.4	4.5	3.6	3.3	3.4	3.8	4.5	5.5	6.2	7.2	9.1	8.8	10.9	11.4	11.0	10.5	10.3	9.4	6.8	7.7	5.3	4.0	3.3	11.4	6.8	24
30	1.9	1.0	1.2	1.5	2.5	2.2	4.1	7.8	8.5	10.8	12.4	13.1	14.3	15.1	15.6	16.1	15.5	14.5	14.2	11.6	8.9	7.1	6.6	5.3	1.0	16.1	8.8	24
HOURLY MAX	9.5	9.6	9.2	7.5	7.2	7.7	9.7	11.9	14.0	16.7	18.3	20.2	20.3	20.7	21.4	22.3	23.1	22.8	22.5	19.7	14.9	11.0	11.1	10.8				
HOURLY AVG	-3.1	-3.8	-4.6	-4.8	-5.2	-5.4	-4.7	-2.5	-0.3	1.6	2.8	3.9	4.9	5.6	6.1	6.5	6.7	6.2	5.5	3.7	1.2	-0.6	-1.4	-2.0				

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

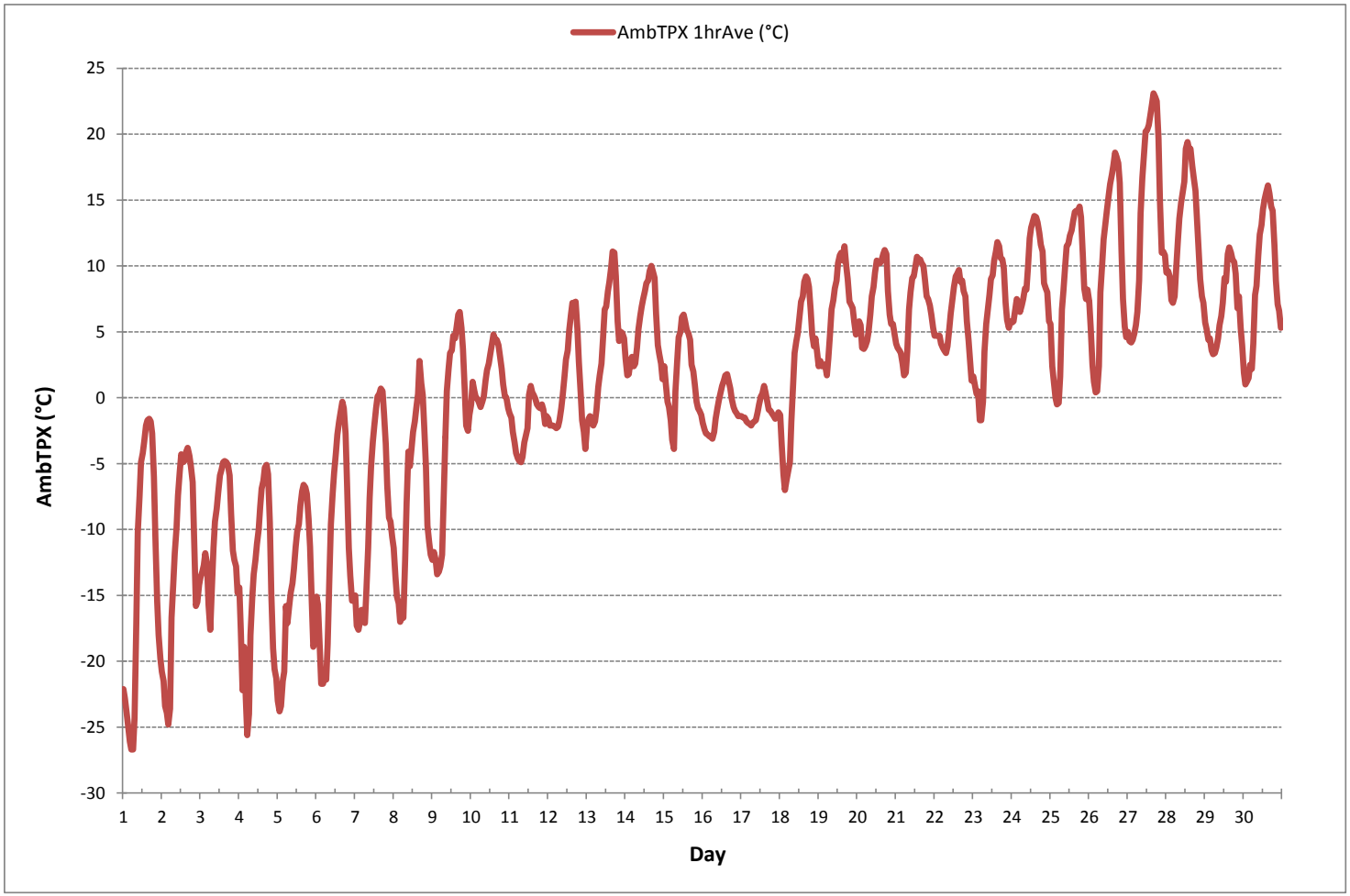
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-26.7	°C	@ HOUR	5	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	23.1	°C	@ HOUR	16	ON DAY	27	
MAXIMUM 24-HR AVERAGE:	13.9	°C			ON DAY	27	
			OPERATIONAL TIME:			720	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	9.7		MONTHLY AVERAGE:			0.7	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

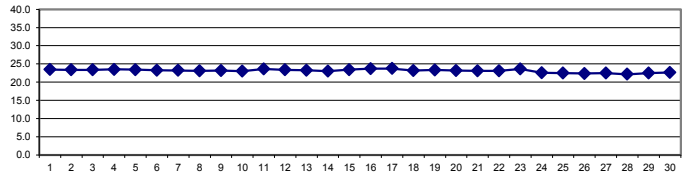
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	23.7	23.7	23.6	23.6	23.6	23.6	23.7	23.7	23.8	24.2	24.3	24.7	23.4	22.8	22.4	22.2	22.0	21.5	22.9	24.2	24.5	24.2	23.6	23.7	21.5	24.7	23.5	24
2	23.8	23.9	23.7	23.5	23.5	23.5	23.6	23.6	23.6	24.1	24.5	23.8	22.4	22.0	23.0	23.4	22.2	22.5	24.0	23.7	22.6	23.3	23.6	23.8	22.0	24.5	23.4	24
3	23.8	23.7	23.7	23.7	23.6	23.7	23.7	23.7	23.7	23.9	24.3	24.1	22.6	22.5	23.5	22.4	21.7	23.2	23.3	22.2	23.2	23.6	23.7	23.7	21.7	24.3	23.4	24
4	23.7	23.9	23.8	23.9	23.7	23.8	23.7	23.7	23.8	23.8	23.5	24.0	23.9	24.1	24.3	23.1	22.5	22.1	22.0	23.0	23.2	23.4	23.6	23.6	22.0	24.3	23.5	24
5	23.7	23.6	23.6	23.6	23.8	23.6	23.6	23.6	23.6	23.6	23.6	23.7	24.0	24.2	23.2	22.1	23.6	22.0	23.0	23.2	23.2	23.3	23.4	23.5	22.0	24.2	23.4	24
6	23.5	23.5	23.7	23.5	23.6	23.5	23.5	23.5	23.7	23.8	23.5	23.8	24.2	23.7	22.1	23.3	22.2	21.7	23.5	22.3	22.6	23.1	23.4	23.6	21.7	24.2	23.3	24
7	23.6	23.5	23.6	23.6	23.6	23.5	23.5	23.6	23.7	23.5	23.3	23.7	24.2	23.1	21.9	22.6	23.0	21.8	23.3	22.3	22.6	23.1	23.2	23.5	21.8	24.2	23.2	24
8	23.6	23.7	23.7	23.5	23.6	23.6	23.7	23.6	23.7	24.0	24.4	22.9	22.2	22.2	22.2	22.1	22.1	21.9	21.8	21.7	23.2	23.7	23.6	23.4	21.7	24.4	23.1	24
9	23.4	23.4	23.3	23.5	23.5	23.6	23.6	23.3	23.3	24.2	23.6	22.6	22.5	22.4	23.0	23.4	23.6	23.4	23.5	22.0	22.5	22.3	22.9	23.9	22.0	24.2	23.2	24
10	24.4	22.8	22.9	23.9	24.3	24.3	22.6	22.8	23.0	22.5	22.6	22.8	22.8	22.6	22.9	22.7	22.1	**21.1**	22.0	22.4	24.1	24.4	22.4	23.3	**21.1**	24.4	23.0	24
11	24.2	24.6	24.8	23.1	23.0	23.4	23.7	24.0	24.1	24.4	25.0	22.9	22.3	21.8	23.2	23.4	22.2	22.9	24.2	24.8	22.5	23.1	24.1	24.6	21.8	25.0	23.6	24
12	24.9	24.9	22.6	23.4	23.9	24.2	24.4	24.5	24.7	24.8	22.7	22.1	23.0	23.1	22.0	22.3	22.8	22.7	22.4	22.1	22.3	22.6	23.9	24.4	22.0	24.9	23.4	24
13	24.5	24.6	24.8	24.6	22.6	23.4	24.1	24.5	24.9	22.7	22.7	22.5	22.1	22.3	23.0	23.0	22.9	22.9	22.7	22.8	22.8	22.4	22.5	22.5	22.1	24.9	23.2	24
14	22.7	24.3	23.8	22.7	23.1	24.5	23.6	23.0	22.7	22.3	22.2	23.2	23.2	23.0	23.0	22.9	22.9	22.9	22.9	22.9	23.1	22.8	22.6	22.5	22.2	24.5	23.0	24
15	23.5	24.6	24.0	22.7	23.7	24.3	24.6	25.0	23.0	22.3	22.4	23.3	23.2	23.0	23.0	23.0	23.0	23.1	23.2	22.5	22.5	22.9	24.2	24.9	22.3	25.0	23.4	24
16	23.7	22.7	23.8	24.3	24.7	25.0	**25.2**	23.8	22.7	23.7	24.2	24.8	22.5	22.2	23.5	24.6	22.5	22.4	23.6	24.7	24.2	22.5	23.4	24.4	22.2	**25.2**	23.7	24
17	25.0	23.2	22.7	24.0	24.8	24.4	22.6	23.4	24.4	25.0	23.6	22.9	22.6	24.2	23.6	22.8	22.4	23.9	24.9	22.9	22.8	24.0	24.7	25.2	22.4	25.2	**23.8**	24
18	22.9	23.0	23.9	24.2	24.3	24.5	24.5	24.7	25.1	22.5	22.4	22.2	22.2	22.1	22.0	22.9	23.0	22.9	22.9	22.8	23.1	22.3	22.8	22.6	22.0	25.1	23.2	24
19	24.1	24.9	23.3	22.7	23.7	24.4	24.8	23.8	22.4	22.2	23.2	23.3	23.1	23.1	23.0	22.9	22.9	22.9	23.0	23.0	23.3	23.3	23.4	23.1	22.2	24.9	23.3	24
20	22.5	22.9	22.5	23.5	24.7	23.1	22.7	22.9	24.5	23.1	23.4	23.1	23.1	23.0	23.0	23.0	23.0	22.9	22.9	22.9	23.0	23.2	23.3	23.3	22.5	24.7	23.1	24
21	22.7	22.5	22.9	22.4	23.7	24.9	23.1	22.8	22.5	22.7	22.9	22.5	22.3	22.4	23.2	23.2	23.2	23.2	23.4	23.3	23.2	23.4	23.6	23.6	22.3	24.9	23.1	24
22	23.1	22.7	23.1	23.1	23.0	22.9	24.0	24.8	24.5	22.9	23.3	22.7	22.5	22.4	22.4	22.3	22.3	23.1	23.4	23.4	23.5	23.0	22.8	22.8	22.3	24.8	23.1	24
23	24.0	24.9	24.9	22.9	23.5	24.3	24.7	25.2	23.0	22.5	23.4	23.6	23.5	23.4	23.4	23.3	23.3	23.3	23.3	23.3	23.4	23.5	23.4	23.1	22.5	25.2	23.6	24
24	22.8	23.2	22.8	23.0	24.7	23.2	23.2	23.1	23.0	23.0	22.7	22.4	22.2	22.1	22.3	22.1	21.9	21.9	21.9	22.0	22.0	22.1	22.2	22.2	21.9	24.7	22.6	24
25	22.4	22.5	22.3	23.8	24.6	24.0	22.4	23.3	23.6	22.4	22.2	22.1	22.1	22.1	22.1	22.0	22.0	22.0	22.0	21.9	21.9	22.0	22.1	22.2	21.9	24.6	22.5	24
26	22.3	22.3	22.6	22.2	23.8	24.1	22.6	22.1	22.3	22.3	22.3	22.2	22.2	22.2	22.2	22.2	22.2	22.1	22.1	21.9	21.8	22.0	22.1	22.3	21.8	24.1	22.4	24
27	22.7	22.3	22.8	24.2	23.2	22.4	22.7	24.1	22.4	22.3	22.3	22.4	22.3	22.4	22.3	22.4	22.4	22.3	22.3	22.1	21.9	21.8	22.0	22.1	21.8	24.2	22.5	24
28	22.1	22.2	22.2	22.3	22.5	22.6	22.4	22.2	22.1	22.1	22.0	22.0	22.2	22.2	22.3	22.2	22.2	22.1	22.0	21.9	21.9	22.0	22.1	22.2	21.9	22.6	22.2	24
29	22.3	22.5	22.8	22.1	22.9	24.4	23.0	22.5	22.2	23.9	22.8	22.3	22.2	22.2	22.1	22.1	22.0	22.0	22.0	22.0	22.1	22.2	22.6	22.2	22.0	24.4	22.5	24
30	23.3	24.2	24.6	24.9	22.6	22.9	23.7	24.5	23.0	22.2	22.1	22.0	21.9	21.9	22.0	21.8	22.0	21.9	22.0	22.1	22.0	22.1	22.2	22.2	21.8	24.9	22.7	24
HOURLY MAX	25.0	24.9	24.9	24.9	24.8	25.0	25.2	25.2	25.1	25.0	25.0	24.8	24.2	24.2	24.3	24.6	23.6	23.9	24.9	24.8	24.5	24.4	24.7	25.2				
HOURLY AVG	23.4	23.5	23.4	23.4	23.7	23.8	23.6	23.6	23.4	23.2	23.2	23.0	22.8	22.7	22.7	22.7	22.5	22.5	22.9	22.7	22.8	22.9	23.1	23.3				

