



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

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

AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
THREE CREEKS 842B STATION

JOB #: 8449-2018-04-80-C

April 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **May 18, 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 842b 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.

THC/CH₄/NMHC: The sample pump was replaced on April 11. Two hours of downtime were recorded due to this maintenance event.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee, Three Creeks 842b Station.

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

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Three Creeks 842b Station						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO ₂ (ppb)	172	48	0	0	0	2	1	8	1.4	SSW	0	1	100.0
TRS (ppb)	-	-	-	-	0.16	0.80	2	1	1.4	ENE	0.26	2	100.0
THC (ppm)	-	-	-	-	1.98	2.21	27	2	5.2	ESE	2.07	9	99.7
CH ₄ (ppm)	-	-	-	-	1.98	2.21	27	2	5.2	ESE	2.07	9	99.7
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	4.6	SE	0.00	1	99.7
RELATIVE HUMIDITY (%)	-	-	-	-	58	95	17	20	12.2	WSW	92	17	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	943	961	5	13	9.9	N	959	5	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	-0.1	21.4	27	17	15.7	SW	11.9	28	100.0
STATION TEMPERATURE (°C)	-	-	-	-	21.8	26.6	28	18	14.8	N	24.1	28	100.0
VECTOR WS (kph)	-	-	-	-	2.7	23.9	19	13	-	SSW	15.7	19	100.0
VECTOR WD (sec)	-	-	-	-	227 (SW)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY

MONTHLY REPORT SUMMARY

Three Creeks 842b Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2018	April

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO ₂	100.0	0.002 ppm		0	0.000 ppm	0
TRS	100.0	0.001 ppm		-	0.000 ppm	-
THC	99.7	2.21 ppm		-	2.07 ppm	-
CH ₄	99.7	2.21 ppm		-	2.07 ppm	-
NMHC	99.7	0.00 ppm		-	0.00 ppm	-
RH	100.0	95 %		-	92 %	-
BP	100.0	961 mb		-	959 mb	-
Ambient TPX	100.0	21.4 °C		-	11.9 °C	-
Station TPX	100.0	26.6 °C		-	24.1 °C	-
Wind Speed	100.0	23.9 kph		-	15.7 kph	-
Wind Direction	100.0	-		-	-	-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

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

SO₂ 24-Hour Exceedances

Measured concentrations of sulphur dioxide were below the 24-hour AAAQO of 48.0 ppb.

In accordance with EPEA and the Substance Release Regulation.

In accordance with A Guide to Release Reporting and the Alberta Ambient Air Quality Objectives and Guidelines Summary.

TABLE OF CONTENTS

<u>Title</u>	<u>Page</u>
SUMMARY	2
MONTHLY CONTINUOUS DATA SUMMARY REPORT	3
SOUR GAS SUMMARY REPORT	4
EXCEEDANCE SUMMARY REPORT	5
TABLE OF CONTENTS	6
 1.0 Discussion	 8
.....	
2.0 Project Personnel	10
.....	
3.0 Plant Monthly Required AMD Summary	10
.....	
4.0 Calculations and Results	10
.....	
5.0 Methods and Procedures	11
.....	
Appendix I	Continuous Monitoring Data Results 14
.....	
	Sulphur Dioxide 15
	Total Reduced Sulphur 21
	Total Hydrocarbon 27
	Methane 33
	Non-Methane Hydrocarbon 39
	Wind Speed 45
	Wind Direction 50
	Relative Humidity 53
	Barometric Pressure 56
	Ambient Temperature 59
	Station Temperature 62
Appendix II	Equipment Calibration Results 65
.....	
	Sulphur Dioxide 66
	Total Reduced Sulphur 69
	Total Hydrocarbon 72
	Wind System 78
	Meteorological System Check 80

	Calibrators	82
	Calibration Gases	85
Appendix III	Maximum Instantaneous Data	89
Appendix IV	Report Certification Form	102
Appendix V	Data Validation Certification Form	104

1.0 Discussion

This monthly report consists of continuous monitoring results for the following parameters: Sulphur Dioxide (SO₂), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH₄), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

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

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO₂)

- Operational time for the monitoring period was 100%.
- The routine monthly calibration was performed on April 11.

TOTAL REDUCED SULPHUR (TRS)

- Operational time for the monitoring period was 100%.
- The routine monthly calibration was performed on April 11.

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

- Operational time for the monitoring period was 99.7%, equivalent to two hours of downtime.
- On April 11, following a successful shut-down calibration, the sample pump was replaced as a routine maintenance measure. A post-repair calibration was successfully completed afterwards. Two hours of downtime were recorded due to this event.
- The fuel gas (H₂) cylinder was replaced on April 11.
- During minute data review, data that were deemed anomalous, due to suspected poor injections, were discarded and the corresponding hourly average was re-calculated. The following minute data were impacted: April 18, 22:48-22:49.
- 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 calibration on April 11 to assess the effectiveness of the canister system. As the test extended for less than 15 minutes, hourly average data quality and data completeness criteria were not impacted. Hour 16:00 of maximum instantaneous data was, however, discarded as a result.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 100%.
- Wind data is reported as vector wind speed and vector wind direction. Wind direction is defined as the direction from which the wind is blowing from and is measured in degrees from true north.

RELATIVE HUMIDITY (RH)

- Operational time for the monitoring period was 100%.
- A humidity sensor audit was conducted on April 11. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.
- A pressure sensor audit was conducted on April 11. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on April 11. The result was satisfactory.

STATION TEMPERATURE (StnTPX)

- Operational time for the monitoring period was 100%.

2.0 Project Personnel

Karla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technician was Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

Maxxam AIR SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring

Maxxam AIR SOP-00013: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - Thermo 43i 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

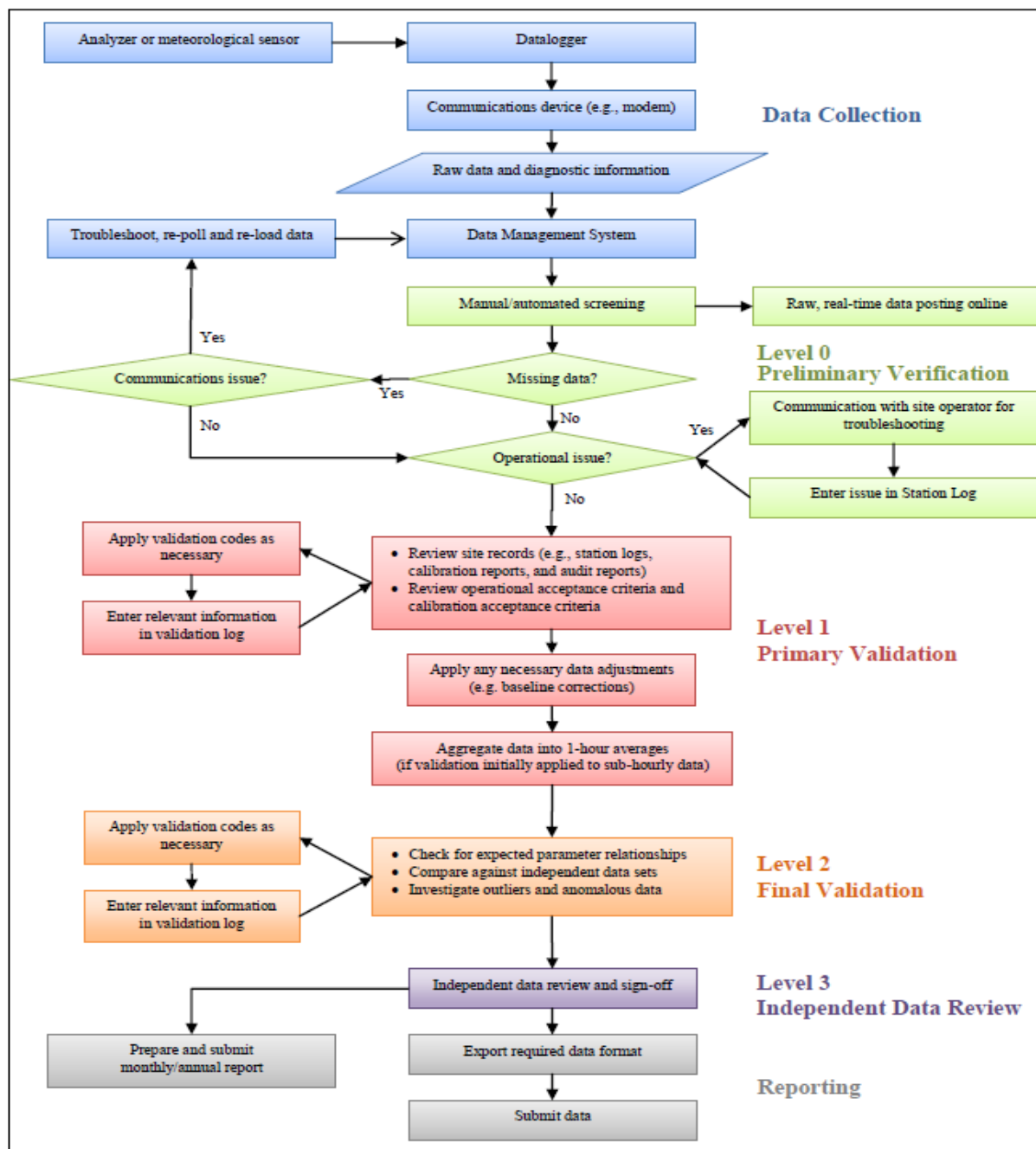
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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 (SO₂ ppb)

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

STATUS FLAG CODES

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

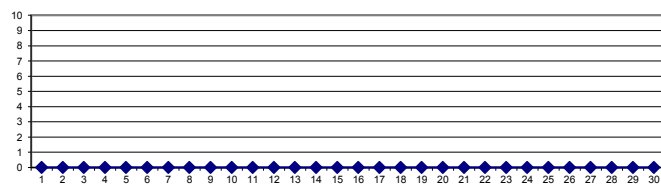
OBJECTIVE LIMIT:

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

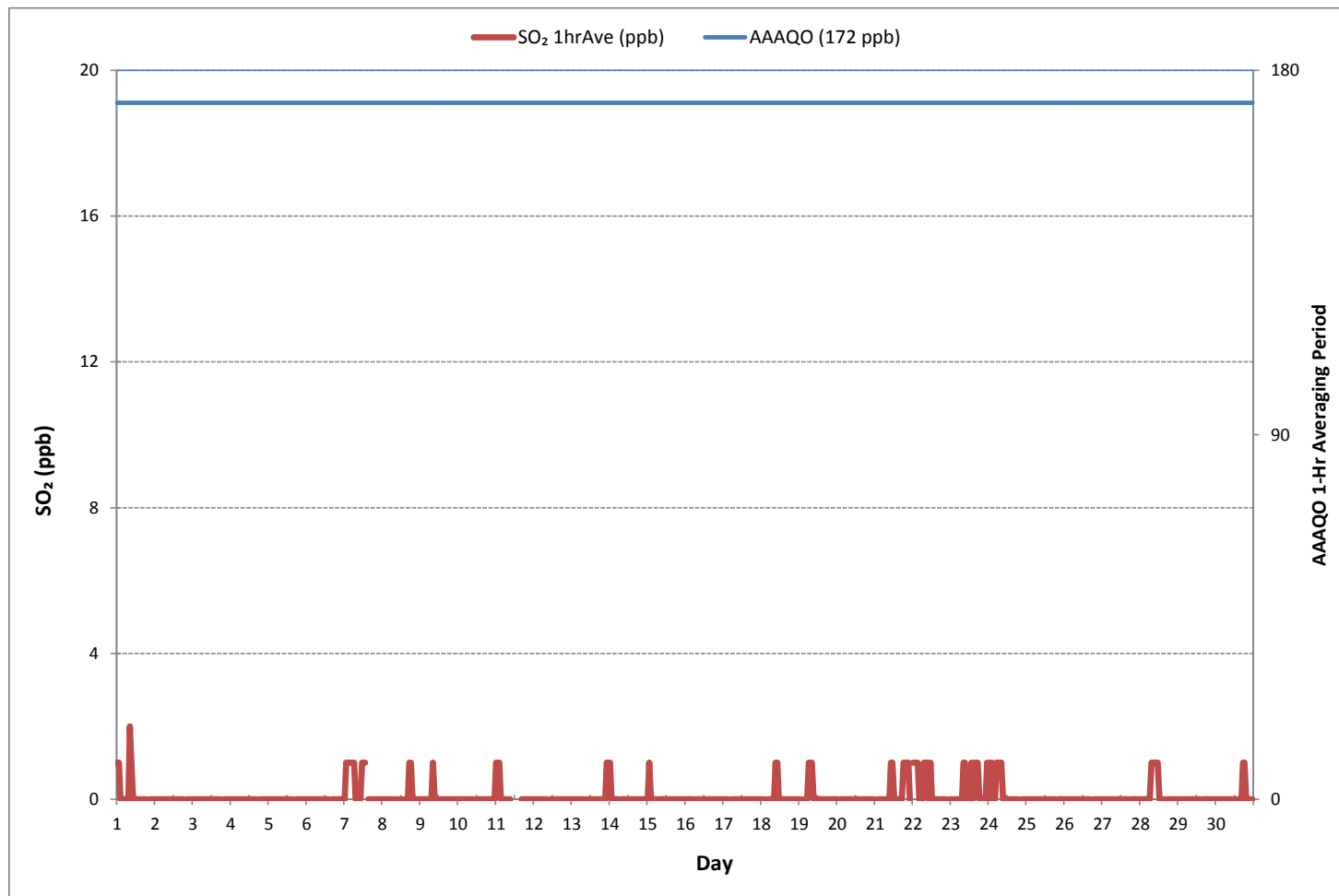
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:		0	
NUMBER OF 24-HR EXCEEDANCES:		0	
NUMBER OF NON-ZERO READINGS:		62	
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR	2	ON DAY 1
MAXIMUM 1-HR AVERAGE:	2 ppb @ HOUR	8	ON DAY 1
MAXIMUM 24-HR AVERAGE:	0 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

24 HR AVERAGES April 2018



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)



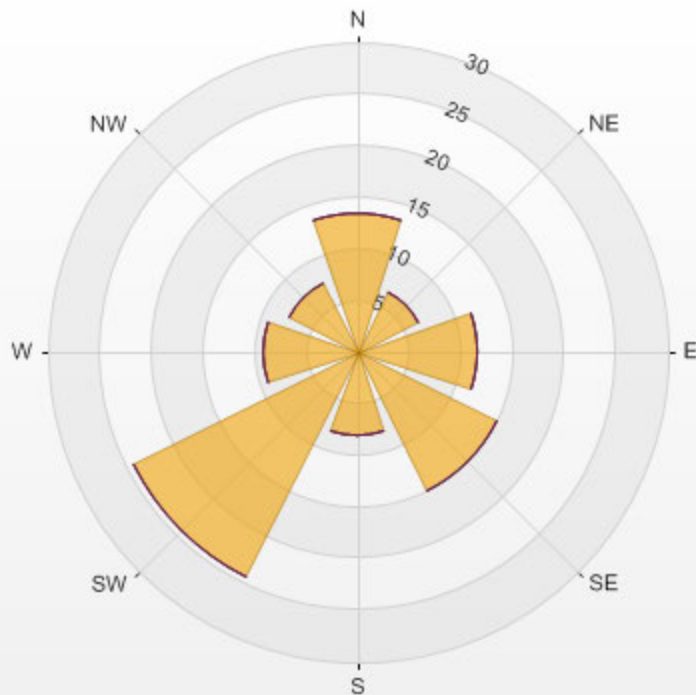
Wind: PRAMP_842
Poll.: PRAMP_842-SO₂[ppb]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 3.94%

Calm Avg: 0.16 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	13.4	0.0	0.0	0.0	0.0	13.4
NE	6.6	0.0	0.0	0.0	0.0	6.6
E	11.7	0.0	0.0	0.0	0.0	11.7
SE	15.2	0.0	0.0	0.0	0.0	15.2
S	8.2	0.0	0.0	0.0	0.0	8.2
SW	24.4	0.0	0.0	0.0	0.0	24.4
W	9.2	0.0	0.0	0.0	0.0	9.2
NW	7.5	0.0	0.0	0.0	0.0	7.5
Summary	96.1	0.0	0.0	0.0	0.0	96.1

PRAMP_842 Poll.: PRAMP_842-SO2[ppb] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 3.94% Calm Poll Avg: 0.16[ppb]