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

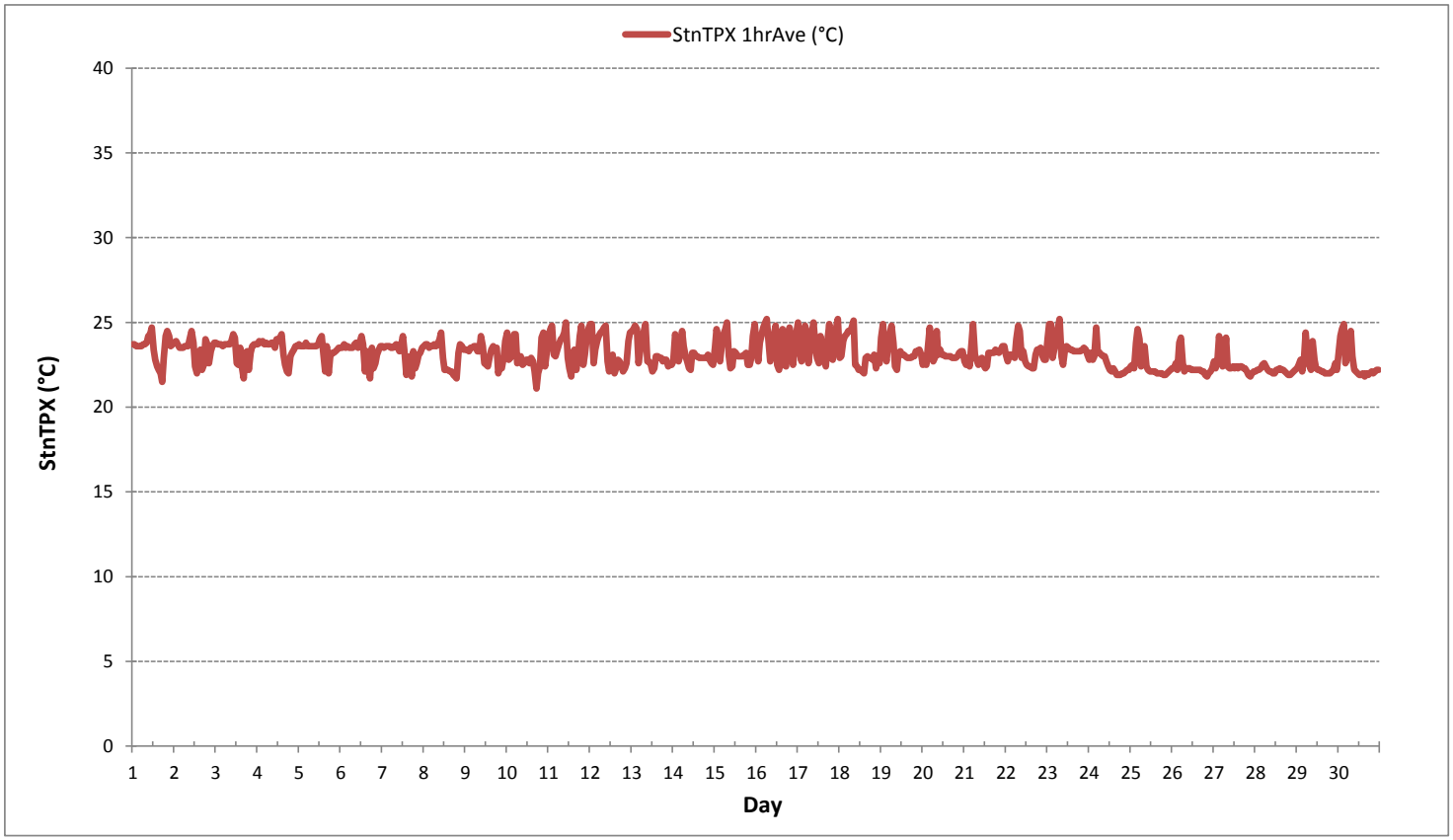
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	21.1	°C	@ HOUR	17	ON DAY	10	
MAXIMUM 1-HR AVERAGE:	25.2	°C	@ HOUR	6	ON DAY	16	
MAXIMUM 24-HR AVERAGE:	23.8	°C			ON DAY	17	
			OPERATIONAL TIME:			720	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.8		MONTHLY AVERAGE:			23.1	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

Thermo 43C Sulphur Dioxide Analyzer Calibration

Date:	April 10, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	944	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	986b	**Weather Conditions:**	Sunny		
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	13:19	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	17:07	**Cal Gas Expiry Date:**	October 24, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a		

Analyzer:

Serial Number/Owner:	43C-62339-335 Maxxam	**Range ppb:**	500
Last Calibration Date:	March 6, 2018	**As Found C.F.:**	0.994
Previous C.F.:	0.999	**New C.F.:**	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018
Calibrator ID/Expiry Date:	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

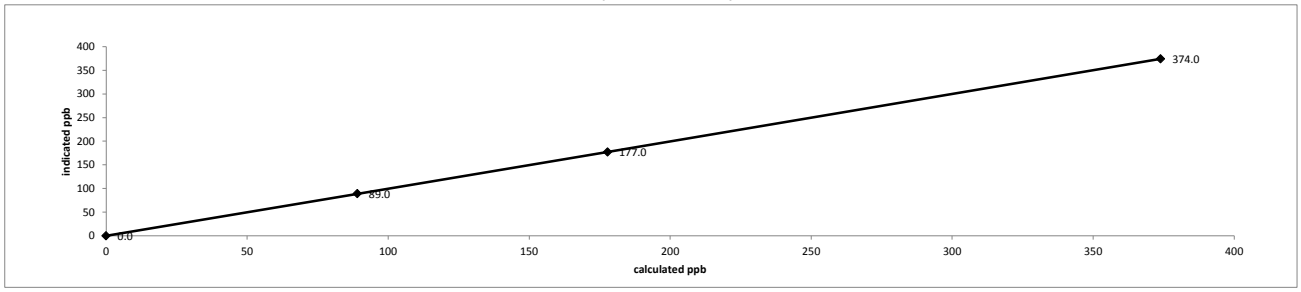
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**			
as found zero	6041	0.00	6041	0.0	0.0	n/a
as found high	5999	47.20	6046	373.9	376.0	0.994
adjusted zero	6041	0.00	6041	0.0	0.0	n/a
adjusted high	5999	47.20	6046	373.9	374.0	1.000
mid	6026	22.46	6048	177.8	177.0	1.005
low	6028	11.24	6039	89.1	89.0	1.001
calibrator zero	6041	0.00	6041	0.0	0.0	n/a
					Average C.F.=	1.002

Linear Regression/Calibration Results:

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

Thermo 43C Sulphur Dioxide Analyzer Calibration

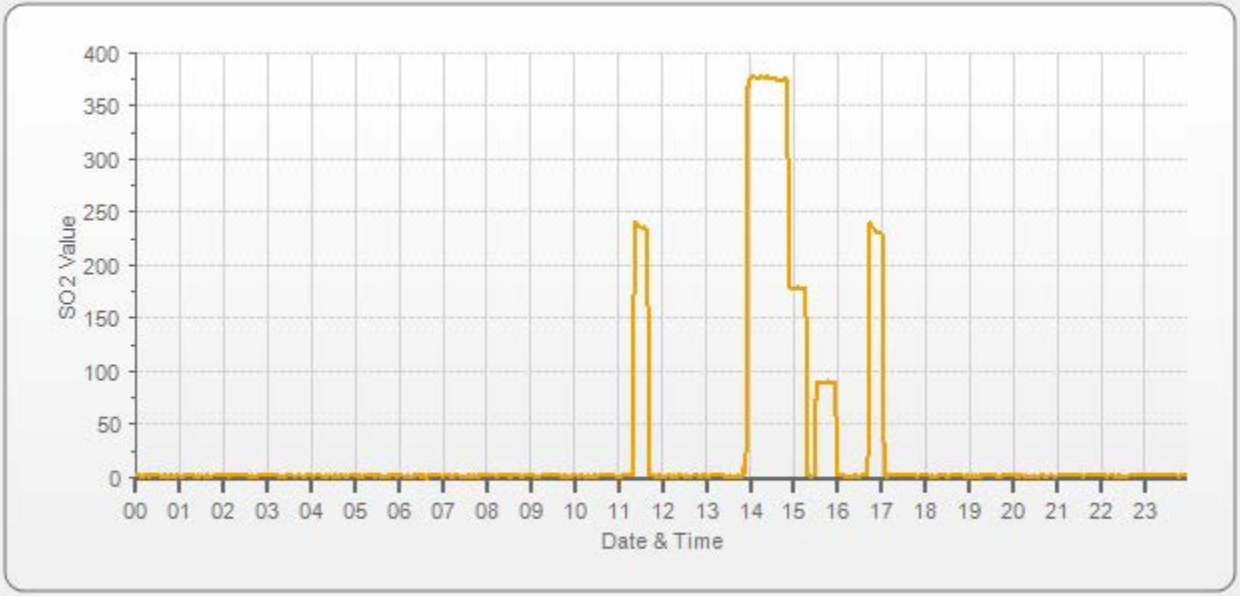


As found:		As left:	
Bkg:	78.2	Bkg:	77.6
Coef:	0.875	Coef:	0.867
Pmt:	-654	Pmt:	-654
0	Lamp=845	0	Lamp=845
Battery:	3.3	Battery:	3.3
Internal:	29.8	Internal:	29.6
Chamber:	45.4	Chamber:	45.3
Pressure:	423.3	Pressure:	422.5
Flow:	0.745	Flow:	0.745
Intensity:	~38000	Intensity:	~38000
Averaging Time:	120	Averaging Time:	120
Expected Value:	231.0	Expected Value:	231.0

Comments:

The analyzer cooling fan filter(s) were cleaned.

SO2[ppb] Station: PRAMP_986 Daily: 18/04/10 Type: AVG 1 Min. [1 Min.]



TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	April 10, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	946	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018		°C
Location/Station Name:	986b	**Weather Conditions:**	Mainly sunny		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	9:04	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	14:23	**Cal Gas Expiry Date:**	November 7, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CD-Nova CDN101 #516		

Analyzer:

Serial Number/Owner:	1152940011 Maxxam	**Range ppb:**	100
Last Calibration Date:	March 6, 2018	**As Found C.F.:**	0.977
Previous C.F.:	1.000	**New C.F.:**	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018
Calibrator ID/Expiry Date:	API id# 829 expires January 31, 2019
Cal Gas Cylinder I.D. # :	LL119432
Cal Gas Conc. (ppm):	10.3

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	10:09 / 10:19
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	0.0
Analyzer Response: (ppb):	0.0
Zero Corrected Result (ppb):	0.0

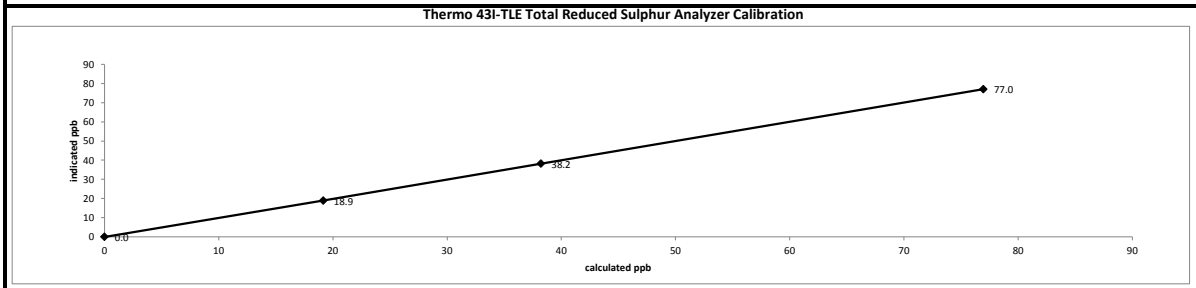
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**		
as found zero	7481	0.00	7481	0.0	-0.2	n/a
as found high	7409	55.89	7465	77.0	78.6	0.977
adjusted zero	7481	0.00	7481	0.0	0.0	n/a
adjusted high	7409	55.89	7465	77.0	77.0	1.000
mid	7449	27.80	7477	38.2	38.2	1.000
low	7455	13.93	7469	19.2	18.9	1.014
calibrator zero	7481	0.00	7481	0.0	0.3	n/a
					Average C.F.=	1.005

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.998**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.12%**	**± 3% F.S.**
% change in C.F. from last cal=	**2.35%**	**± 10%**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



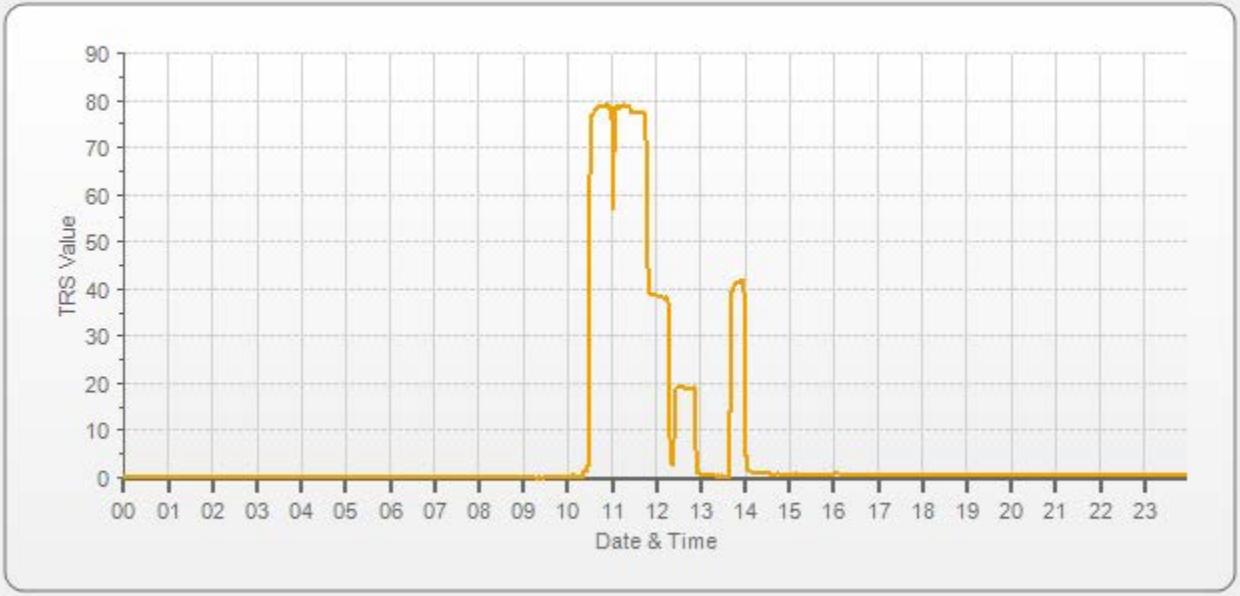
	As found:		As left:
Bkg:	2.37	Bkg:	2.11
Coef:	0.985	Coef:	0.964
Pmt:	-690.8	Pmt:	-690.8
Flash:	971	Flash:	971
Internal:	33.9	Internal:	33.7
Chamber:	45.3	Chamber:	45.0
Perm Oven Gas:	44.99	Perm Oven Gas:	45.00
Perm Oven Heater:	44.24	Perm Oven Heater:	44.24
Pressure:	656.8	Pressure:	655.3
Sample Flow:	0.480	Sample Flow:	0.479
Lamp Intensity:	92	Lamp Intensity:	91
Converter:	820	Converter:	820
Converter Set:	820	Converter Set:	820
Averaging Time:	120	Averaging Time:	120
Expected Value:	40.8	Expected Value:	41.7

Comments:

The analyzer cooling fan filter(s) were cleaned.