SO2[ppb] Calibration: PRAMP_842 Monthly: 18/04 Type: Span

Span Meas Span Ref Span Low Span High



TOTAL REDUCED SULPHUR

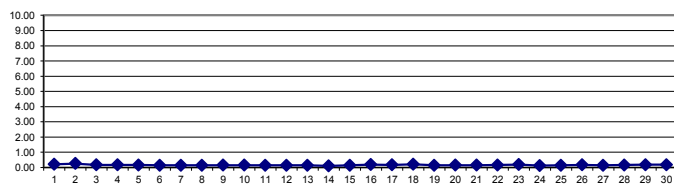
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	0.20	0.20	0.21	0.21	0.21	0.24	0.21	0.24	0.27	0.22	0.20	0.18	0.18	0.18	0.19	0.17	0.16	0.17	0.16	0.16	S	0.37	0.32	0.18	0.16	0.37	0.21	24
2	0.28	0.80	0.76	0.56	0.32	0.22	0.17	0.16	0.15	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.16	S	0.17	0.18	0.16	0.37	0.15	0.80	0.26	24
3	0.56	0.27	0.24	0.24	0.25	0.15	0.20	0.14	0.14	0.13	0.13	0.12	0.13	0.12	0.12	0.12	0.11	0.12	S	0.14	0.12	0.12	0.13	0.13	0.11	0.56	0.17	24
4	0.14	0.13	0.16	0.15	0.16	0.22	0.16	0.16	0.16	0.16	0.15	0.17	0.16	0.17	0.16	0.17	0.18	S	0.20	0.17	0.21	0.23	0.26	0.17	0.13	0.26	0.17	24
5	0.18	0.20	0.19	0.18	0.16	0.17	0.17	0.16	0.15	0.17	0.15	0.14	0.16	0.17	0.15	0.15	S	0.15	0.16	0.16	0.15	0.14	0.14	0.15	0.14	0.20	0.16	24
6	0.18	0.17	0.17	0.17	0.16	0.15	0.14	0.14	0.13	0.14	0.14	0.12	0.14	0.12	0.12	S	0.15	0.13	0.12	0.12	0.12	0.13	0.13	0.13	0.12	0.18	0.14	24
7	0.14	0.13	0.14	0.15	0.16	0.15	0.15	0.15	0.15	0.15	0.17	0.14	0.15	0.14	S	0.13	0.13	0.12	0.11	0.13	0.13	0.13	0.12	0.13	0.11	0.17	0.14	24
8	0.12	0.14	0.13	0.13	0.16	0.17	0.16	0.15	0.16	0.15	0.15	0.15	0.14	S	0.15	0.14	0.14	0.13	0.14	0.13	0.14	0.13	0.14	0.13	0.12	0.17	0.14	24
9	0.15	0.15	0.17	0.17	0.16	0.16	0.17	0.16	0.16	0.15	0.14	0.14	S	0.16	0.15	0.14	0.12	0.12	0.14	0.13	0.15	0.16	0.17	0.18	0.12	0.18	0.15	24
10	0.19	0.16	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	S	0.17	0.16	0.14	0.14	0.14	0.13	0.14	0.14	0.14	0.13	0.14	0.14	0.13	0.19	0.15	24
11	0.14	0.15	0.14	0.14	0.14	0.14	0.13	0.17	C	C	C	C	C	0.22	0.15	0.13	0.14	0.14	0.14	0.13	0.13	0.12	0.12	0.12	0.12	0.22	0.14	24
12	0.13	0.15	0.13	0.14	0.15	0.15	0.16	0.16	0.16	S	0.16	0.15	0.14	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.13	0.14	0.14	0.15	0.13	0.16	0.15	24
13	0.16	0.17	0.18	0.17	0.19	0.17	0.16	0.15	S	0.17	0.16	0.16	0.15	0.13	0.14	0.13	0.11	0.11	0.10	0.12	0.10	0.12	0.12	0.13	0.10	0.19	0.14	24
14	0.12	0.11	0.12	0.13	0.12	0.12	0.12	S	0.13	0.12	0.11	0.09	0.11	0.09	0.09	0.10	0.09	0.08	0.10	0.11	0.10	0.10	0.13	0.10	0.08	0.13	0.11	24
15	0.11	0.12	0.12	0.11	0.11	0.11	S	0.15	0.13	0.13	0.12	0.12	0.13	0.15	0.16	0.20	0.18	0.20	0.19	0.15	0.17	0.18	0.18	0.20	0.11	0.20	0.15	24
16	0.19	0.19	0.19	0.20	0.20	S	0.23	0.20	0.21	0.21	0.22	0.21	0.20	0.18	0.20	0.17	0.17	0.17	0.16	0.15	0.16	0.16	0.15	0.15	0.15	0.23	0.19	24
17	0.14	0.14	0.13	0.14	S	0.16	0.15	0.15	0.16	0.19	0.20	0.19	0.17	0.19	0.20	0.20	0.19	0.20	0.21	0.21	0.18	0.20	0.19	0.18	0.13	0.21	0.18	24
18	0.18	0.18	0.19	S	0.18	0.26	0.53	0.77	0.25	0.19	0.23	0.17	0.15	0.14	0.12	0.13	0.13	0.13	0.12	0.13	0.13	0.13	0.12	0.14	0.12	0.77	0.20	24
19	0.16	0.13	S	0.16	0.16	0.17	0.17	0.14	0.15	0.17	0.15	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.16	0.15	0.16	0.12	0.17	0.15	24
20	0.15	S	0.17	0.15	0.16	0.18	0.18	0.19	0.17	0.16	0.14	0.16	0.15	0.16	0.14	0.15	0.14	0.14	0.13	0.13	0.13	0.14	0.14	0.14	0.13	0.19	0.15	24
21	S	0.16	0.14	0.14	0.14	0.14	0.14	0.15	0.13	0.16	0.22	0.23	0.17	0.15	0.16	0.16	0.17	0.16	0.15	0.14	0.14	0.14	0.13	S	0.13	0.23	0.16	24
22	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.18	0.24	0.19	0.19	0.15	0.13	0.13	0.12	0.12	0.14	0.14	0.14	0.14	0.15	0.14	S	0.19	0.12	0.24	0.16	24
23	0.25	0.24	0.23	0.20	0.22	0.25	0.24	0.21	0.20	0.18	0.16	0.18	0.17	0.16	0.14	0.15	0.15	0.16	0.15	0.16	0.19	S	0.21	0.21	0.14	0.25	0.19	24
24	0.18	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.12	0.11	0.13	0.11	0.11	0.11	0.09	0.10	S	0.12	0.13	0.12	0.09	0.18	0.13	24	
25	0.12	0.14	0.13	0.14	0.14	0.14	0.13	0.13	0.15	0.15	0.14	0.15	0.13	0.15	0.16	0.15	0.15	0.14	0.16	S	0.16	0.15	0.16	0.16	0.12	0.16	0.14	24
26	0.17	0.20	0.19	0.19	0.21	0.20	0.21	0.19	0.19	0.20	0.17	0.15	0.15	0.15	0.15	0.15	0.13	0.14	S	0.16	0.14	0.14	0.13	0.15	0.13	0.21	0.17	24
27	0.16	0.15	0.15	0.14	0.13	0.13	0.11	0.12	0.13	0.14	0.15	0.14	0.14	0.15	0.15	0.15	0.15	S	0.16	0.16	0.16	0.14	0.14	0.13	0.11	0.16	0.14	24
28	0.12	0.13	0.11	0.12	0.13	0.14	0.14	0.15	0.15	0.17	0.17	0.18	0.18	0.15	0.14	0.19	S	0.18	0.17	0.17	0.17	0.18	0.19	0.21	0.11	0.21	0.16	24
29	0.22	0.20	0.20	0.21	0.21	0.20	0.20	0.19	0.20	0.17	0.17	0.18	0.17	0.15	0.15	S	0.17	0.16	0.15	0.16	0.15	0.16	0.20	0.27	0.15	0.27	0.18	24
30	0.17	0.17	0.16	0.17	0.19	0.18	0.19	0.18	0.19	0.18	0.20	0.20	0.20	0.18	S	0.18	0.17	0.20	0.19	0.17	0.17	0.18	0.17	0.18	0.16	0.20	0.18	24
HOURLY MAX	0.56	0.80	0.76	0.56	0.32	0.26	0.53	0.77	0.27	0.22	0.23	0.23	0.20	0.22	0.20	0.20	0.19	0.20	0.21	0.21	0.21	0.37	0.32	0.37				
HOURLY AVG	0.18	0.19	0.18	0.18	0.17	0.17	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.17				

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

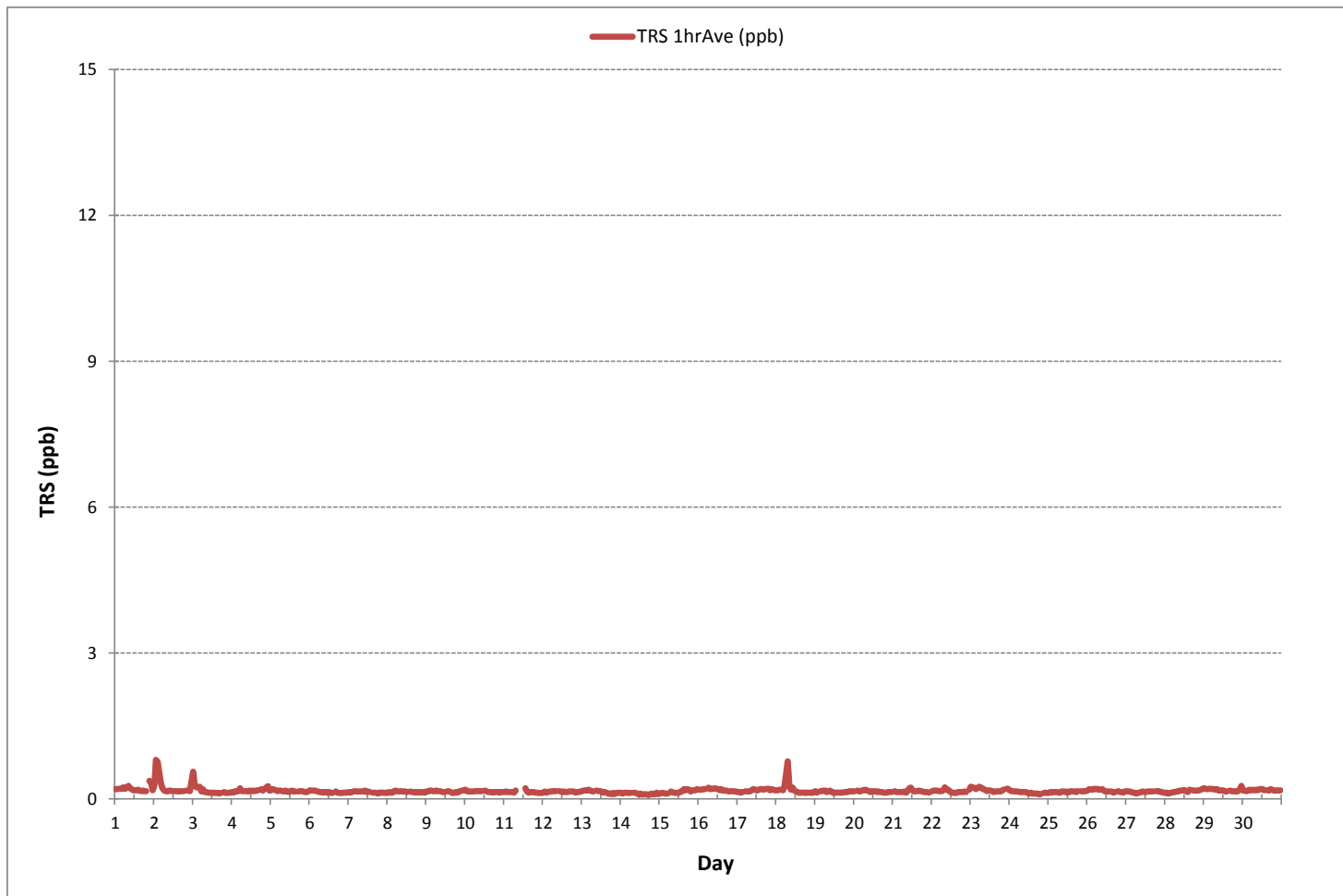
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685				
MINIMUM 1-HR AVERAGE:	0.08	ppb @ HOUR	17	ON DAY	14
MAXIMUM 1-HR AVERAGE:	0.80	ppb @ HOUR	1	ON DAY	2
MAXIMUM 24-HR AVERAGE:	0.26	ppb		ON DAY	2
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	0.16	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



Wind: PRAMP_842
Poll.: PRAMP_842-TRS[ppb]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