The "As Found High" was interrupted by the daily zero/span. The point was restarted.

TRS[ppb] Station: PRAMP_986 Daily: 18/04/10 Type: AVG 1 Min. [1 Min.]



Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	April 30, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.68	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160348895 expires March 29, 2019	22.5	°C
Location/Station Name:	986B	**Weather Conditions:**	Mainly sunny		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	as found		
Start Time 24 hr. (mst):	11:01	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	12:52	**Cal Gas Expiry Date:**	August 23, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CD-Nova CDN101#516		

Analyzer:

Serial Number/Owner:	1152940011	Maxxam	**Range ppb:**	100
Last Calibration Date:	April 10, 2018		**As Found C.F.:**	1.002
Previous C.F.:	1.000		**New C.F.:**	n/a

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:	Environics id# 1991 expires March 15, 2019
Cal Gas Cylinder I.D. # :	LL119500
Cal Gas Conc. (ppm):	9.8

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	11:37/11:48
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	-0.1
Analyzer Response: (ppb):	-0.1
Zero Corrected Result (ppb):	0.0

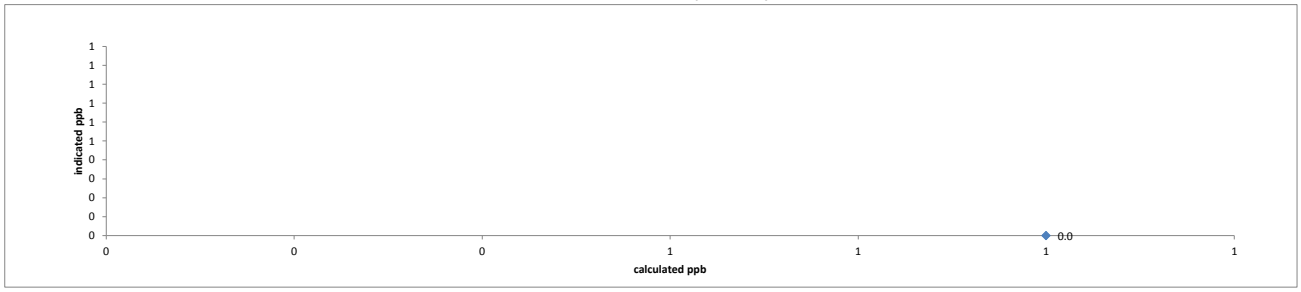
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated		
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**	**Indicated Concentration (ppb):**	**Correction Factors (C.F.):**
as found zero	7506	0.00	7506	0.0	-0.1	n/a
as found high	7416	60.28	7476	79.0	78.8	1.002
					Average C.F.=	n/a

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**n/a**	**n/a**
Slope =	**n/a**	**n/a**
b (Intercept as % of full scale)=	**n/a**	**n/a**
% change in C.F. from last cal=	**-0.15%**	**n/a**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



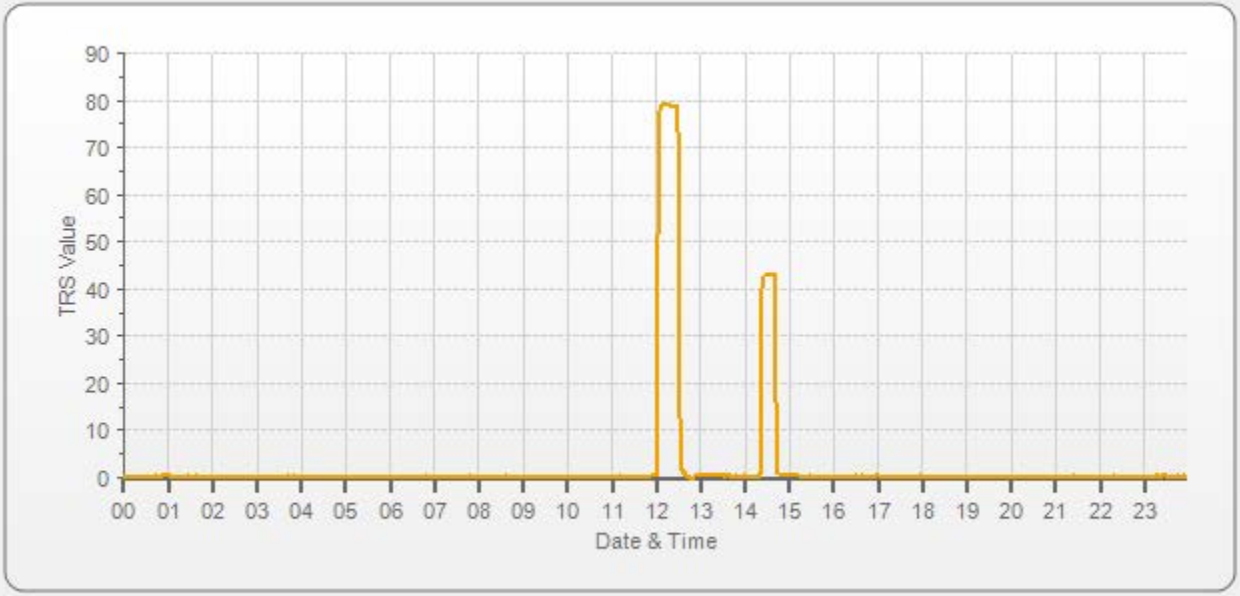
As found:		As left:	
Bkg:	2.12	Bkg:	2.12
Coef:	0.964	Coef:	0.964
Pmt:	-690.4 V	Pmt:	-690.4 V
Flash:	965 V	Flash:	965 V
Internal:	34.1 °C	Internal:	34.1 °C
Chamber:	45.1 °C	Chamber:	45.1 °C
Perm Oven Gas:	45.0 °C	Perm Oven Gas:	45.0 °C
Perm Oven Heater:	44.24 °C	Perm Oven Heater:	44.24 °C
Pressure:	648.9 mmHg	Pressure:	648.9 mmHg
Sample Flow:	0.475 L/Min	Sample Flow:	0.475 L/Min
Lamp Intensity:	91 %	Lamp Intensity:	91 %
Converter:	820 °C	Converter:	820 °C
Converter Set:	820 °C	Converter Set:	820 °C
Averaging Time:	120 SEC	Averaging Time:	120 SEC
Expected Value:	40.8	Expected Value:	40.8

Comments:

The manifold blower was found to be working normally.

An As Found was performed due to a drift in the daily span.

TRS[ppb] Station: PRAMP_986 Daily: 18/04/30 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 10, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	946	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	986b	**Weather Conditions:**	Mainly sunny		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	routine monthly		
Start/End Time 24 hr. (mst):	09:04 / 14:00	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

Serial Number/Owner:	1022143392	Maxxam
Measured Flow:	0.97 L/min	
Last Calibration Date:	March 6, 2018	
Range ppm:	20 CH4/20 NMHC/40 THC	

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	0.999	1.014	1.000
NMHC =	1.006	1.003	0.995
THC =	1.003	1.008	0.998

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018		
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018		
Calibrator ID/Expiry Date:	Sabio id# 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	2506	0.00	2506	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2442	60.68	2503	14.55	13.80	28.35	14.35	13.76	28.12	1.014	1.003	1.008
adjusted zero	2506	0.00	2506	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2442	60.68	2503	14.55	13.80	28.35	14.54	13.87	28.41	1.000	0.995	0.998
mid	2481	30.48	2511	7.28	6.91	14.19	7.33	6.93	14.27	0.994	0.997	0.995
low	2500	15.78	2516	3.76	3.57	7.33	3.80	3.57	7.36	0.990	1.000	0.996
calibrator zero	2506	0.00	2506	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.995	0.997	0.996

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.999**	**1.005**	**1.002**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.13%**	**-0.05%**	**0.03%**	**± 3% F.S.**
% change in C.F. from last cal=	**-1.46%**	**0.31%**	**-0.50%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-312.1	Calibration History cnt'd:	NM Peak Area:	66976
Temperatures:	Detector Oven:	175.1	Crucial Settings:	Methane Start:	n/a
	Filter:	175.1		Methane End:	n/a
	Column Oven:	75.5		Backflush:	n/a
	Internal:	39.0		NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	150/2600 50		NMHC End:	n/a
	Fuel:	2000 50	Run History>1:	Date:	10Apr2018
	Span Gas:	350/1900 28		Time:	12:47
	Zero Air Generator:	45		CH_4 PK HT:	0
Internal Pressures:	Carrier:	31.4		CH_4 RT:	8.0
	Fuel:	40.5		CH_4 Baseline:	1728
	Air:	32.4		CH_4 LOD:	28
FID Status:	Status:	LIT		CH_4 SD:	9
	Counts:	21556		CH_4 CONC:	0.00
	Flame:	322.0		NM PK HT:	0
	Det Base:	175.0		NM Peak Area:	0
Flame and Power Stats:	Last Power On:	15Mar2018@09:19		NM CONC:	0.00
	Flameouts:	1		NM Base Start:	1802
	Det Oven at Start:	169.3		NM Base End:	1794
	Col Oven at Start:	75.1		NM LOD:	10
Calibration History:	Time:	10Apr2018@10:52		NM Start IDX:	22
	Type:	Span		NM End IDX:	68
	Status:	Good		NM Max Slope:	3.5e-01
	Check/Adjust:	Adjust		NM Min Slope:	-3.7e-01
	CH_4 Span Conc:	14.55		NM PT Count:	0
	CH_4 SP Ratio:	0.000767	Expected Values:	Previous CH4:	9.06
	CH_4 RT:	12.4		Previous NMHC	10.21
	CH_4 PK IDX:	22		Previous THC:	19.27
	CH_4 PK HT:	18965		New CH4:	10.36
	NM Span Conc:	13.80		New NMHC	11.18
	NM SP Ratio:	0.000206		New THC:	21.54

Comments:

The analyzer sample inlet filter was changed.

A new span gas cylinder was installed.

The analyzer cooling fan filter(s) were cleaned.

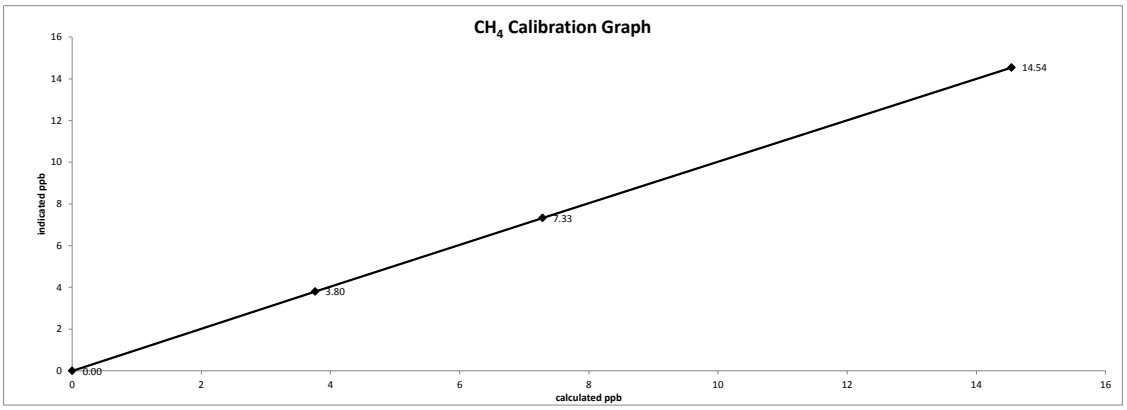
The manifold blower was found to be working normally.

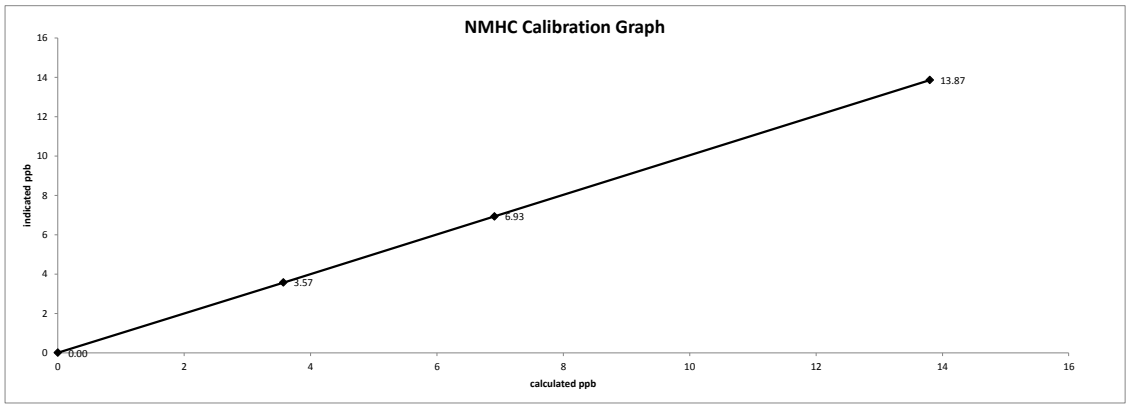
A new nitrogen cylinder was installed.

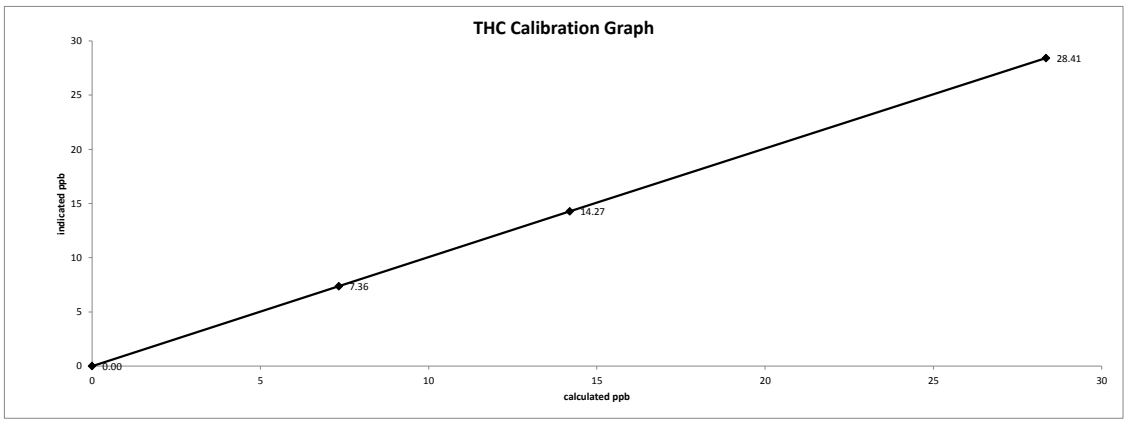
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

Calibration was assessed for stability. All points met Maxxam internal stability requirement.