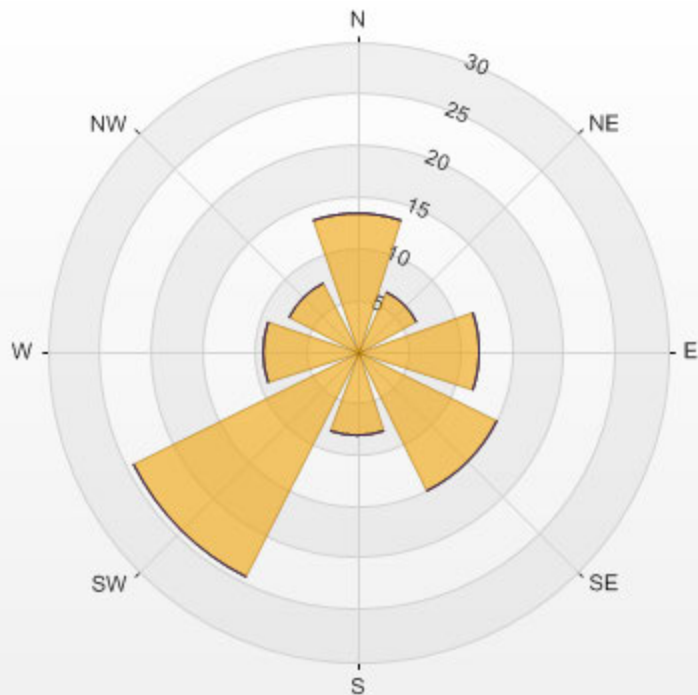
Calm: 3.94%

Calm Avg: 0.24 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	13.4	0.0	0.0	0.0	13.4
NE	6.4	0.0	0.0	0.0	6.4
E	11.8	0.0	0.0	0.0	11.8
SE	15.2	0.0	0.0	0.0	15.2
S	8.2	0.0	0.0	0.0	8.2
SW	24.4	0.0	0.0	0.0	24.4
W	9.2	0.0	0.0	0.0	9.2
NW	7.5	0.0	0.0	0.0	7.5
Summary	96.1	0.0	0.0	0.0	96.1

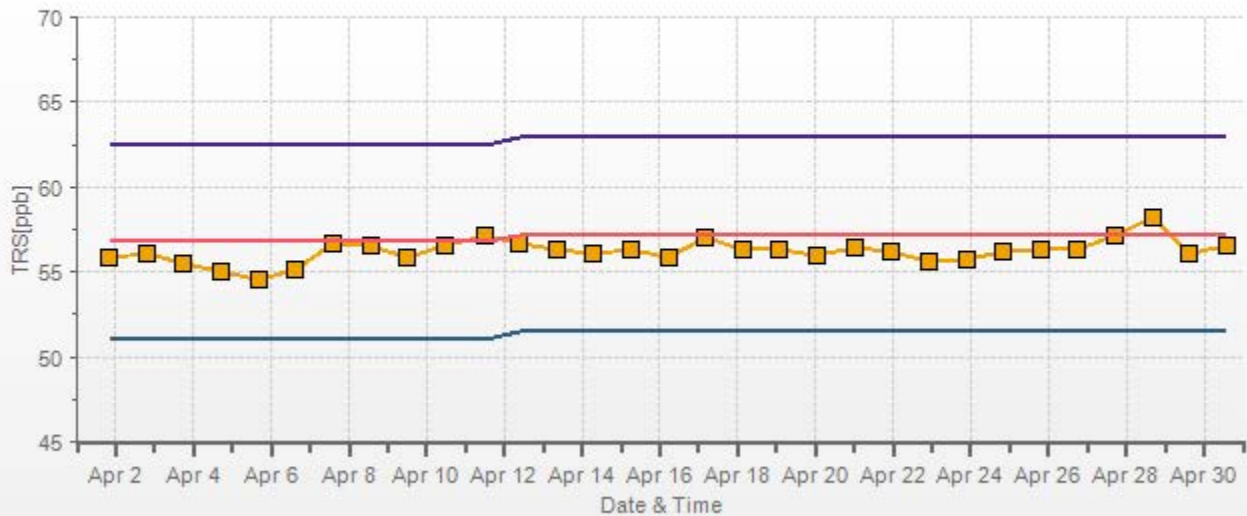
%	Icon	Classes (ppb)
96		0-1
0		1-3
0		3-10
0		>10.0

PRAMP_842 Poll.: PRAMP_842-TRS[ppb] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 3.94% Calm Poll Avg: 0.24[ppb]



TRS[ppb] Calibration: PRAMP_842 Monthly: 18/04 Type: Span

Span Meas Span Ref Span Low Span High



TOTAL HYDROCARBON

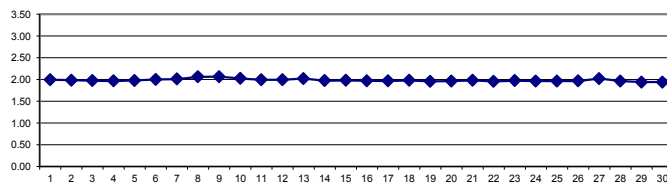
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.00	2.01	2.01	2.02	2.03	2.05	2.07	2.09	2.10	1.98	1.96	1.95	1.95	1.96	1.96	1.95	1.96	1.96	1.95	1.97	S	2.01	1.97	1.96	1.95	1.95	2.10	1.99	24
2	1.96	2.10	2.15	2.17	2.08	1.98	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.96	1.95	S	1.96	1.96	1.95	1.98	1.94	2.17	1.98	24	
3	2.01	2.11	2.05	2.00	1.98	1.97	1.97	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	S	1.97	1.96	1.96	1.95	1.96	1.95	2.11	1.98	24	
4	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.99	S	1.99	1.98	1.97	1.97	1.97	1.97	1.95	1.99	1.97	24		
5	1.97	1.97	1.97	1.98	1.99	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.98	S	1.99	1.99	1.98	1.99	2.00	2.00	2.01	1.96	2.01	1.98	24		
6	2.05	2.03	2.03	2.02	2.01	2.01	2.00	2.00	2.00	1.99	1.98	1.98	1.99	1.99	2.00	S	2.00	2.01	2.01	2.00	2.00	2.00	2.00	1.99	1.98	2.05	2.00	24	
7	2.00	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	S	2.02	2.02	2.01	2.02	2.02	2.01	2.01	2.01	2.02	2.00	2.02	2.01	24	
8	2.02	2.01	2.01	2.02	2.06	2.09	2.08	2.07	2.05	2.05	2.05	2.05	2.06	S	2.07	2.08	2.08	2.11	2.08	2.08	2.11	2.08	2.07	2.07	2.01	2.11	2.06	24	
9	2.09	2.09	2.08	2.09	2.09	2.09	2.08	2.07	2.05	2.03	2.03	2.03	S	2.03	2.05	2.06	2.05	2.04	2.05	2.06	2.06	2.05	2.10	2.14	2.03	2.14	2.07	24	
10	2.15	2.05	2.04	2.03	2.03	2.02	2.01	2.02	2.02	2.01	2.02	S	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.02	2.02	2.02	2.01	2.15	2.03	24	
11	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.01	C	C	C	Y	Y	C	C	C	1.98	1.97	1.97	1.98	1.99	1.98	1.97	1.98	1.97	2.02	2.00	22	
12	1.98	2.01	2.00	2.00	1.99	1.99	1.98	1.99	1.99	S	1.98	1.98	1.98	1.98	1.98	1.99	2.00	2.01	2.02	2.01	2.01	2.03	2.02	2.03	1.98	2.03	2.00	24	
13	2.03	2.03	2.04	2.03	2.03	2.03	2.04	2.04	S	2.06	2.06	2.05	2.04	2.00	2.01	1.99	1.98	1.98	1.98	1.99	2.02	2.04	2.03	2.02	1.98	2.06	2.02	24	
14	2.01	2.02	2.04	2.02	1.97	1.95	1.96	S	1.96	1.95	1.96	1.97	1.97	1.97	1.97	1.96	1.99	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.95	2.04	1.98	24	
15	1.96	1.97	1.97	1.97	1.97	1.98	S	1.97	1.97	1.96	1.97	1.98	1.99	2.00	2.01	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.97	1.97	1.96	2.01	1.98	24	
16	1.97	1.97	1.97	1.97	1.97	S	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	24	
17	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.97	1.97	1.98	1.98	1.97	1.96	1.97	1.96	1.98	1.98	1.98	1.97	1.96	1.98	1.97	24	
18	1.98	1.98	1.98	S	1.98	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.97	1.98	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	2.00	1.98	24	
19	1.96	1.96	S	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.97	1.96	24	
20	1.95	S	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.96	1.96	1.97	2.00	2.01	1.95	2.01	1.96	24	
21	S	1.99	1.99	2.00	2.00	1.99	1.99	1.99	1.99	2.01	1.99	1.99	1.97	1.96	1.96	1.96	1.99	1.99	1.96	1.96	1.96	1.97	1.96	S	1.96	2.01	1.98	24	
22	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.96	S	1.96	1.95	1.97	1.96	24
23	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.98	1.97	1.98	1.97	1.97	1.98	S	1.98	1.98	1.96	1.98	1.98	24	
24	1.97	1.96	1.96	1.99	1.96	1.96	1.96	1.96	1.97	1.98	1.98	1.96	1.96	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.98	1.95	1.96	1.95	1.99	1.96	24
25	1.97	1.97	1.97	1.99	1.99	2.00	1.99	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.96	1.96	1.95	1.95	1.95	2.00	1.96	24	
26	1.95	1.96	1.96	1.96	2.00	1.99	2.03	1.99	1.97	1.97	1.97	1.95	1.95	1.95	1.95	1.96	1.96	1.95	S	1.96	1.95	1.95	1.96	2.05	1.95	2.05	1.97	24	
27	2.15	2.16	2.21	2.19	2.18	2.12	2.04	1.97	1.96	1.96	1.96	1.96	1.97	1.97	1.98	1.98	1.97	S	1.96	1.95	1.96	1.96	1.96	1.97	1.95	2.21	2.02	24	
28	1.98	2.01	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.98	1.96	1.93	1.93	1.95	S	1.95	1.95	1.95	1.96	1.95	1.96	1.96	1.96	1.93	2.01	1.96	24	
29	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.93	S	1.94	1.93	1.93	1.92	1.91	1.91	1.93	1.94	1.91	1.96	1.94	24	
30	1.93	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.96	1.97	1.96	1.95	1.93	S	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.92	1.97	1.94	24
HOURLY MAX	2.15	2.16	2.21	2.19	2.18	2.12	2.08	2.09	2.10	2.06	2.06	2.05	2.06	2.03	2.07	2.08	2.08	2.11	2.08	2.08	2.11	2.08	2.10	2.14					
HOURLY AVG	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99					

STATUS FLAG CODES

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

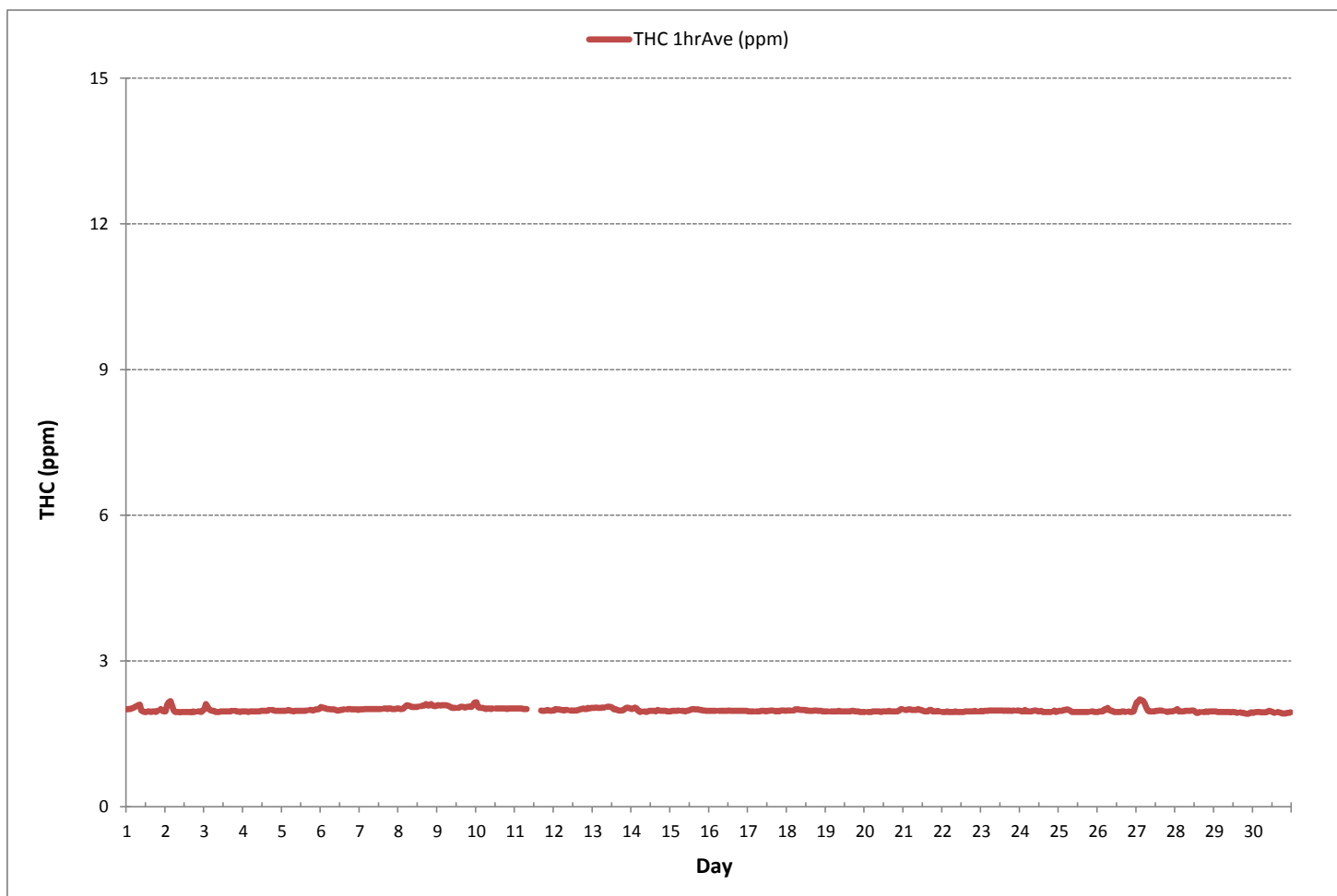
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682			
MINIMUM 1-HR AVERAGE:	1.91	ppm @ HOUR	20	ON DAY 29
MAXIMUM 1-HR AVERAGE:	2.21	ppm @ HOUR	2	ON DAY 27
MAXIMUM 24-HR AVERAGE:	2.07	ppm		ON DAY 9
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:	1.98 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



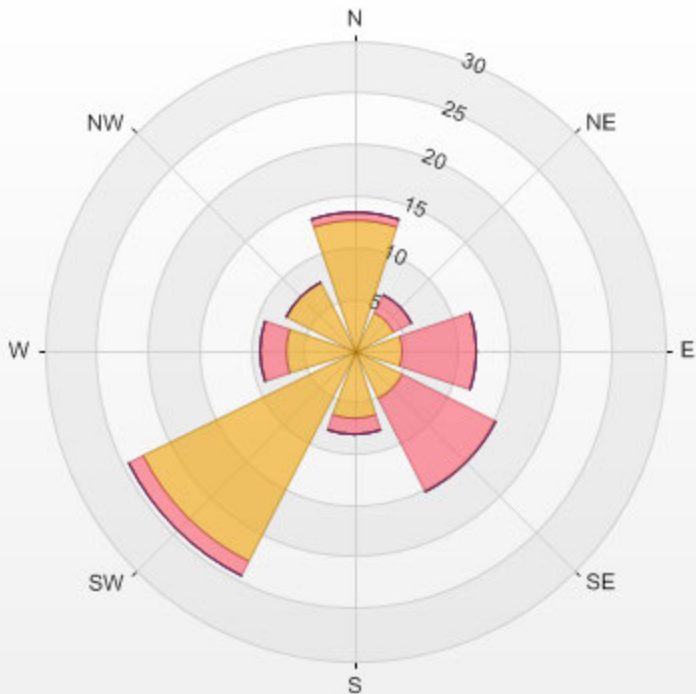
Wind: PRAMP_842
Poll.: PRAMP_842-THC55[ppm]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 3.96%

Calm Avg: 2.01 [ppm]

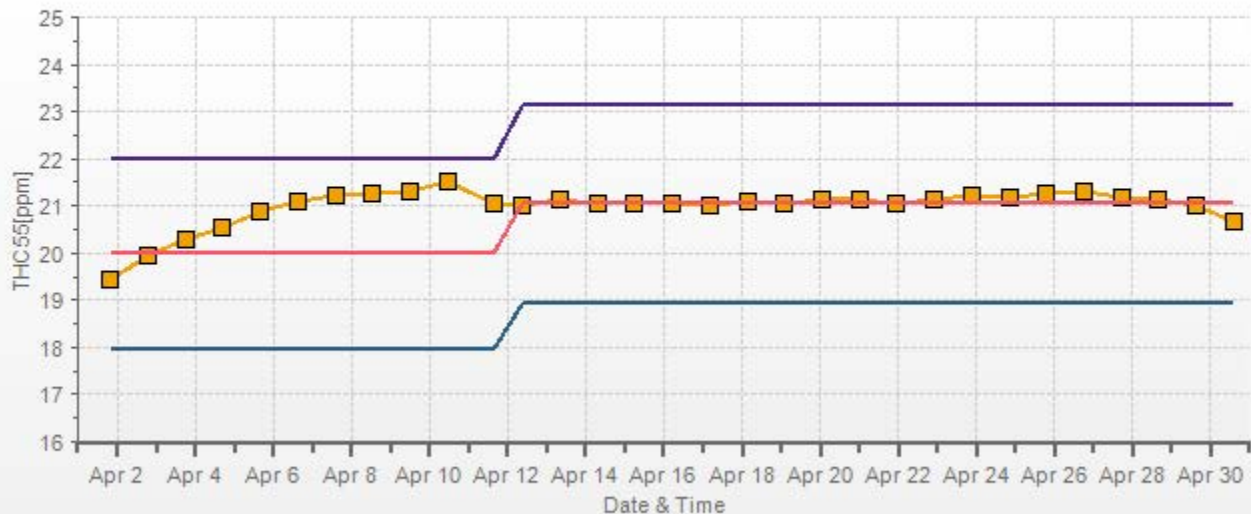
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	12.8	0.7	0.0	0.0	0.0	13.5
NE	4.3	1.9	0.0	0.0	0.0	6.2
E	4.6	7.2	0.0	0.0	0.0	11.7
SE	5.3	10.0	0.0	0.0	0.0	15.3
S	6.6	1.6	0.0	0.0	0.0	8.2
SW	22.9	1.6	0.0	0.0	0.0	24.5
W	6.7	2.5	0.0	0.0	0.0	9.2
NW	7.5	0.0	0.0	0.0	0.0	7.5
Summary	70.5	25.5	0.0	0.0	0.0	96.0

PRAMP_842 Poll.: PRAMP_842-THC55[ppm] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 3.96% Calm Poll Avg: 2.01[ppm]