Date:	**April 10, 2018**	**Start/End Time 24 hr. (mst):**	**09:04 / 14:00**
Company/Airshed:	**PRAMP**	**Calibration Purpose:**	**routine monthly**
Location/Station Name:	**986b**	**Calibration Method:**	**Gas Dilution**







Station: PRAMP_986 Daily: 18/04/10 Type: AVG 1 Min. [1 Min.]

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 24, 2018	**Barometer/B.P./units:** Defender High 148943 expires November 21, 2018	710 mmHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:** Defender High 148943 expires November 21, 2018	23 °C
Location/Station Name:	986b	**Weather Conditions:**	Cloudy/Overcast
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	repeat
Start/End Time 24 hr. (mst):	13:06 / 16:52	**Performed By/Reviewer:**	Chris Wesson / Rob Fisher
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025

Analyzer:

Serial Number/Owner:	1022143392	Maxxam
Measured Flow:	0.97 L/min	
Last Calibration Date:	April 10, 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	0.993	0.999
NMHC =	0.995	0.959	1.003
THC =	0.998	0.978	1.001

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018		
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 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	2503	0.00	2503	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2442	60.77	2503	14.57	13.82	28.39	14.67	14.41	29.03	0.993	0.959	0.978
adjusted high	2442	60.77	2503	14.57	13.82	28.39	14.58	13.78	28.37	0.999	1.003	1.001
mid	2480	30.53	2511	7.30	6.92	14.22	7.35	6.90	14.26	0.993	1.003	0.997
low	2497	15.78	2513	3.77	3.57	7.34	3.81	3.56	7.37	0.989	1.004	0.996
calibrator zero	2503	0.00	2503	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.993	1.003	0.998

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**0.997**	**0.999**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.13%**	**-0.01%**	**0.06%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.70%**	**3.60%**	**2.01%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-312.0		Calibration History cnt'd:	NM Peak Area:	70049
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:	38.3			NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	2100	50		NMHC End:	n/a
	Fuel:	1100	50	Run History>1:	Date:	24Apr2018
	Span Gas:	1750	28		Time:	15:58
	Zero Air Generator:	45			CH_4 PK HT:	0
Internal Pressures:	Carrier:	31.4			CH_4 RT:	8.0
	Fuel:	40.5			CH_4 Baseline:	1723
	Air:	32.4			CH_4 LOD:	15
FID Status:	Status:	LIT			CH_4 SD:	5
	Counts:	21204			CH_4 CONC:	0.00
	Flame:	322.2			NM PK HT:	0
	Det Base:	175.0			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	15Mar2018@09:19			NM CONC:	0.00
	Flameouts:	1			NM Base Start:	1755
	Det Oven at Start:	169.3			NM Base End:	1752
	Col Oven at Start:	75.1			NM LOD:	11
Calibration History:	Time:	24Apr2018@14:20			NM Start IDX:	42
	Type:	Span			NM End IDX:	60
	Status:	Good			NM Max Slope:	3.3e01
	Check/Adjust:	Adjust			NM Min Slope:	-4.1e-01
	CH_4 Span Conc:	14.57			NM PT Count:	0
	CH_4 SP Ratio:	0.000763		Expected Values:	Previous CH4:	10.36
	CH_4 RT:	12.4			Previous NMHC	11.18
	CH_4 PK IDX:	22			Previous THC:	21.54
	CH_4 PK HT:	19090			New CH4:	10.26
	NM Span Conc:	13.82			New NMHC	11.11
	NM SP Ratio:	0.000197			New THC:	21.37

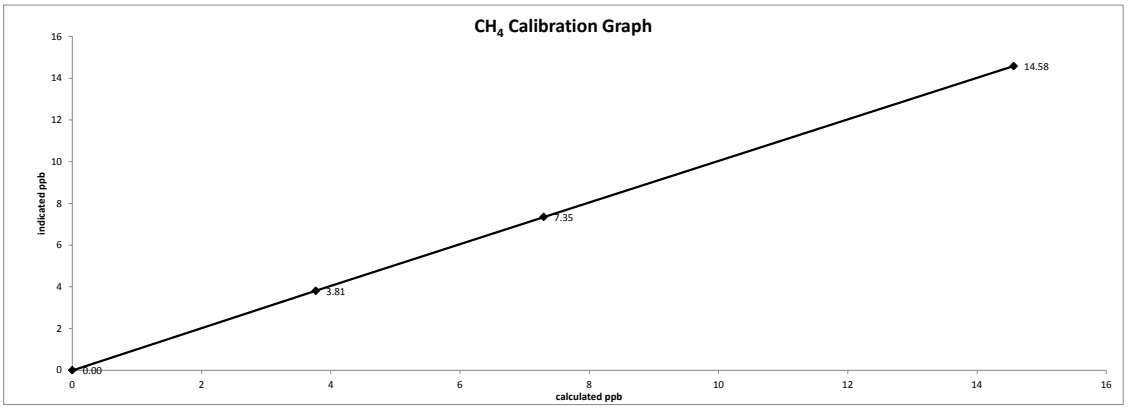
Comments:

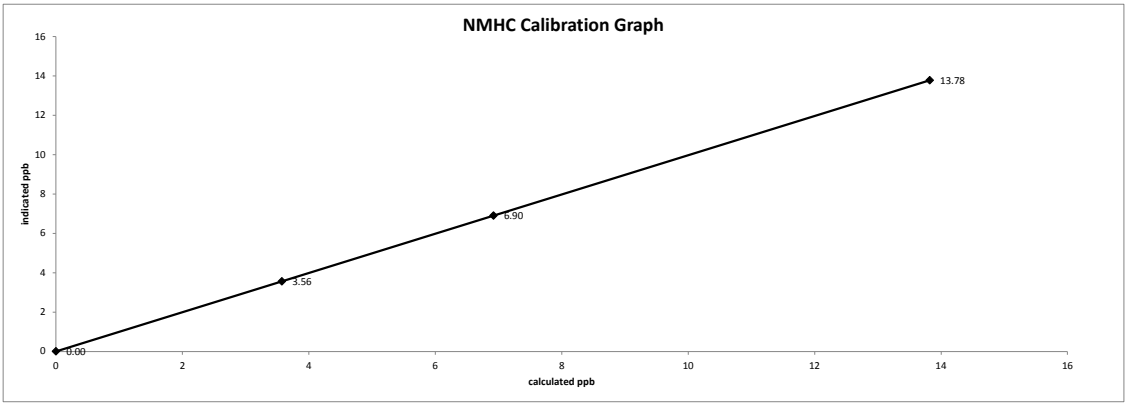
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

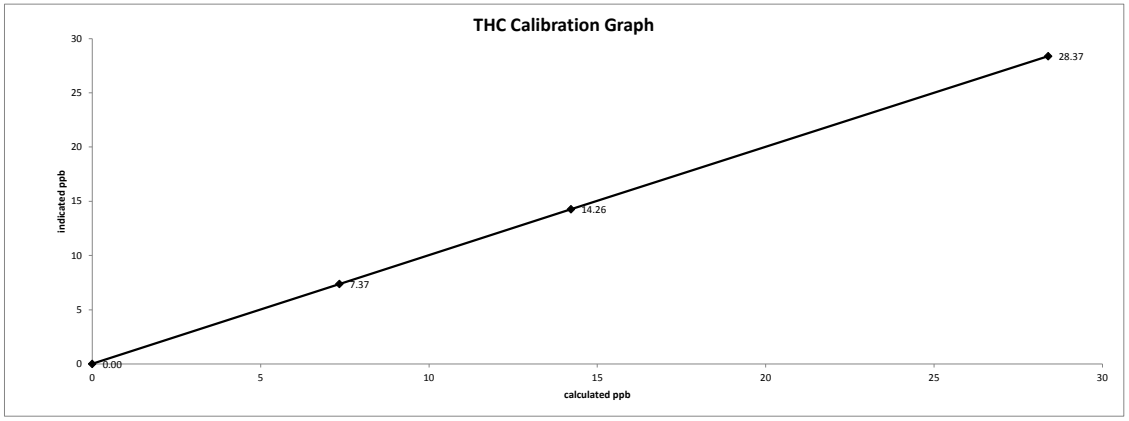
The manifold blower was found to be working normally.

Repeat calibration due to NMHC span drift.

Date:	April 24, 2018	Start/End Time 24 hr. (mst):	13:06 / 16:52
Company/Airshed:	PRAMP	Calibration Purpose:	repeat
Location/Station Name:	986b	Calibration Method:	Gas Dilution







Station: PRAMP_986 Daily: 18/04/24 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 Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Limin Li
Audit Location:	986B	**Reviewed By:**	Tom Bourque
Audit Date:	April 4, 2018	**Start/End Time (mst):**	16:22/17:42
Calibration Purpose:	routine annual	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1V
Sensor Model:	5305VK	**Velocity Unit Output Range:**	0-200 KPH
Serial #:	129612	**Direction Voltage Output Range:**	0-1 V
Previous Cal/Audit Date:	April 5, 2017	**Direction Unit Output Range:**	0-360 DEG

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	36.9	1.001
3000	55.3	55.3	55.3	1.000
4000	73.7	73.7	73.7	1.000
5000	92.2	92.2	92.2	1.000
6000	110.6	110.7	110.7	0.999
7000	129.0	129.2	129.2	0.998
8000	147.4	147.7	147.7	0.998
9000	165.9	166.2	166.2	0.998
10000	184.3	184.8	184.8	0.997
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.999**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	354	0.3	1.4	0.8
30	330	30	330	0.2	0.1	0.1
60	300	61	301	-0.7	-0.9	0.8
90	270	91	271	-1.1	-1.2	1.1
120	240	122	243	-1.7	-2.6	2.2
150	210	153	213	-2.5	-2.9	2.7
180	180	183	183	-2.6	-2.6	2.6
210	150	213	152	-2.6	-1.7	2.1
240	120	243	122	-2.8	-2.0	2.4
270	90	272	91	-2.3	-1.1	1.7
300	60	301	62	-0.8	-1.7	1.2
330	30	331	30	-0.5	-0.3	0.4
355	0	354	0	1.3	0.3	0.8
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.5**

Comments:

METEOROLOGICAL SYSTEMS CHECK

Meteorological System Checklist

Date:	April 10, 2018		
Technician:	Chris Wesson		
Reviewer:	Rob Fisher		
Station:	PRAMP 986b		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43172VC	61012322
Barometric Pressure Sensor:	Met One	090D	3845
Relative Humidity Sensor:	RM Young	43172VC	61012322
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	March 6, 2018		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 160459244 expires May 18, 2018		
Reference Temperature (^{o}C):	3.1		
Station - Ambient Temperature (^{o}C):	3.9		
Temperature Difference (^{o}C):	-0.8		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	March 6, 2018		
Reference Barometer ID:	Brunton 05490 expires December 11, 2018		
Reference Pressure - Units/Reading:	mbar	942	
Station Pressure - Units/Reading:	mbar	940	
Pressure Tolerance +/- 15% of error:	801 - 1083	0.21%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	March 6, 2018		
Reference Hygrometer ID:	F.S. id# 160459244 expires May 18, 2018		
Reference Hygrometer % RH- Reading:	27.00		
Station Hygrometer % RH- Reading:	31.00		
RH Tolerance +/- 15% of error:	22.95 - 31.05	-4.0%	

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:

Make/Model	API 700
Serial Number	829
Last Verification Date	January 2017
NO Cylinder S/N	EY0000715
NO [PPM]	50.7 NOx [PPM] 50.8
Expiry Date	May 2020

Flow Measurement Device:

Make/Model	Mesa 530+
Serial Number	H-156312 L-156151
Temperature (°C)	N/A
Barometric Pressure	N/A

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	1.0000
m (Slope)=	0.9949	0.90-1.10	0.9912
b (Intercept % of FS)=	-0.0030	± 3% F.S.	-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	0%	± 10%
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

Audit Calibrator

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

NO_X Analyzer

Make/Model	Teco 42i
Serial/AMU Number	AMU 1868
Last Calibration Date	January 31, 2018
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

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-560A

Company: Maxxam **Operator:** Chris W

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

Dilution Flow (sccm)

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

Gas Flow (sccm)

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

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

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

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	0.9996	**0.90-1.10**	m (Slope)=	0.9956
b (Intercept % of FS)=	-0.0599	**± 3% F.S.**	b (Intercept % of FS)=	-0.0005

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
						NO_2	% Diff. Limit
4988	0.000	0.000	0.788	-0.001	0.787	-1%	± 10%
4988	0.350	0.519	0.269	0.512	0.780	-1%	± 10%
4988	0.160	0.231	0.557	0.229	0.786	0%	± 10%
4988	0.070	0.099	0.689	0.097	0.787	-1%	± 10%
					Absolute Average Percent Difference	1%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9885	**0.90-1.10**
b (Intercept % of FS)=	-0.0567	**± 3% F.S.**

AENV Standards		**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	March 14, 2018
Cylinder Conc. (ppm)	49.99	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	November 2020

COMMENTS: Cylinder contains 47.9 ppm SO2.

Auditor: Al Clark Date: March 15, 2018

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-486CGA

Company: Maxxam **Operator's Name:** Mike

Cylinder #: LL108015 Concentration PPM: 47.9 Tolerance(%) 2 Certified By: Praxair

Expiry Date: October 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 13, 2017
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625
Expiry Date: January 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 / L-132702
Temp.°C: 23.4 C
B.P. 707 mmHg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623

Instrument Settings: Zero: 10.0 Span: 1.006 Range: 1.0

Last Calibration: Date: Dec12/17 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
5000	0.0	0.000			
4989	79.5	0.760	0.01594	62.755	47.7
4995	39.6	0.374	0.00793	126.136	47.2
4992	19.6	0.183	0.00393	254.694	46.6
				Average Cylinder Concentration:	**47.2**

Previous Stated Concentration PPM: 47.9

Percent variance from Stated: **2**

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

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

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

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-137CGA

Company: Maxxam **Operator's Name:** Raja Abid Ashraf

Cylinder #: LL119432 Concentration PPM: 10.3 Tolerance(%) 2 Certified By: Praxair

Expiry Date: May 16, 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: July 27, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: Janaury 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 22.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 21.9 Span: 1.069 Range: 0.1
Last Calibration: Date: July 27, 2017 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000			
5117	38.9	0.0595	0.00760	131.542	7.8
5103	18.4		0.00361	277.337	0.0
5097	9.4		0.00184	542.234	0.0
				Average Cylinder Concentration:	**2.6**

Previous Stated Concentration PPM: 10.3

Percent variance from Stated: **75**

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

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ] Do not use.

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

Auditor: Al Clark Date: July 27, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-213CGA

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

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

Expiry Date: August 2020

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

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

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

Previous Stated Concentration PPM: 9.8

Percent variance from Stated: **3**

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

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

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

Auditor: Al Clark Date: September 22, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-484CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL107207 Conc CH4 (PPM) 600/207 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

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

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

	CH4	C3H8
Previous Stated Concentration PPM:	600	207
Percent variance from Stated:	**0**	**2**

Cylinder gas tolerances based on CH4 only

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

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

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

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

APPENDIX III
MAXIMUM INSTANTANEOUS DATA

Maxxam
A Bureau Veritas Group Company

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)

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

MONTHLY SUMMARY

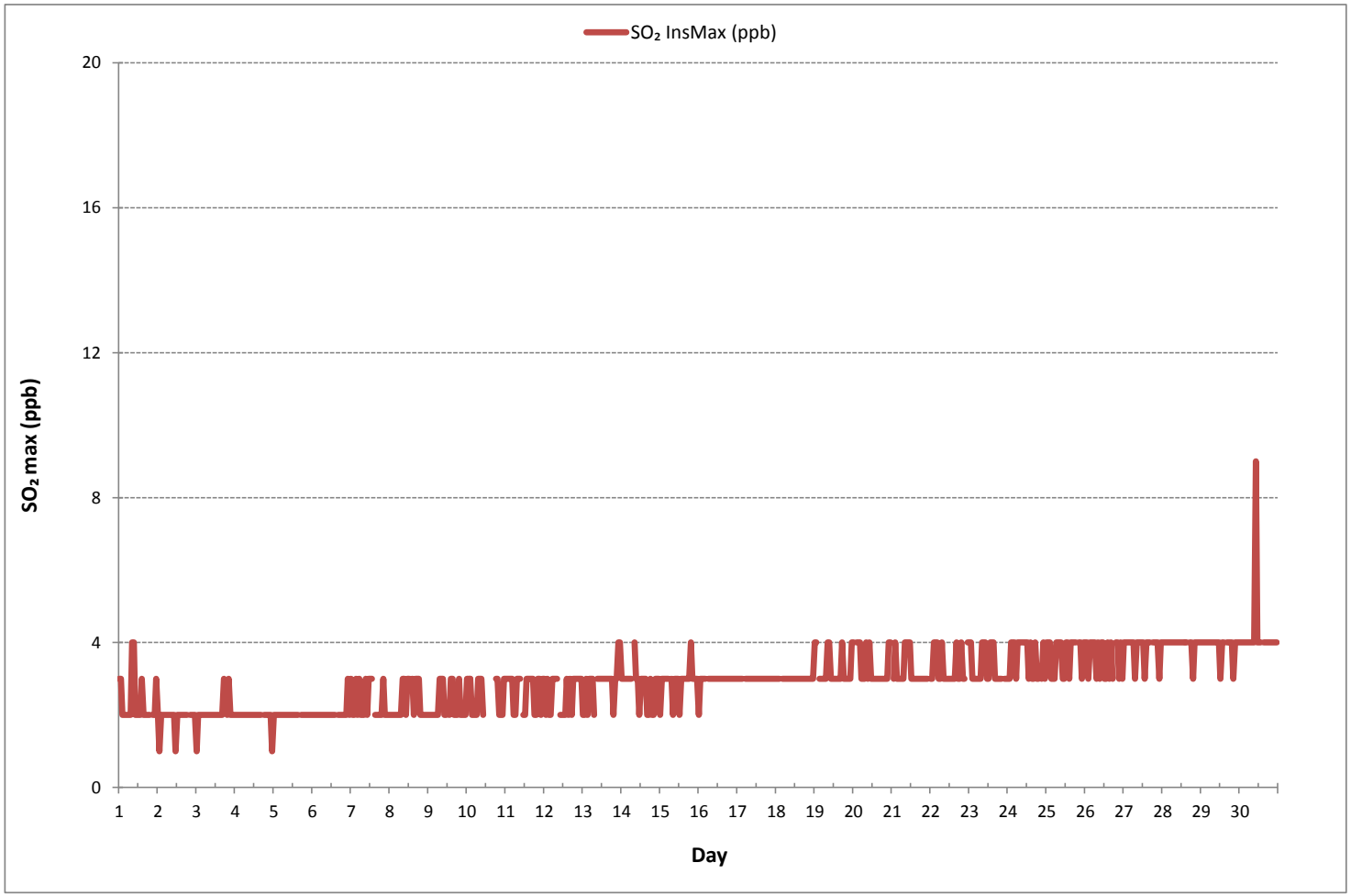
NUMBER OF NON-ZERO READINGS: 684

MAXIMUM INSTANTANEOUS VALUE: 9 ppb @ HOUR 10 ON DAY 30

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 1

OPERATIONAL TIME: 720 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	0.22	0.27	0.22	0.24	0.22	0.29	0.50	0.45	0.43	0.27	0.22	0.19	0.19	0.16	0.19	0.19	0.16	0.21	0.19	0.19	S	0.32	0.19	0.19	0.16	0.50	0.25	24
2	0.14	0.16	0.19	0.16	0.14	0.16	0.16	0.19	0.16	0.16	0.22	0.19	0.16	0.22	0.19	0.14	0.16	0.19	0.17	S	0.29	0.22	0.16	0.37	0.14	0.37	0.19	24
3	0.19	0.25	0.24	0.19	0.19	0.19	0.19	0.19	0.22	0.22	0.17	0.19	0.16	0.19	0.17	0.16	0.22	0.19	S	0.37	0.22	0.16	0.19	0.19	0.16	0.37	0.20	24
4	0.19	0.16	0.16	0.17	0.19	0.19	0.16	0.19	0.19	0.19	0.19	0.19	0.22	0.19	0.19	0.19	0.22	S	0.37	0.19	0.19	0.19	0.19	0.19	0.16	0.37	0.20	24
5	0.19	0.19	0.22	0.19	0.19	0.22	0.22	0.22	0.24	0.22	0.22	0.24	0.22	0.22	0.19	0.22	S	0.35	0.19	0.24	0.22	0.22	0.22	0.22	0.19	0.35	0.22	24
6	0.22	0.22	0.21	0.27	0.24	0.27	0.37	0.32	0.29	0.22	0.22	0.19	0.22	0.19	0.16	S	0.42	0.19	0.19	0.19	0.22	0.19	0.22	0.16	0.16	0.42	0.23	24
7	0.16	0.22	0.19	0.22	0.19	0.19	0.19	0.24	0.19	0.19	0.19	0.16	0.19	0.22	S	0.30	0.17	0.14	0.14	0.16	0.19	0.19	0.19	0.16	0.14	0.30	0.19	24
8	0.19	0.19	0.16	0.16	0.16	0.14	0.16	0.22	0.16	0.17	0.19	0.19	0.19	S	0.32	0.19	0.22	0.22	0.16	0.18	0.16	0.17	0.22	0.19	0.14	0.32	0.19	24
9	0.22	0.16	0.19	0.19	0.19	0.19	0.19	0.24	0.19	0.22	0.16	0.14	S	0.27	0.22	0.19	0.19	0.17	0.19	0.22	0.19	0.16	0.19	0.19	0.14	0.27	0.19	24
10	0.22	0.19	0.19	0.19	0.16	0.19	0.16	0.16	0.16	C	C	C	C	C	C	0.82	**0.95**	0.42	0.40	0.43	0.40	0.40	0.40	0.40	0.16	**0.95**	0.35	24
11	0.37	0.48	0.45	0.46	0.37	0.37	0.40	0.37	0.43	0.37	S	0.53	0.37	0.35	0.37	0.38	0.40	0.37	0.42	0.42	0.40	0.35	0.37	0.35	0.35	0.53	0.40	24
12	0.40	0.37	0.38	0.40	0.40	0.40	0.35	0.35	0.35	S	0.45	0.35	0.37	0.32	0.32	0.34	0.37	0.35	0.35	0.35	0.32	0.35	0.35	0.37	0.32	0.45	0.36	24
13	0.37	0.37	0.38	0.37	0.34	0.40	0.37	0.38	S	0.45	0.40	0.37	0.35	0.35	0.35	0.37	0.34	0.34	0.35	0.32	0.32	0.33	0.32	0.37	0.32	0.45	0.36	24
14	0.33	0.37	0.35	0.35	0.32	0.34	0.35	S	0.40	0.37	0.35	0.35	0.32	0.35	0.35	0.30	0.32	0.29	0.35	0.34	0.32	0.35	0.35	0.32	0.29	0.40	0.34	24
15	0.32	0.34	0.32	0.35	0.35	0.35	S	0.43	0.40	0.32	0.35	0.37	0.37	0.37	0.37	0.40	0.37	0.40	0.40	0.35	0.35	0.34	0.35	0.37	0.32	0.43	0.36	24
16	0.34	0.38	0.35	0.32	0.37	S	0.43	0.37	0.35	0.37	0.37	0.38	0.32	0.34	0.34	0.32	0.32	0.32	0.29	0.34	0.34	0.32	0.32	0.32	0.29	0.43	0.34	24
17	0.29	0.29	0.27	0.30	S	0.37	0.32	0.35	0.33	0.37	0.35	0.43	0.35	0.37	0.35	0.35	0.40	0.35	0.35	0.35	0.35	0.35	0.37	0.32	0.27	0.43	0.34	24
18	0.32	0.32	0.32	S	0.40	0.35	0.32	0.38	0.40	0.34	0.33	0.32	0.32	0.32	0.27	0.29	0.29	0.30	0.32	0.29	0.29	0.32	0.32	0.29	0.27	0.40	0.32	24
19	0.35	0.32	S	0.43	0.37	0.35	0.37	0.38	0.35	0.32	0.33	0.35	0.30	0.30	0.29	0.30	0.29	0.29	0.30	0.30	0.27	0.32	0.29	0.30	0.27	0.43	0.32	24
20	0.29	S	0.38	0.30	0.35	0.33	0.30	0.30	0.32	0.27	0.29	0.32	0.32	0.29	0.27	0.27	0.27	0.29	0.27	0.29	0.27	0.29	0.27	0.27	0.27	0.38	0.30	24
21	S	0.45	0.32	0.33	0.40	0.30	0.37	0.32	0.38	0.29	0.27	0.40	0.35	0.33	0.30	0.24	0.27	0.27	0.27	0.29	0.27	0.27	0.27	S	0.24	0.45	0.32	24
22	0.42	0.37	0.30	0.35	0.29	0.27	0.32	0.34	0.32	0.32	0.27	0.30	0.27	0.27	0.30	0.27	0.27	0.25	0.32	0.43	0.30	0.37	S	0.37	0.25	0.43	0.32	24
23	0.35	0.35	0.35	0.32	0.34	0.37	0.40	0.37	0.35	0.35	0.34	0.38	0.35	0.30	0.30	0.30	0.27	0.30	0.30	0.29	0.32	S	0.38	0.35	0.27	0.40	0.34	24
24	0.33	0.30	0.30	0.29	0.30	0.32	0.30	0.29	0.32	0.32	0.32	0.32	0.29	0.32	0.32	0.27	0.30	0.27	0.29	0.32	S	0.40	0.40	0.40	0.27	0.40	0.32	24
25	0.33	0.35	0.29	0.35	0.35	0.30	0.32	0.35	0.30	0.29	0.29	0.27	0.27	0.35	0.30	0.29	0.29	0.27	0.27	S	0.38	0.30	0.29	0.29	0.27	0.38	0.31	24
26	0.32	0.30	0.38	0.42	0.40	0.48	0.40	0.43	0.35	0.32	0.32	0.33	0.32	0.30	0.30	0.30	0.29	0.27	S	0.40	0.33	0.45	0.35	0.29	0.27	0.48	0.35	24
27	0.30	0.34	0.34	0.35	0.30	0.30	0.27	0.30	0.25	0.27	0.29	0.27	0.29	0.26	0.29	0.29	0.27	S	0.32	0.29	0.32	0.32	0.32	0.24	0.24	0.35	0.30	24
28	0.29	0.24	0.24	0.27	0.22	0.22	0.27	0.24	0.27	0.27	0.27	0.29	0.27	0.33	0.29	0.27	S	0.30	0.24	0.27	0.24	0.24	0.32	0.29	0.22	0.33	0.27	24
29	0.27	0.29	0.32	0.37	0.29	0.29	0.30	0.27	0.26	0.29	0.29	0.29	0.27	0.22	0.24	S	0.34	0.27	0.24	0.22	0.24	0.24	0.25	0.24	0.22	0.37	0.27	24
30	0.32	0.27	0.24	0.29	0.24	0.24	0.27	0.27	0.27	0.24	0.24	C1	C1	0.42	S	0.40	0.27	0.27	0.24	0.24	0.27	0.27	0.27	0.32	0.24	0.42	0.28	22
HOURLY MAX	0.42	0.48	0.45	0.46	0.40	0.48	0.50	0.45	0.43	0.45	0.45	0.53	0.37	0.42	0.37	0.82	0.95	0.42	0.42	0.43	0.40	0.45	0.40	0.40				
HOURLY AVG	0.28	0.29	0.28	0.30	0.29	0.29	0.30	0.31	0.30	0.29	0.28	0.30	0.28	0.29	0.28	0.30	0.31	0.28	0.28	0.30	0.29	0.29	0.29	0.29				

STATUS FLAG CODES

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

MONTHLY SUMMARY

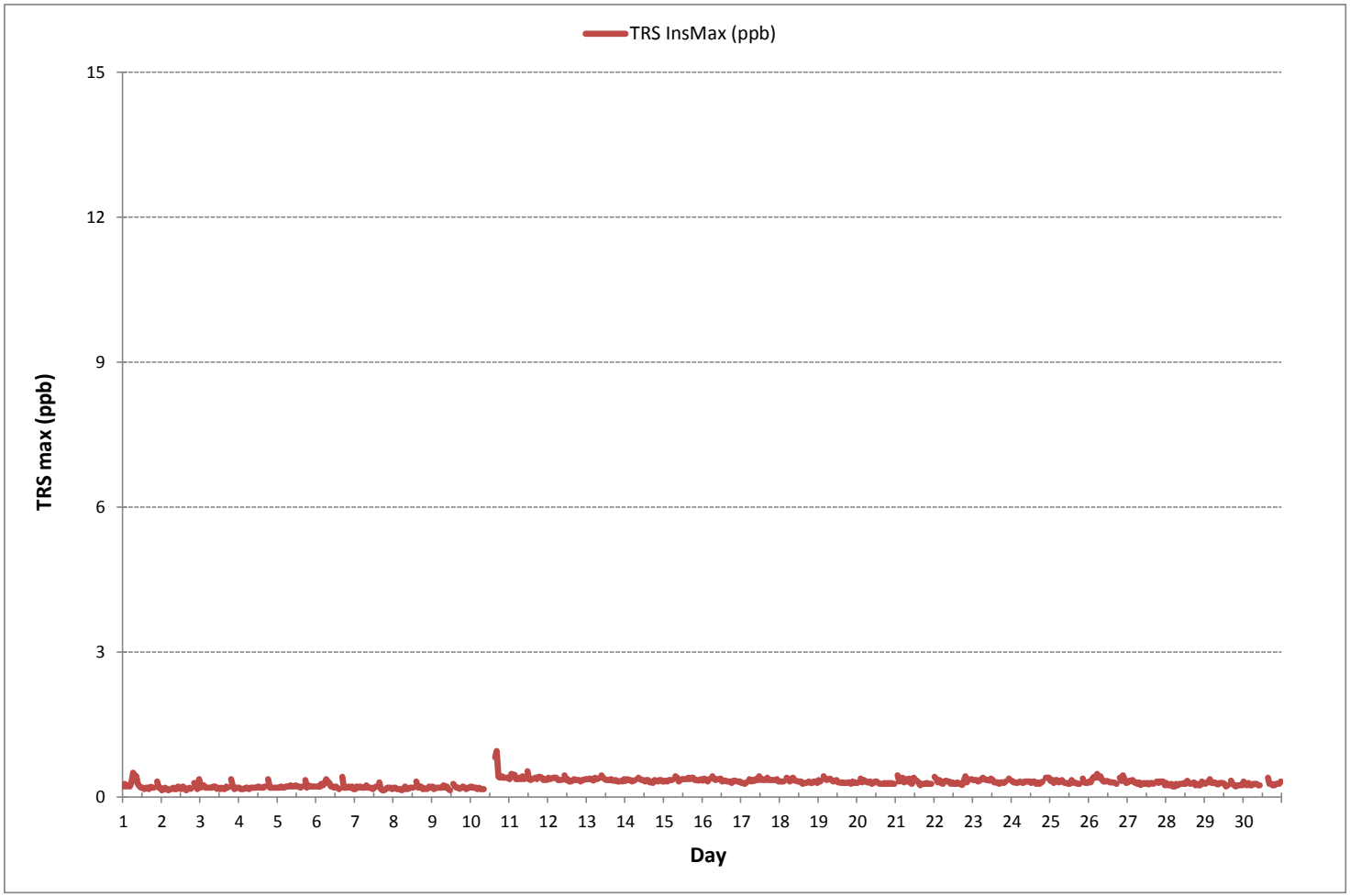
NUMBER OF NON-ZERO READINGS: 682

MAXIMUM INSTANTANEOUS VALUE: 0.95 ppb @ HOUR 16 ON DAY 10

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 6 hrs
STANDARD DEVIATION: 0.08