THC55[ppm] Calibration: PRAMP_842 Monthly: 18/04 Type: Span

Span Meas Span Ref Span Low Span High



METHANE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

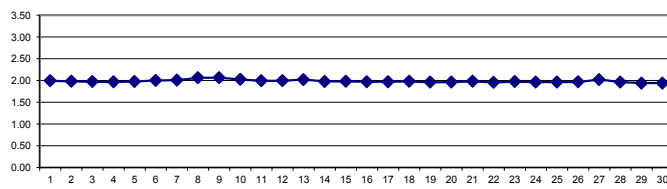
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.00	2.01	2.01	2.02	2.03	2.05	2.07	2.09	2.10	1.98	1.96	1.95	1.95	1.96	1.96	1.95	1.96	1.96	1.95	1.97	S	2.01	1.97	1.96	1.95	2.10	1.99	24	
2	1.96	2.10	2.14	2.17	2.08	1.98	1.95	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	1.94	1.95	1.95	1.95	S	1.96	1.96	1.95	1.98	1.94	2.17	1.98	24	
3	2.01	2.11	2.05	2.00	1.98	1.97	1.97	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	S	1.97	1.96	1.96	1.95	1.96	1.95	2.11	1.98	24	
4	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.99	S	1.99	1.98	1.97	1.97	1.97	1.97	1.95	1.99	1.97	24	
5	1.97	1.97	1.97	1.98	1.99	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	S	1.99	1.99	1.98	1.99	2.00	2.00	2.01	1.97	2.01	1.98	24	
6	2.05	2.03	2.03	2.02	2.01	2.01	2.00	2.00	2.00	1.99	1.98	1.98	1.99	1.99	2.00	S	2.00	2.01	2.01	2.00	2.00	2.00	2.00	1.99	1.98	2.05	2.00	24	
7	2.00	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	S	2.01	2.02	2.01	2.02	2.02	2.01	2.01	2.01	2.02	2.00	2.02	2.01	24	
8	2.02	2.01	2.01	2.02	2.06	2.09	2.08	2.07	2.05	2.05	2.05	2.05	2.06	S	2.07	2.08	2.08	2.10	2.08	2.08	2.11	2.08	2.07	2.07	2.01	2.11	2.06	24	
9	2.09	2.09	2.08	2.09	2.09	2.09	2.08	2.07	2.05	2.03	2.03	2.03	S	2.03	2.05	2.06	2.04	2.04	2.05	2.06	2.06	2.05	2.10	2.14	2.03	2.14	2.07	24	
10	2.15	2.05	2.04	2.03	2.03	2.02	2.01	2.02	2.02	2.01	2.02	S	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.02	2.02	2.02	2.01	2.15	2.03	24	
11	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.01	C	C	C	Y	Y	C	C	C	1.98	1.97	1.97	1.98	1.99	1.98	1.97	1.98	1.97	2.02	2.00	22	
12	1.98	2.01	2.00	2.00	1.99	1.99	1.98	1.99	1.99	S	1.98	1.98	1.98	1.98	1.98	1.99	2.00	2.01	2.02	2.01	2.01	2.03	2.02	2.03	1.98	2.03	2.00	24	
13	2.03	2.03	2.04	2.03	2.03	2.03	2.04	2.04	S	2.06	2.06	2.05	2.04	2.00	2.01	1.99	1.98	1.98	1.98	1.99	2.02	2.04	2.03	2.02	1.98	2.06	2.02	24	
14	2.01	2.02	2.04	2.02	1.97	1.96	1.96	S	1.96	1.95	1.96	1.97	1.97	1.97	1.97	1.97	1.99	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.95	2.04	1.98	24	
15	1.96	1.97	1.97	1.97	1.97	1.98	S	1.97	1.97	1.96	1.97	1.98	1.99	2.00	2.01	2.00	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.97	1.96	2.01	1.98	24	
16	1.97	1.97	1.97	1.97	1.97	S	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.98	1.97	24	
17	1.96	1.96	1.97	1.96	S	1.97	1.96	1.96	1.97	1.97	1.97	1.96	1.97	1.97	1.99	1.98	1.97	1.96	1.97	1.96	1.98	1.98	1.98	1.97	1.96	1.99	1.97	24	
18	1.98	1.98	1.98	S	1.99	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.97	1.98	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	2.00	1.98	24	
19	1.96	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.97	1.96	24	
20	1.95	S	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.96	1.96	1.97	2.00	2.01	1.95	2.01	1.96	24	
21	S	1.99	1.99	2.00	2.00	1.99	1.99	1.99	1.99	2.01	1.99	1.99	1.97	1.96	1.96	1.96	1.98	1.99	1.96	1.96	1.96	1.96	1.97	1.96	S	1.96	2.01	1.98	24
22	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.96	S	1.96	1.95	1.97	24	
23	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.98	1.97	1.98	1.97	1.97	1.98	S	1.98	1.98	1.96	1.98	1.98	24	
24	1.97	1.96	1.96	1.99	1.96	1.96	1.96	1.96	1.97	1.98	1.98	1.96	1.96	1.97	1.95	1.95	1.95	1.95	1.95	1.95	S	1.98	1.96	1.96	1.95	1.99	1.96	24	
25	1.97	1.97	1.97	1.99	1.99	2.00	1.99	1.97	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.96	1.96	1.95	1.95	1.95	2.00	1.96	24	
26	1.95	1.96	1.96	1.96	2.00	1.99	2.03	1.99	1.97	1.97	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	S	1.96	1.95	1.95	1.96	2.05	1.95	2.05	1.97	24	
27	2.15	2.16	2.21	2.19	2.18	2.12	2.04	1.97	1.96	1.96	1.96	1.96	1.97	1.97	1.98	1.98	1.97	S	1.96	1.95	1.96	1.96	1.96	1.97	1.95	2.21	2.02	24	
28	1.98	2.01	1.96	1.96	1.97	1.96	1.97	1.97	1.97	1.97	1.98	1.98	1.96	1.93	1.93	1.95	S	1.95	1.95	1.96	1.95	1.96	1.96	1.96	1.93	2.01	1.96	24	
29	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.93	S	1.94	1.93	1.93	1.92	1.91	1.91	1.93	1.94	1.91	1.96	1.94	24	
30	1.93	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.96	1.97	1.96	1.95	1.93	S	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.92	1.97	1.94	24
HOURLY MAX	2.15	2.16	2.21	2.19	2.18	2.12	2.08	2.09	2.10	2.06	2.06	2.05	2.06	2.03	2.07	2.08	2.08	2.10	2.08	2.08	2.11	2.08	2.10	2.14					
HOURLY AVG	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99					

STATUS FLAG CODES

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

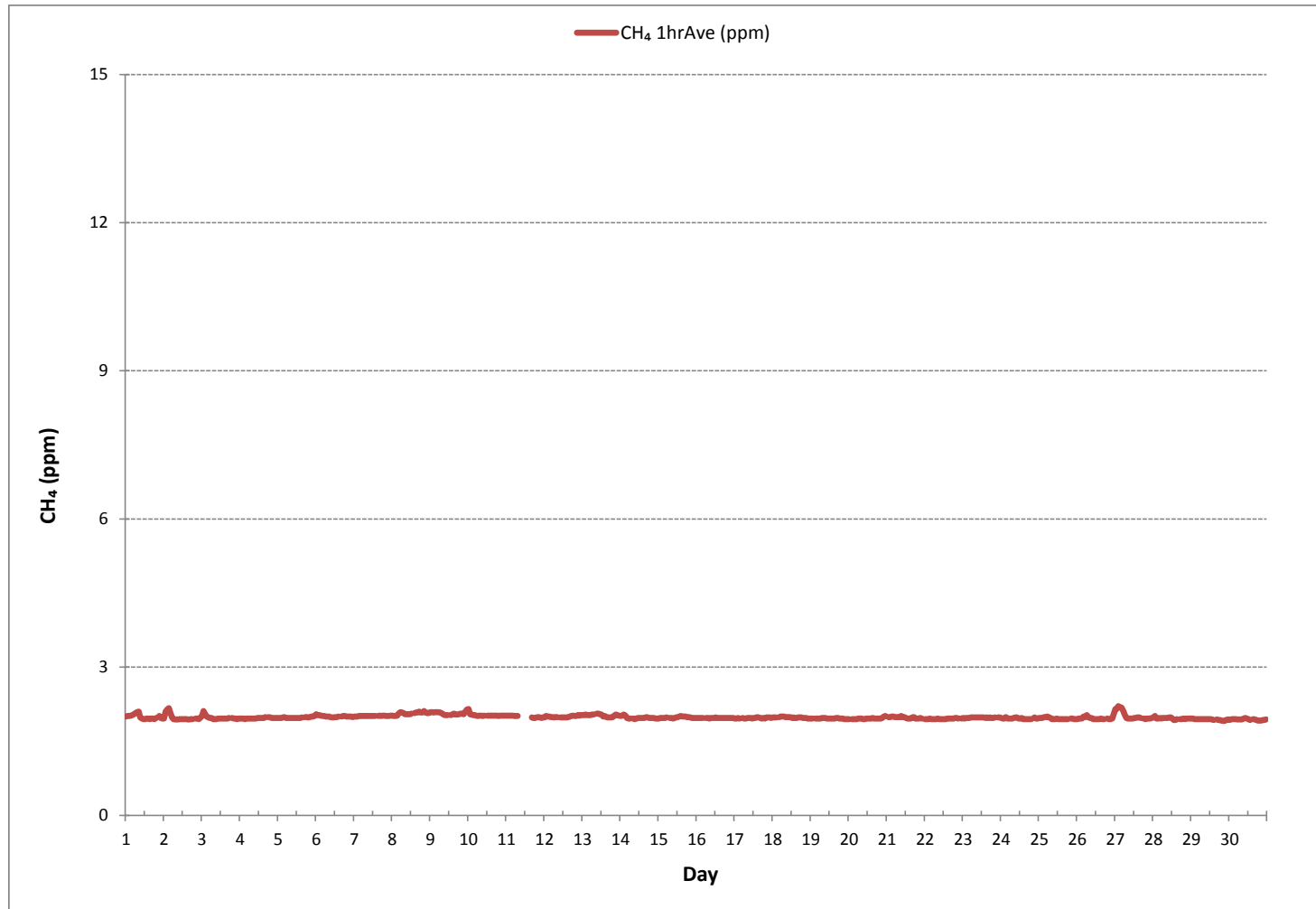
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682			
MINIMUM 1-HR AVERAGE:	1.91	ppm @ HOUR	20	ON DAY 29
MAXIMUM 1-HR AVERAGE:	2.21	ppm @ HOUR	2	ON DAY 27
MAXIMUM 24-HR AVERAGE:	2.07	ppm		ON DAY 9
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:	1.98 ppm