OPERATIONAL TIME: 718 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	2.03	2.04	2.04	2.06	2.11	2.22	2.45	2.56	2.53	2.51	2.34	2.25	2.13	2.20	2.26	2.18	2.37	2.56	2.57	3.71	S	2.07	1.97	1.97	1.97	3.71	2.31	24
2	1.98	2.50	1.99	2.01	2.01	2.73	2.72	2.04	2.04	1.99	2.02	2.20	2.00	2.21	2.25	2.12	2.12	2.22	2.00	S	1.96	1.96	2.37	1.99	1.96	2.73	2.15	24
3	2.86	1.99	4.35	2.92	2.00	2.15	2.71	4.09	1.98	1.98	2.06	2.26	2.19	2.13	2.20	2.22	2.20	2.22	S	2.61	1.97	1.99	1.98	2.77	1.97	4.35	2.43	24
4	1.97	1.98	2.23	2.11	2.04	2.07	1.97	2.08	2.01	2.08	2.13	2.16	2.28	2.25	2.23	2.34	2.21	S	2.09	5.10	2.09	1.98	4.18	1.98	1.97	5.10	2.33	24
5	1.98	1.98	1.98	1.99	1.99	1.98	2.54	2.00	1.98	2.19	2.12	2.15	2.27	2.43	2.27	2.08	S	2.09	2.04	1.97	1.98	1.98	2.00	1.98	1.97	2.54	2.09	24
6	1.99	1.99	1.98	1.99	1.99	2.00	2.01	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.97	S	1.97	1.94	1.97	1.98	1.96	1.98	2.01	2.00	1.94	2.01	1.98	24
7	2.00	1.97	2.00	2.00	1.99	1.98	2.00	2.00	2.00	2.00	1.98	1.98	1.98	1.97	S	1.95	1.97	1.95	1.96	1.97	1.96	1.98	1.97	1.99	1.95	2.00	1.98	24
8	2.00	1.99	1.98	1.99	2.00	1.99	2.03	2.04	2.04	2.07	2.03	2.29	2.15	S	2.01	2.22	2.03	1.99	1.99	2.00	2.05	2.02	2.02	2.04	1.98	2.29	2.04	24
9	2.06	2.07	2.08	2.08	2.07	2.08	2.06	2.06	2.03	2.04	2.02	2.01	S	2.04	2.15	2.12	2.00	2.79	2.56	3.10	2.05	1.99	2.50	2.41	1.99	3.10	2.19	24
10	2.02	2.02	1.97	1.97	1.97	1.97	1.97	1.95	1.95	C	C	C	C	C	C	1.97	1.97	2.21	1.95	1.95	1.98	1.97	1.97	1.98	1.95	2.21	1.99	24
11	1.98	1.98	1.99	1.98	1.96	1.96	1.97	1.97	1.98	1.97	S	1.99	1.97	1.95	1.97	1.98	1.97	1.97	1.99	1.99	1.98	1.97	2.00	1.99	1.95	2.00	1.98	24
12	2.01	1.98	1.98	1.97	1.98	1.99	1.99	1.98	1.99	S	1.99	1.96	1.97	1.98	1.97	2.08	1.99	2.00	2.00	2.00	1.99	2.04	2.04	2.05	1.96	2.08	2.00	24
13	2.04	2.05	2.16	2.06	2.05	2.05	2.05	2.05	S	2.05	2.03	2.04	2.03	2.00	1.99	1.98	1.99	2.50	3.65	2.05	2.03	2.02	2.00	1.98	1.98	3.65	2.12	24
14	2.01	2.02	2.07	2.04	1.95	1.95	1.96	S	2.01	1.95	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.95	1.95	2.07	1.98	24
15	1.97	1.99	1.99	1.99	1.98	2.00	S	2.00	2.15	2.14	2.20	2.23	2.19	2.17	2.20	2.18	2.07	2.00	1.99	1.99	1.97	1.97	1.98	1.99	1.97	2.23	2.06	24
16	1.99	1.97	1.98	1.99	1.99	S	1.99	1.99	1.97	1.98	1.99	1.98	1.99	1.97	1.97	1.98	1.98	1.96	1.97	1.98	1.98	1.98	1.97	1.97	1.96	1.99	1.98	24
17	1.97	1.97	1.96	2.09	S	2.41	2.30	2.20	2.50	2.12	2.06	2.04	1.96	1.99	1.99	1.99	1.97	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.96	2.50	2.06	24
18	1.99	1.99	2.01	S	2.07	2.01	2.01	2.02	2.01	2.01	2.01	2.00	2.00	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.94	1.94	1.94	2.07	1.99	24
19	1.97	1.97	S	1.95	1.96	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.98	1.99	1.97	1.98	1.97	1.95	1.99	1.97	24
20	1.96	S	1.93	1.96	1.98	1.97	1.95	1.95	1.97	1.98	2.02	1.98	1.97	1.97	1.98	1.98	1.99	1.97	1.97	1.97	2.00	1.98	1.99	2.03	1.93	2.03	1.98	24
21	S	2.03	2.02	2.68	2.96	2.55	2.14	2.03	2.13	2.00	1.97	2.04	2.04	1.96	1.96	1.97	1.97	1.97	1.96	2.67	1.95	1.95	1.96	S	1.95	2.96	2.13	24
22	1.96	1.96	1.97	1.96	1.97	2.03	2.03	2.12	2.17	2.24	2.12	2.14	2.13	2.16	2.14	2.08	1.97	1.97	1.99	2.00	1.99	2.14	S	1.99	1.96	2.24	2.05	24
23	2.00	2.04	2.05	2.03	2.02	2.03	2.03	2.03	S1	S1	2.02	2.02	2.02	2.01	2.01	2.03	2.01	2.11	2.02	2.01	2.06	S	2.06	2.01	2.00	2.11	2.03	22
24	2.00	2.02	1.98	1.97	1.99	2.00	2.00	2.00	1.98	2.03	1.99	1.98	1.97	C1	C1	C1	C1	1.94	1.95	1.97	S	2.01	2.13	2.27	1.94	2.27	2.01	20
25	2.13	2.02	2.29	2.13	2.11	2.11	2.02	2.10	2.10	1.97	1.97	1.96	1.96	2.06	1.99	1.97	2.01	1.95	1.95	S	1.96	2.14	1.98	1.97	1.95	2.29	2.04	24
26	1.97	1.98	2.64	2.04	2.04	2.01	2.17	2.10	2.03	2.04	2.11	2.02	2.01	1.99	2.00	2.07	1.99	1.96	S	2.02	1.98	2.15	2.07	2.08	1.96	2.64	2.06	24
27	2.14	2.13	2.14	2.14	2.12	2.09	2.07	2.01	1.98	1.95	1.98	1.96	1.97	1.96	1.96	1.97	1.97	S	1.94	2.04	2.02	1.97	1.97	2.01	1.94	2.14	2.02	24
28	2.01	2.03	2.05	2.05	1.97	1.93	1.94	1.95	2.04	1.96	1.96	1.96	1.95	1.99	2.02	2.00	S	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.93	2.05	1.98	24
29	1.95	1.97	1.96	1.93	1.95	1.97	1.98	1.95	1.93	2.02	2.03	2.09	2.00	2.02	1.98	S	2.08	2.04	2.06	1.98	1.95	2.01	1.96	1.93	1.93	2.09	1.99	24
30	1.97	2.01	2.04	2.00	1.98	1.97	1.97	1.97	1.97	1.97	1.99	1.97	1.95	1.95	S	1.96	2.01	2.08	2.08	1.96	1.94	1.94	2.26	2.80	1.94	2.80	2.03	24
HOURLY MAX	2.86	2.50	4.35	2.92	2.96	2.73	2.72	4.09	2.53	2.51	2.34	2.29	2.28	2.43	2.27	2.34	2.37	2.79	3.65	5.10	2.09	2.15	4.18	2.80				
HOURLY AVG	2.03	2.02	2.13	2.07	2.04	2.07	2.10	2.11	2.05	2.04	2.04	2.05	2.04	2.05	2.05	2.05	2.03	2.08	2.09	2.25	1.99	2.00	2.11	2.07				

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

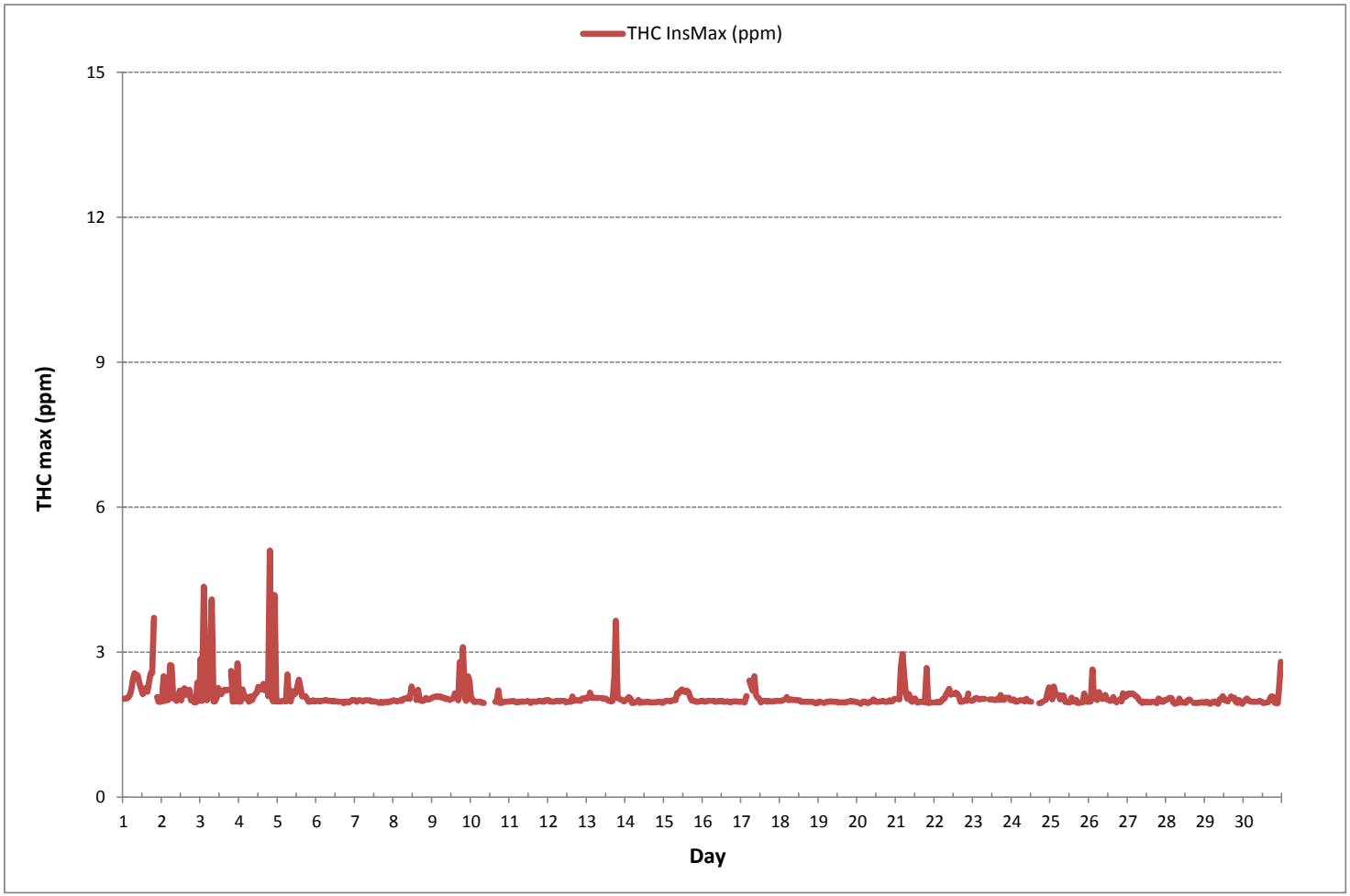
NUMBER OF NON-ZERO READINGS: 678

MAXIMUM INSTANTANEOUS VALUE: 5.10 ppm @ HOUR 19 ON DAY 4

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 6 hrs
STANDARD DEVIATION: 0.25

OPERATIONAL TIME: 714 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



METHANE MAX Instantaneous Maximum (CH_4 ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	2.04	2.05	2.05	2.07	2.12	2.24	2.46	2.53	2.48	2.52	2.35	2.26	2.15	2.21	2.27	2.19	2.38	2.57	2.58	3.73	S	2.08	1.97	1.98	1.97	3.73	2.32	24
2	1.98	2.51	2.00	2.02	2.02	2.74	2.74	2.05	2.05	2.00	2.02	2.21	2.00	2.22	2.26	2.13	2.13	2.24	2.01	S	1.97	1.96	2.38	2.00	1.96	2.74	2.16	24
3	2.87	2.00	4.37	2.93	2.01	2.16	2.73	4.11	1.99	1.99	2.07	2.27	2.20	2.14	2.21	2.24	2.22	2.24	S	2.62	1.97	1.99	1.99	2.79	1.97	4.37	**2.44**	24
4	1.98	1.99	2.25	2.12	2.04	2.08	1.98	2.09	2.02	2.08	2.14	2.17	2.29	2.25	2.24	2.35	2.22	S	2.10	**5.10**	2.10	1.99	4.19	1.99	1.98	**5.10**	2.34	24
5	1.99	1.99	1.99	2.00	2.00	1.99	2.55	2.01	1.99	2.20	2.13	2.16	2.28	2.44	2.28	2.09	S	2.10	2.05	1.98	1.98	1.98	2.00	1.98	1.98	2.55	2.09	24
6	1.99	2.00	1.99	1.99	1.99	2.01	2.01	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.97	S	1.98	1.94	1.97	1.98	1.96	1.98	2.01	2.00	1.94	2.01	1.99	24
7	2.01	1.98	2.00	2.00	1.99	1.99	2.01	2.01	2.01	2.01	1.99	1.99	1.99	1.98	S	1.95	1.97	1.95	1.96	1.97	1.96	1.98	1.98	1.99	1.95	2.01	1.99	24
8	2.00	2.00	1.99	1.99	2.01	2.00	2.03	2.04	2.04	2.08	2.03	2.30	2.16	S	2.01	2.24	2.04	1.99	1.99	2.01	2.07	2.03	2.03	2.05	1.99	2.30	2.05	24
9	2.07	2.08	2.09	2.09	2.08	2.08	2.06	2.06	2.04	2.04	2.02	2.02	S	2.04	2.16	2.13	2.00	2.80	2.57	3.12	2.06	2.00	2.50	2.43	2.00	3.12	2.20	24
10	2.03	2.03	1.98	1.98	1.98	1.97	1.97	1.96	1.96	C	C	C	C	C	C	1.98	1.98	1.99	1.96	1.96	1.98	1.98	1.98	1.98	1.96	2.03	1.98	24
11	1.98	1.99	2.00	1.99	1.96	1.97	1.97	1.98	1.98	1.98	S	1.99	1.97	1.95	1.97	1.99	1.98	1.98	2.00	1.99	1.98	1.97	2.00	2.00	1.95	2.00	1.98	24
12	2.01	1.99	1.99	1.98	1.99	1.99	1.99	1.99	2.00	S	1.99	1.96	1.98	1.98	1.98	2.09	2.00	2.01	2.01	2.01	2.00	2.04	2.05	2.06	1.96	2.09	2.00	24
13	2.05	2.06	2.17	2.06	2.06	2.06	2.06	2.06	S	2.06	2.04	2.05	2.04	2.01	2.00	1.99	2.00	2.51	3.67	2.06	2.04	2.02	2.01	1.99	1.99	3.67	2.13	24
14	2.01	2.03	2.07	2.04	1.96	1.96	1.96	S	2.02	1.95	1.97	1.96	1.96	1.98	1.98	1.96	1.96	1.97	1.96	1.97	1.98	1.98	1.98	1.96	1.95	2.07	1.98	24
15	1.97	1.99	1.99	2.00	1.99	2.01	S	2.01	2.16	2.15	2.21	2.24	2.21	2.18	2.21	2.19	2.08	2.01	2.00	1.99	1.98	1.98	1.98	2.00	1.97	2.24	2.07	24
16	2.00	1.97	1.99	2.00	2.00	S	2.00	2.00	1.98	1.99	2.00	1.99	1.99	1.98	1.98	1.99	1.99	1.97	1.98	1.98	1.98	1.98	1.97	1.98	1.97	2.00	1.99	24
17	1.98	1.98	1.96	2.10	S	2.43	2.32	2.21	2.50	2.14	2.07	2.05	1.96	2.00	2.00	2.00	1.98	1.99	1.99	1.98	1.98	1.99	1.99	2.00	1.96	2.50	2.07	24
18	1.99	1.99	2.01	S	2.07	2.02	2.02	2.03	2.02	2.02	2.01	2.01	2.01	1.98	1.98	1.98	1.97	1.98	1.98	1.98	1.97	1.96	1.95	1.94	1.94	2.07	1.99	24
19	1.97	1.98	S	1.95	1.96	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.97	1.97	1.99	2.00	1.97	1.99	1.98	1.95	2.00	1.97	24
20	1.96	S	1.93	1.96	1.99	1.97	1.96	1.95	1.98	1.99	2.03	1.98	1.98	1.98	1.98	1.98	1.99	1.97	1.98	1.97	2.01	1.99	2.00	2.04	1.93	2.04	1.98	24
21	S	2.03	2.02	2.69	2.98	2.57	2.16	2.04	2.14	2.00	1.98	2.05	2.05	1.96	1.96	1.97	1.96	1.97	1.97	2.69	1.96	1.96	1.96	S	1.96	2.98	2.14	24
22	1.96	1.96	1.98	1.96	1.98	2.03	2.03	2.13	2.18	2.25	2.13	2.15	2.14	2.17	2.16	2.09	1.97	1.98	1.99	2.01	2.00	2.15	S	1.99	1.96	2.25	2.06	24
23	2.00	2.05	2.05	2.03	2.03	2.03	2.04	2.04	S1	S1	2.03	2.03	2.03	2.02	2.02	2.04	2.02	2.12	2.03	2.02	2.07	S	2.06	2.02	2.00	2.12	2.04	22
24	2.01	2.02	1.98	1.98	2.00	2.00	2.01	2.00	1.99	2.04	2.00	1.99	1.97	C1	C1	C1	C1	1.94	1.95	1.97	S	2.02	2.14	2.28	1.94	2.28	2.02	20
25	2.14	2.03	2.30	2.14	2.12	2.12	2.02	2.11	2.11	1.98	1.97	1.96	1.96	2.07	2.00	1.98	2.01	1.95	1.96	S	1.96	2.15	1.99	1.98	1.95	2.30	2.04	24
26	1.98	1.98	2.65	2.04	2.05	2.02	2.18	2.11	2.04	2.05	2.13	2.03	2.02	1.99	2.01	2.08	2.00	1.97	S	2.03	1.99	2.16	2.08	2.09	1.97	2.65	2.07	24
27	2.15	2.14	2.15	2.15	2.14	2.10	2.07	2.02	1.99	1.95	1.99	1.96	1.97	1.96	1.96	1.97	1.98	S	1.94	2.05	2.03	1.98	1.97	2.02	1.94	2.15	2.03	24
28	2.02	2.03	2.06	2.06	1.98	1.94	1.94	1.95	2.04	1.96	1.97	1.96	1.96	2.00	2.03	2.00	S	1.95	1.96	1.95	1.95	1.96	1.96	1.96	1.94	2.06	1.98	24
29	1.95	1.97	1.96	1.94	1.96	1.98	1.98	1.96	1.94	2.02	2.03	2.10	2.01	2.02	1.99	S	2.09	2.04	2.07	1.99	1.96	2.02	1.96	1.93	1.93	2.10	1.99	24
30	1.98	2.02	2.04	2.01	1.99	1.98	1.98	1.97	1.98	1.97	2.00	1.98	1.96	1.96	S	1.96	2.02	2.09	2.09	1.96	1.94	1.94	2.27	2.81	1.94	2.81	2.04	24
HOURLY MAX	2.87	2.51	4.37	2.93	2.98	2.74	2.74	4.11	2.50	2.52	2.35	2.30	2.29	2.44	2.28	2.35	2.38	2.80	3.67	5.10	2.10	2.16	4.19	2.81				
HOURLY AVG	2.04	2.03	2.14	2.08	2.05	2.08	2.11	2.12	2.06	2.05	2.05	2.06	2.04	2.05	2.06	2.06	2.03	2.08	2.10	2.25	1.99	2.01	2.12	2.08				

STATUS FLAG CODES

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

MONTHLY SUMMARY

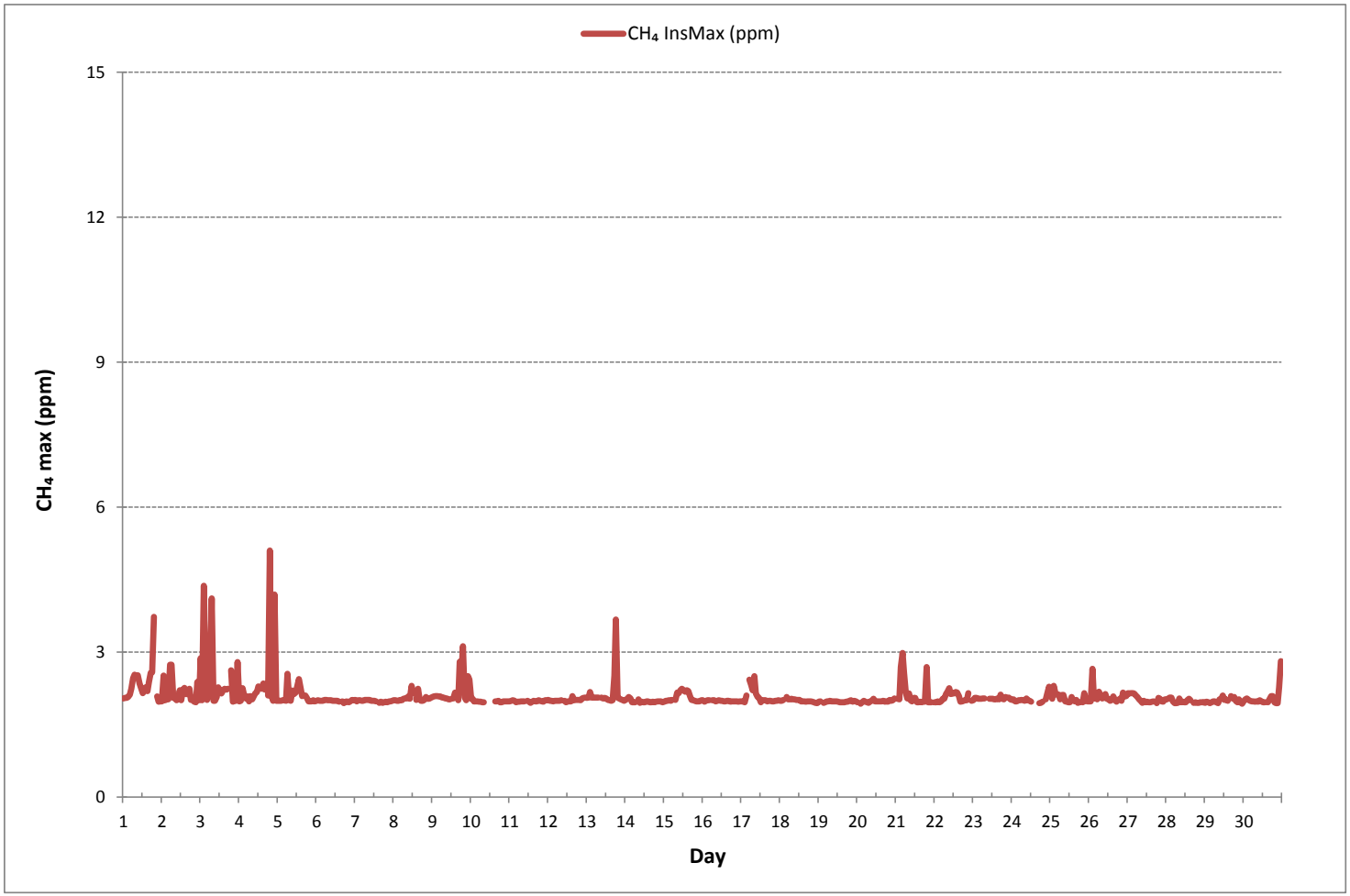
NUMBER OF NON-ZERO READINGS: 678

MAXIMUM INSTANTANEOUS VALUE: 5.10 ppm @ HOUR 19 ON DAY 4

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 6 hrs
STANDARD DEVIATION: 0.26

OPERATIONAL TIME: 714 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	0.08	0.08	0.07	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	0.08	0.01	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
5	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
6	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
7	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	S	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
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	C	0.00	0.00	**0.23**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.23**	0.01	24
11	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
12	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
13	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
14	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
15	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
16	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
17	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	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
19	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
20	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
21	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	0.02	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.02	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.02	0.00	0.02	0.00	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S1	S1	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	22
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C1	C1	C1	C1	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	20
25	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.10	0.00	24
26	0.00	0.00	0.13	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.01	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	0.01	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	0.01	0.00	24
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.10	0.01	0.13	0.01	0.00	0.01	0.08	0.08	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.02				
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

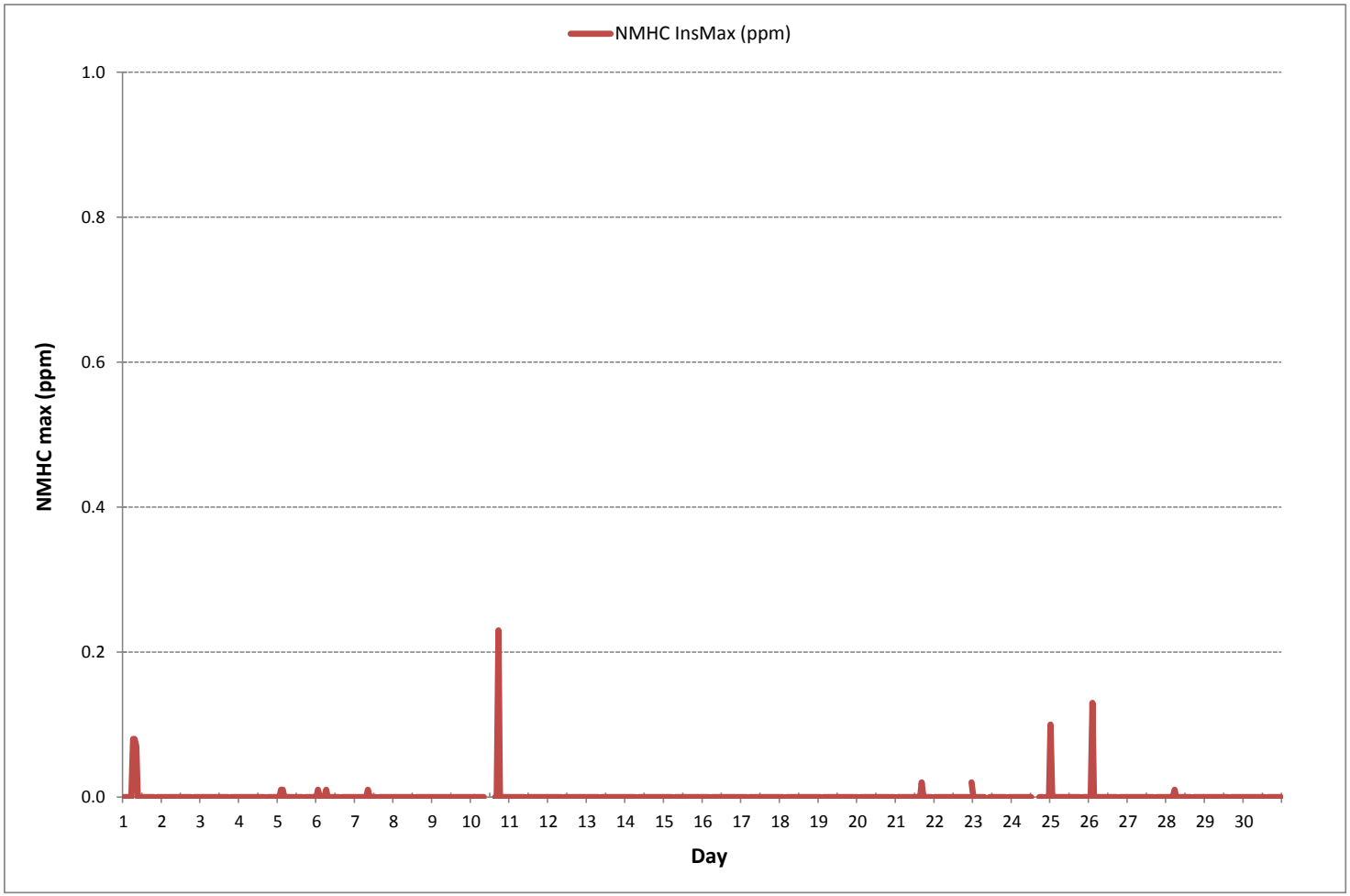
NUMBER OF NON-ZERO READINGS: 14

MAXIMUM INSTANTANEOUS VALUE: 0.23 ppm @ HOUR 17 ON DAY 10

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 6 hrs
STANDARD DEVIATION: 0.01