METHANE Hourly Averages (CH₄ ppm)



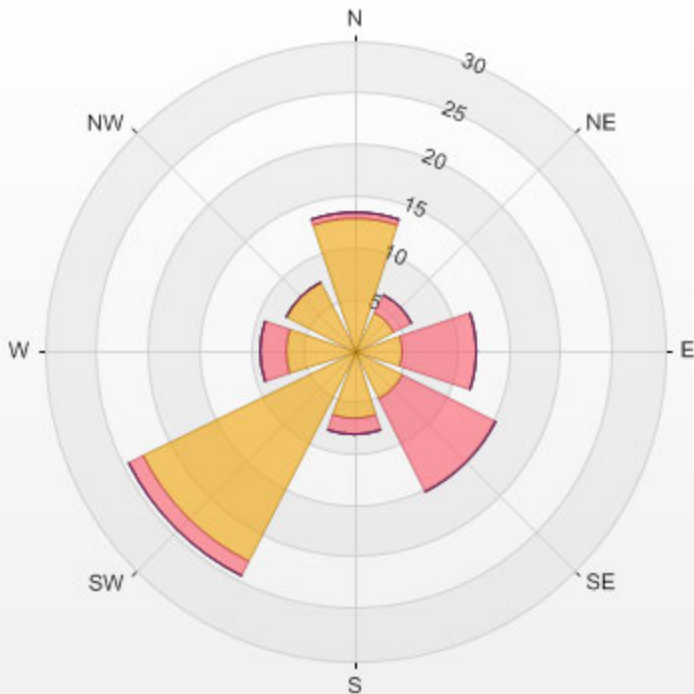
Wind: PRAMP_842
Poll.: PRAMP_842-CH₄[ppm]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 3.96%

Calm Avg: 2.01 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	12.9	0.6	0.0	0.0	0.0	13.5
NE	4.3	1.9	0.0	0.0	0.0	6.2
E	4.6	7.2	0.0	0.0	0.0	11.7
SE	5.1	10.1	0.0	0.0	0.0	15.3
S	6.6	1.6	0.0	0.0	0.0	8.2
SW	22.9	1.6	0.0	0.0	0.0	24.5
W	6.7	2.5	0.0	0.0	0.0	9.2
NW	7.5	0.0	0.0	0.0	0.0	7.5
Summary	70.5	25.5	0.0	0.0	0.0	96.0

PRAMP_842 Poll.: PRAMP_842-CH4[ppm] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 3.96% Calm Poll Avg: 2.01[ppm]



CH₄[ppm] Calibration: PRAMP_842 Monthly: 18/04 Type: Span

Span Meas Span Ref Span Low Span High



NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

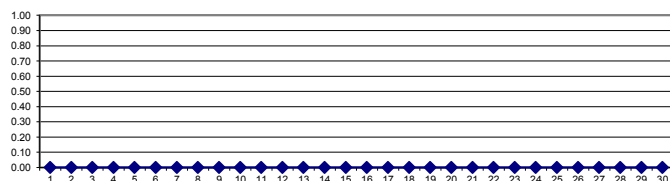
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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

STATUS FLAG CODES

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

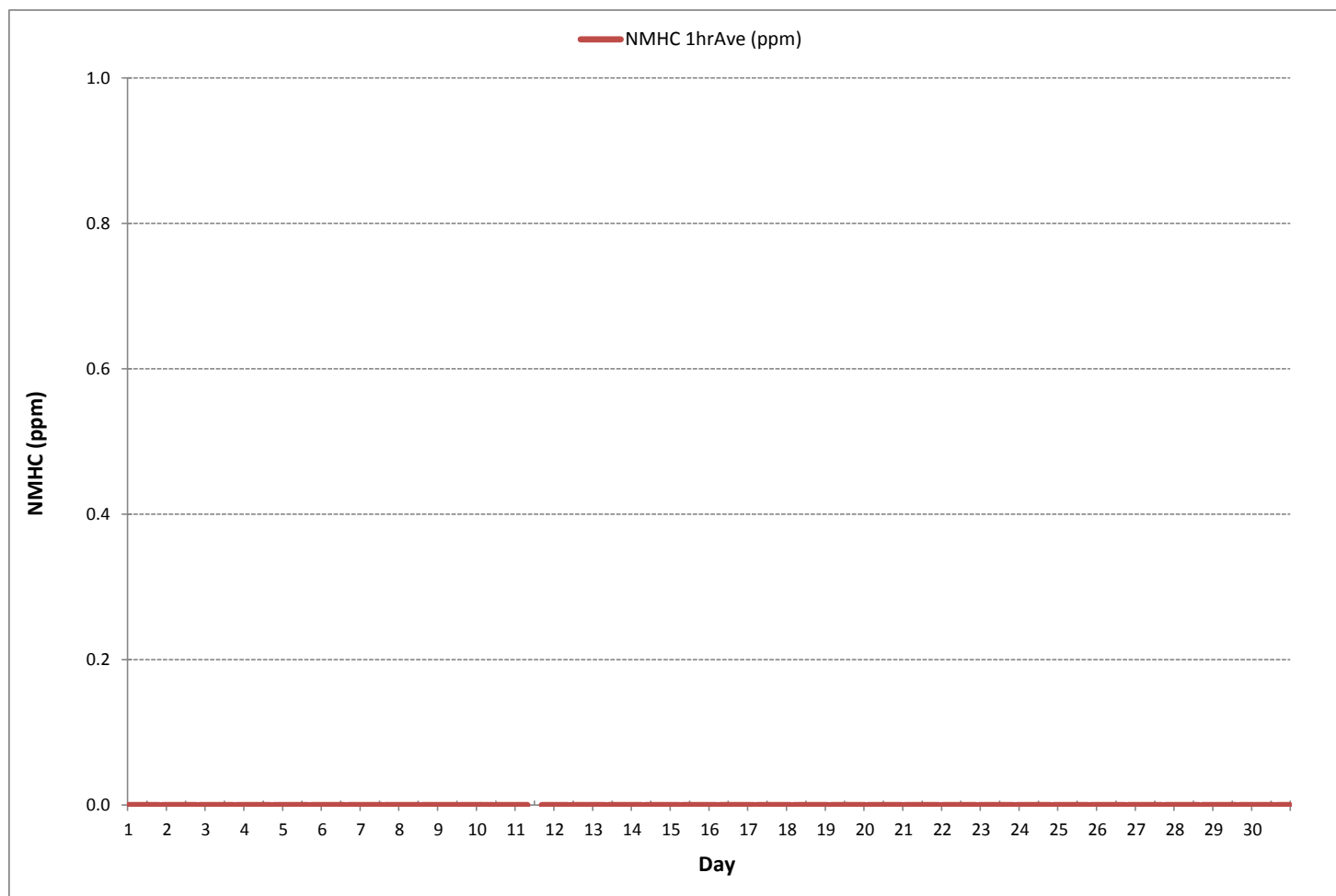
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0				
MINIMUM 1-HR AVERAGE:	0.00	ppm @ HOUR	0	ON DAY	1
MAXIMUM 1-HR AVERAGE:	0.00	ppm @ HOUR	0	ON DAY	1
MAXIMUM 24-HR AVERAGE:	0.00	ppm		ON DAY	1
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	718	hrs
MONTHLY CALIBRATION TIME:	6	hrs	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



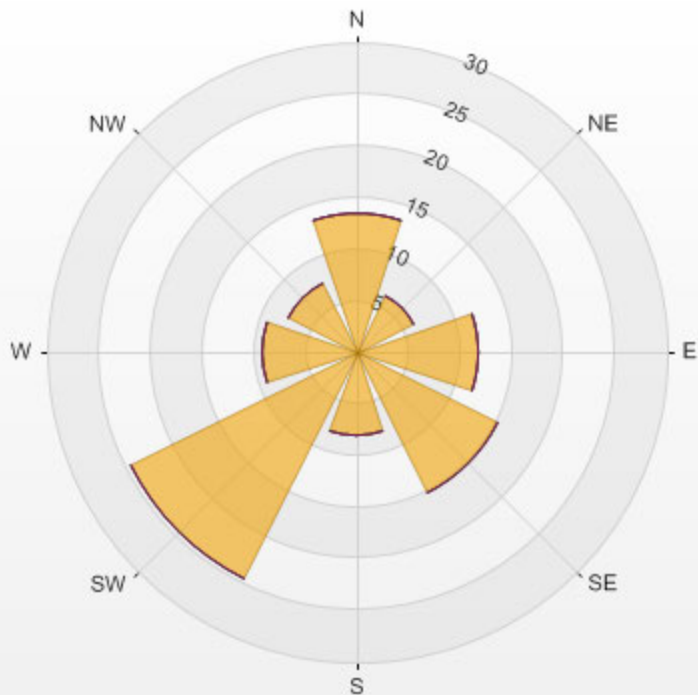
Wind: PRAMP_842
Poll.: PRAMP_842-NMHC[ppm]
Monthly: 18/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 3.96%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	13.5	0.0	0.0	0.0	0.0	13.5
NE	6.2	0.0	0.0	0.0	0.0	6.2
E	11.7	0.0	0.0	0.0	0.0	11.7
SE	15.3	0.0	0.0	0.0	0.0	15.3
S	8.2	0.0	0.0	0.0	0.0	8.2
SW	24.5	0.0	0.0	0.0	0.0	24.5
W	9.2	0.0	0.0	0.0	0.0	9.2
NW	7.5	0.0	0.0	0.0	0.0	7.5
Summary	96.1	0.0	0.0	0.0	0.0	96.1