OPERATIONAL TIME: 714 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	5.9	4.6	4.4	4.5	4.5	4.6	4.6	4.9	4.3	12.1	15.3	17.8	23.3	20.7	24.8	21.0	19.8	17.1	16.8	9.0	4.3	6.8	7.2	3.3	3.3	24.8	10.9	24
2	4.2	11.0	4.0	3.4	5.0	9.3	10.9	14.0	19.0	15.2	16.1	20.4	26.2	31.4	27.7	25.5	21.5	22.0	19.2	10.6	4.8	5.6	5.6	3.8	3.4	31.4	14.0	24
3	3.8	3.9	5.3	6.3	8.0	8.5	8.4	14.8	17.6	20.7	19.2	19.7	23.2	25.9	20.8	18.6	23.4	23.0	16.7	12.2	8.6	14.3	10.2	14.5	3.8	25.9	14.5	24
4	14.3	12.1	9.8	12.5	5.7	6.7	8.3	23.5	22.9	21.8	29.7	36.8	38.8	37.8	32.7	36.5	**C**	**C**	18.6	7.3	5.0	3.8	10.7	7.8	3.8	38.8	18.3	24
5	3.8	2.3	3.2	2.7	11.2	22.2	13.2	23.7	25.3	20.1	24.1	20.7	21.9	24.7	24.4	21.6	17.7	19.2	13.5	19.0	20.2	11.4	11.7	14.7	2.3	25.3	16.4	24
6	17.1	15.4	13.0	10.9	12.4	17.4	16.1	12.2	14.1	24.8	27.6	26.9	26.1	24.7	26.9	25.4	23.6	26.9	23.3	18.1	18.2	14.7	14.8	15.1	10.9	27.6	19.4	24
7	13.2	11.4	12.4	12.2	15.9	17.8	13.8	15.7	14.5	27.9	28.9	32.6	30.4	30.0	32.3	32.2	32.3	35.3	30.0	21.1	17.2	18.2	16.2	14.1	11.4	35.3	21.9	24
8	11.9	11.3	11.3	8.6	11.6	9.9	9.6	8.8	6.2	13.7	19.0	12.9	12.8	17.2	20.1	15.8	9.9	13.1	12.6	14.7	6.9	5.0	5.5	5.4	5.0	20.1	11.4	24
9	5.4	5.8	6.7	9.4	7.8	7.4	5.9	8.3	7.8	14.2	17.6	16.5	14.8	13.6	17.0	15.2	13.9	9.1	8.5	6.8	3.5	6.7	9.3	9.7	3.5	17.6	10.0	24
10	12.9	21.4	20.1	18.5	23.3	21.7	19.7	32.7	34.4	26.5	30.5	33.2	33.6	26.7	28.4	31.6	30.7	24.7	27.4	29.6	23.7	23.4	23.8	30.9	12.9	34.4	26.2	24
11	22.5	20.3	16.0	20.7	19.6	18.9	14.3	16.1	17.1	16.2	17.6	16.1	17.4	21.9	23.7	21.0	18.1	17.0	16.7	18.7	18.3	8.4	9.7	9.3	8.4	23.7	17.3	24
12	9.9	16.2	15.3	18.4	19.1	18.9	16.9	15.7	20.3	16.3	19.8	15.0	16.5	13.0	8.3	23.2	18.6	17.6	21.7	19.9	13.1	13.3	11.5	11.9	8.3	23.2	16.3	24
13	20.3	14.1	11.5	9.7	8.5	10.7	13.5	17.7	22.2	20.8	23.5	26.8	25.8	26.0	24.0	21.1	18.4	12.0	7.2	14.4	21.3	34.7	33.0	26.5	7.2	34.7	19.3	24
14	19.7	17.3	16.8	21.9	20.0	20.4	26.6	21.7	27.9	33.6	32.6	41.2	36.7	36.4	35.7	34.3	29.8	28.6	21.3	18.2	12.9	13.4	12.2	13.9	12.2	41.2	24.7	24
15	15.6	10.0	7.5	9.6	3.3	2.9	3.0	18.3	17.7	19.2	23.4	26.3	28.1	28.7	32.1	32.9	31.3	30.9	31.7	27.1	33.1	31.3	25.2	21.7	2.9	33.1	21.3	24
16	26.6	27.8	23.9	23.0	23.8	18.8	23.5	22.5	19.5	27.0	26.6	30.2	31.2	29.0	29.8	32.4	26.2	23.7	24.2	28.9	27.1	15.7	16.9	16.9	15.7	32.4	24.8	24
17	14.2	15.4	13.3	14.6	13.5	14.7	14.0	15.4	13.2	20.0	18.8	17.7	16.1	18.0	25.4	24.3	24.1	25.5	22.5	23.2	16.4	13.3	12.6	21.6	12.6	25.5	17.8	24
18	16.9	10.6	5.8	4.6	6.5	6.0	7.2	9.3	14.0	15.1	20.9	27.4	28.3	31.6	33.6	26.9	26.4	31.3	27.8	20.4	13.2	14.0	17.2	15.8	4.6	33.6	18.0	24
19	15.6	19.7	14.2	18.4	22.2	19.6	25.3	34.3	32.0	33.6	34.5	35.0	32.8	42.5	37.2	36.1	28.0	28.6	24.8	23.1	24.7	24.2	20.8	14.7	14.2	42.5	26.7	24
20	22.7	28.4	27.7	25.0	21.0	25.3	23.8	22.4	27.1	35.4	32.2	28.4	33.6	37.4	31.9	28.0	26.5	19.7	14.2	9.2	8.6	9.4	8.9	7.7	7.7	37.4	23.1	24
21	8.4	8.8	9.1	8.8	6.9	5.9	4.7	3.8	6.2	14.1	14.5	18.7	16.9	18.7	20.8	30.2	27.9	22.5	24.5	13.5	17.5	19.7	21.4	22.5	3.8	30.2	15.3	24
22	18.1	25.2	24.6	28.3	36.6	27.6	40.7	32.7	35.1	40.8	44.6	42.6	38.5	31.1	37.1	24.8	34.3	24.0	18.4	13.1	8.9	9.0	6.1	7.7	6.1	44.6	**27.1**	24
23	10.2	7.9	7.9	8.4	7.1	8.1	11.1	16.0	18.8	18.6	22.1	23.9	28.5	27.6	32.8	36.9	33.4	22.1	25.7	21.8	12.9	11.9	11.6	12.8	7.1	36.9	18.3	24
24	15.5	17.3	22.0	25.2	30.5	19.3	23.8	28.1	28.1	23.9	26.0	28.7	31.9	33.2	29.8	33.7	29.9	30.0	26.0	22.7	13.1	18.8	16.5	18.3	13.1	33.7	24.7	24
25	12.0	6.2	5.7	3.5	7.1	4.0	4.1	10.1	12.2	12.8	20.6	30.8	34.9	37.0	38.0	33.8	33.1	38.6	30.4	20.3	13.2	13.4	13.3	16.7	3.5	38.6	18.8	24
26	12.3	7.6	4.6	3.5	5.2	7.5	3.5	10.3	13.0	16.7	18.8	17.6	14.0	17.9	20.9	19.4	21.6	18.7	13.5	10.1	6.3	5.6	6.3	7.8	3.5	21.6	11.8	24
27	8.5	7.9	9.6	9.6	8.1	10.8	11.2	12.3	16.1	19.6	19.5	19.2	23.9	28.4	30.1	24.2	27.2	26.6	24.2	21.6	8.1	6.3	8.1	8.9	6.3	30.1	16.3	24
28	10.7	9.7	10.9	10.1	9.9	9.3	11.9	14.7	20.7	15.1	16.3	19.1	20.2	28.9	25.7	29.7	26.4	28.5	27.2	32.9	35.9	32.1	27.2	32.1	9.3	35.9	21.1	24
29	33.0	37.0	31.6	23.6	21.5	15.5	14.0	17.6	18.2	13.4	20.6	21.1	16.4	15.6	18.1	17.3	18.7	22.0	18.3	18.4	13.6	9.8	9.3	6.2	6.2	37.0	18.8	24
30	6.9	6.5	9.9	10.2	12.4	11.7	14.6	21.2	24.6	28.6	29.0	32.0	37.4	29.4	27.0	22.5	29.9	24.3	46.4	**52.0**	42.5	26.5	19.0	10.3	6.5	**52.0**	24.0	24
HOURLY MAX	33.0	37.0	31.6	28.3	36.6	27.6	40.7	34.3	35.1	40.8	44.6	42.6	38.8	42.5	38.0	36.9	34.3	38.6	46.4	52.0	42.5	34.7	33.0	32.1				
HOURLY AVG	13.7	13.8	12.6	12.9	13.6	13.4	13.9	17.3	19.0	21.3	23.7	25.2	26.0	26.8	27.2	26.5	24.9	23.5	21.8	19.3	15.8	14.7	14.1	14.1				

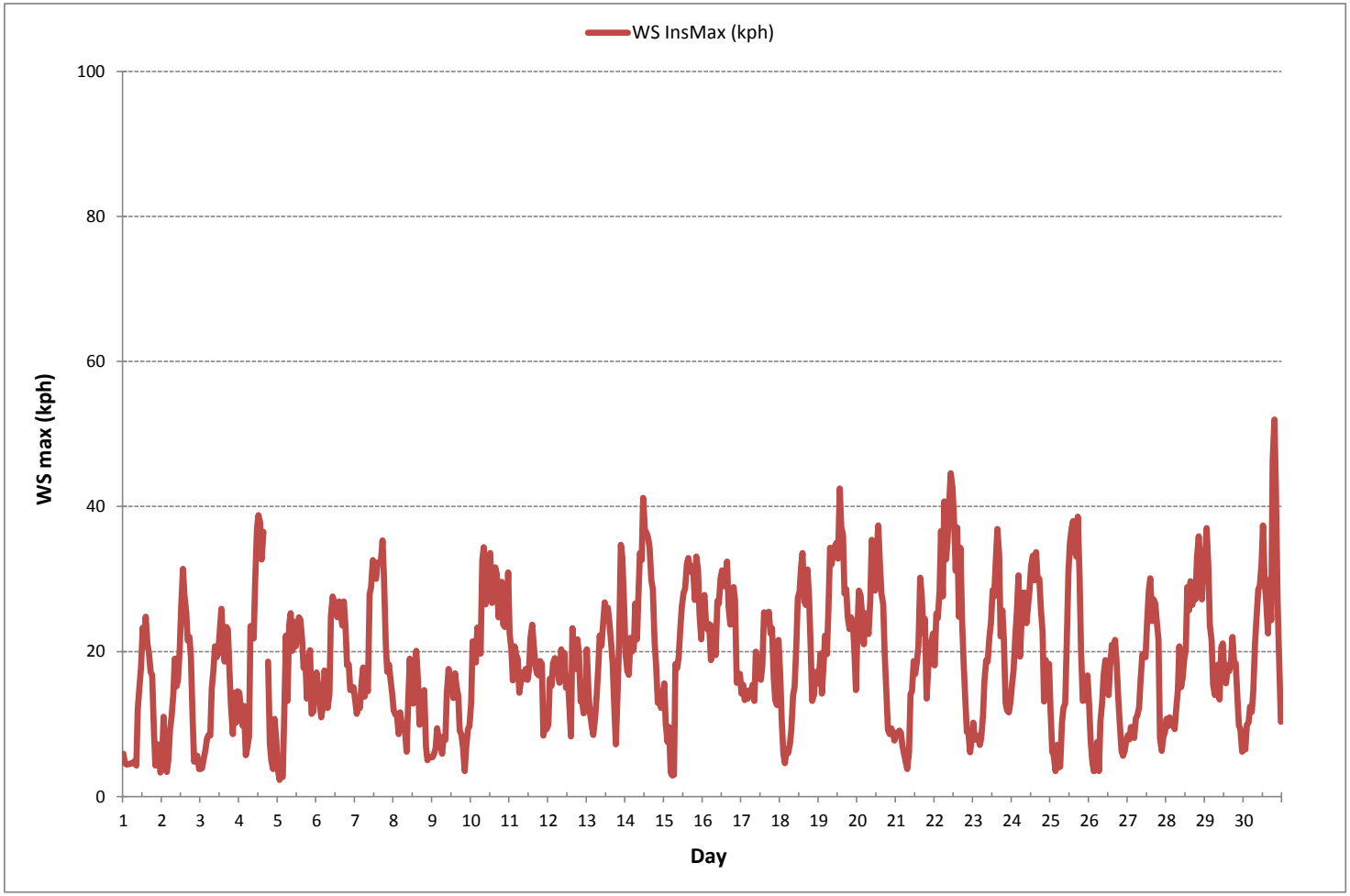
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	52.0	kph	@ HOUR	19	ON DAY	30
OPERATIONAL TIME:					720	hrs

WIND SPEED Instantaneous Maximum (WS kph)



APPENDIX IV
REPORT CERTIFICATION FORM

Report Certification Form

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

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

Cheri Sinclair

Signature of the External Person Certifying the Report

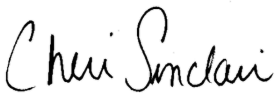
24-May-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client:	Peace River Area Monitoring Program Committee	**Project #:**	8449-2018-04-67-C
Site:	Three Creeks 986b Station	**Contact:**	Karla Reesor

Level 0 Preliminary Verification		**Date**	08-May-2018
Level 1 Primary Validation		**Date**	22-May-2018
Level 2 Final Validation		**Date**	23-May-2018
Level 3 Independent Data Review		**Date**	24-May-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.