PRAMP_842 Poll.: PRAMP_842-NMHC[ppm] 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 3.96% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_842 Monthly: 18/04 Type: Span

Span Meas Span Ref Span Low Span High



WIND SPEED



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

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	4.6	4.2	3.8	3.7	3.3	2.7	2.0	2.4	1.4	7.0	11.1	13.0	14.5	14.8	15.0	15.9	14.6	11.2	7.4	5.0	1.8	0.7	2.1	2.2	0.7	15.9	4.2	24	
2	2.7	1.4	0.3	2.2	3.6	5.8	7.5	7.2	10.1	10.6	10.3	11.2	13.1	14.9	17.6	15.7	10.6	9.7	9.3	5.1	2.6	2.0	1.8	0.9	0.3	17.6	6.3	24	
3	1.7	5.2	4.7	3.7	3.7	3.5	2.8	5.4	8.8	10.9	9.0	8.6	13.2	16.1	16.4	15.6	13.4	11.1	11.2	7.4	4.7	5.8	8.2	7.9	1.7	16.4	6.6	24	
4	7.3	6.6	5.6	0.6	1.1	3.6	6.6	9.4	10.7	11.6	14.0	16.2	17.1	15.2	13.8	11.3	12.1	11.7	8.8	4.9	0.8	1.9	4.3	2.6	0.6	17.1	5.4	24	
5	1.8	2.3	2.2	1.5	3.1	5.1	7.3	10.1	11.7	8.7	8.9	8.2	9.4	9.9	8.4	10.2	10.1	10.2	8.5	5.8	3.9	6.3	7.3	6.3	1.5	11.7	6.0	24	
6	5.4	5.5	6.5	6.6	7.1	6.5	5.8	9.6	7.9	8.4	9.5	10.5	11.8	12.3	9.8	11.0	12.2	10.3	9.2	8.3	6.3	8.0	10.0	9.5	5.4	12.3	8.4	24	
7	8.1	6.2	5.1	5.6	5.4	5.6	7.0	6.7	7.1	10.6	11.1	11.0	11.3	12.9	11.3	13.4	12.5	12.4	12.0	11.0	8.3	9.0	7.1	7.5	5.1	13.4	8.8	24	
8	5.9	3.4	4.5	4.1	4.3	5.3	5.4	6.1	7.9	9.2	12.3	10.6	7.1	8.0	12.1	11.9	8.6	10.1	8.4	6.8	3.7	2.8	3.2	4.4	2.8	12.3	3.7	24	
9	4.9	3.8	4.6	5.3	3.3	4.0	4.5	6.4	7.4	9.6	13.3	13.4	11.9	10.5	11.3	11.2	8.6	8.8	7.0	2.5	1.8	2.5	1.8	1.2	1.2	13.4	4.6	24	
10	4.7	8.8	8.8	9.1	9.1	9.4	9.3	11.5	13.5	12.8	13.7	13.5	14.7	13.9	13.6	13.6	12.7	11.9	11.8	10.9	9.5	9.1	6.6	10.1	4.7	14.7	10.7	24	
11	10.1	10.2	8.9	8.9	6.7	8.0	6.6	8.0	8.4	7.4	8.6	7.6	7.5	8.1	6.4	7.6	8.1	8.8	8.9	8.9	7.1	5.5	4.0	4.0	4.0	4.0	10.2	7.3	24
12	4.9	5.5	5.7	6.5	9.5	8.7	9.7	9.8	8.9	8.7	9.4	6.0	7.1	5.4	4.5	8.9	12.2	8.9	9.1	8.7	5.6	7.1	7.8	7.8	4.5	12.2	7.0	24	
13	8.2	8.6	3.7	6.1	9.7	9.0	10.9	12.3	14.3	15.3	15.3	14.4	16.2	15.4	14.1	13.5	11.7	6.2	1.1	5.5	8.5	13.1	16.9	12.3	1.1	16.9	8.4	24	
14	9.9	9.7	8.8	14.3	13.5	12.9	11.6	15.0	19.2	20.5	19.7	18.0	21.1	21.0	20.2	16.3	16.2	14.1	11.9	8.7	8.7	9.6	8.1	10.8	8.1	21.1	13.1	24	
15	10.2	7.6	2.2	2.9	1.2	0.9	1.4	5.2	9.0	8.1	14.5	15.1	15.3	16.6	16.6	15.7	15.3	15.9	15.0	14.6	13.3	15.4	13.1	11.6	0.9	16.6	8.5	24	
16	12.4	13.6	12.3	11.6	11.1	10.1	11.3	11.1	11.0	13.8	13.4	13.0	14.5	13.4	13.9	13.1	11.9	10.1	11.8	12.5	11.0	9.8	9.5	8.8	8.8	14.5	11.6	24	
17	7.9	8.2	7.3	7.4	6.3	7.6	6.0	6.6	5.7	10.5	10.2	10.7	12.9	16.4	18.3	19.1	19.8	19.8	17.4	13.4	12.2	10.4	8.4	8.4	5.7	19.8	8.1	24	
18	9.9	3.2	4.0	1.0	1.2	3.9	5.1	3.7	9.0	11.7	13.0	16.0	17.4	16.7	16.1	15.8	14.1	14.5	13.8	7.2	10.2	11.7	12.7	13.1	1.0	17.4	8.9	24	
19	10.8	9.2	10.8	10.7	10.3	11.1	14.7	17.1	20.3	19.8	18.9	18.5	21.2	23.9	20.9	20.5	21.4	20.5	15.5	12.7	18.3	16.0	13.0	13.7	9.2	23.9	15.7	24	
20	16.1	17.7	15.6	16.8	16.5	6.4	10.5	7.9	13.5	17.6	20.3	20.6	22.5	22.1	22.0	18.5	15.5	13.1	11.3	8.9	3.0	5.2	3.6	6.0	3.0	22.5	13.0	24	
21	5.6	2.3	4.3	3.6	1.6	2.2	0.3	2.0	6.4	8.3	11.2	10.1	10.8	13.2	13.3	13.1	12.0	14.4	16.4	13.6	12.3	14.3	12.7	16.3	0.3	16.4	7.1	24	
22	14.1	9.8	11.4	12.2	13.4	12.5	12.1	11.2	15.4	16.7	17.4	16.3	13.4	19.2	19.9	16.7	20.4	14.4	11.6	7.9	6.5	4.9	5.8	5.4	4.9	20.4	11.5	24	
23	3.0	4.9	3.6	3.2	5.6	4.9	6.4	10.9	10.9	12.9	16.2	16.3	18.1	21.5	22.9	21.5	18.1	13.5	11.9	9.5	8.0	7.4	6.7	8.2	3.0	22.9	10.0	24	
24	10.3	16.2	11.9	12.4	10.4	13.3	14.8	13.8	18.5	16.5	12.4	20.1	21.4	21.0	21.9	18.6	17.9	16.9	16.7	14.3	9.9	8.3	7.6	5.6	5.6	21.9	14.1	24	
25	0.3	3.2	2.2	2.3	1.7	0.4	1.7	4.7	9.0	11.0	13.8	15.3	19.8	21.1	21.4	21.9	20.2	17.0	14.1	8.9	4.5	7.5	11.3	11.3	0.3	21.9	9.8	24	
26	8.4	4.3	2.9	1.6	1.3	2.2	2.0	4.2	5.5	6.7	7.2	7.3	7.3	5.3	6.0	9.0	9.3	10.0	7.7	5.8	2.0	1.5	3.0	4.5	1.3	10.0	3.4	24	
27	4.4	5.7	5.2	4.9	4.9	5.8	8.4	12.0	10.4	13.0	12.1	13.6	16.0	16.5	17.1	15.0	15.9	15.7	12.2	10.8	6.7	4.6	3.2	5.4	3.2	17.1	8.1	24	
28	7.6	8.4	12.0	9.1	4.5	6.1	5.8	8.9	11.7	10.9	11.9	13.0	15.8	19.1	18.1	12.5	12.2	12.0	14.8	13.6	12.6	16.1	11.2	11.7	4.5	19.1	3.5	24	
29	14.5	13.6	12.0	10.1	9.1	8.1	6.8	8.2	7.2	4.3	9.2	9.9	2.7	4.9	5.0	7.7	9.3	8.7	11.1	11.2	8.9	8.7	5.2	3.4	2.7	14.5	4.6	24	
30	2.9	5.0	4.7	6.6	5.8	11.1	11.9	12.8	16.0	16.8	17.3	18.9	18.9	19.0	16.5	9.4	11.2	10.8	7.1	21.3	13.9	11.9	7.3	5.1	2.9	21.3	5.4	24	
HOURLY MAX	16.1	17.7	15.6	16.8	16.5	13.3	14.8	17.1	20.3	20.5	20.3	20.6	22.5	23.9	22.9	21.9	21.4	20.5	17.4	21.3	18.3	16.1	16.9	16.3					
HOURLY AVG	2.0	1.7	1.6	1.6	1.6	1.8	1.6	1.7	2.7	3.6	4.6	5.8	6.7	7.6	7.6	6.6	6.4	5.6	4.3	2.5	1.2	1.4	2.0	2.3					

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

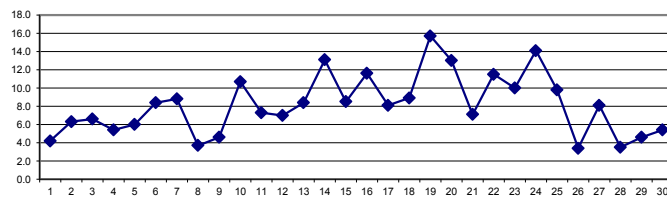
LAST CALIBRATION:

August 30, 2017

DECLINATION:

MAGNETIC DECLINATION 15 DEGREE EAST

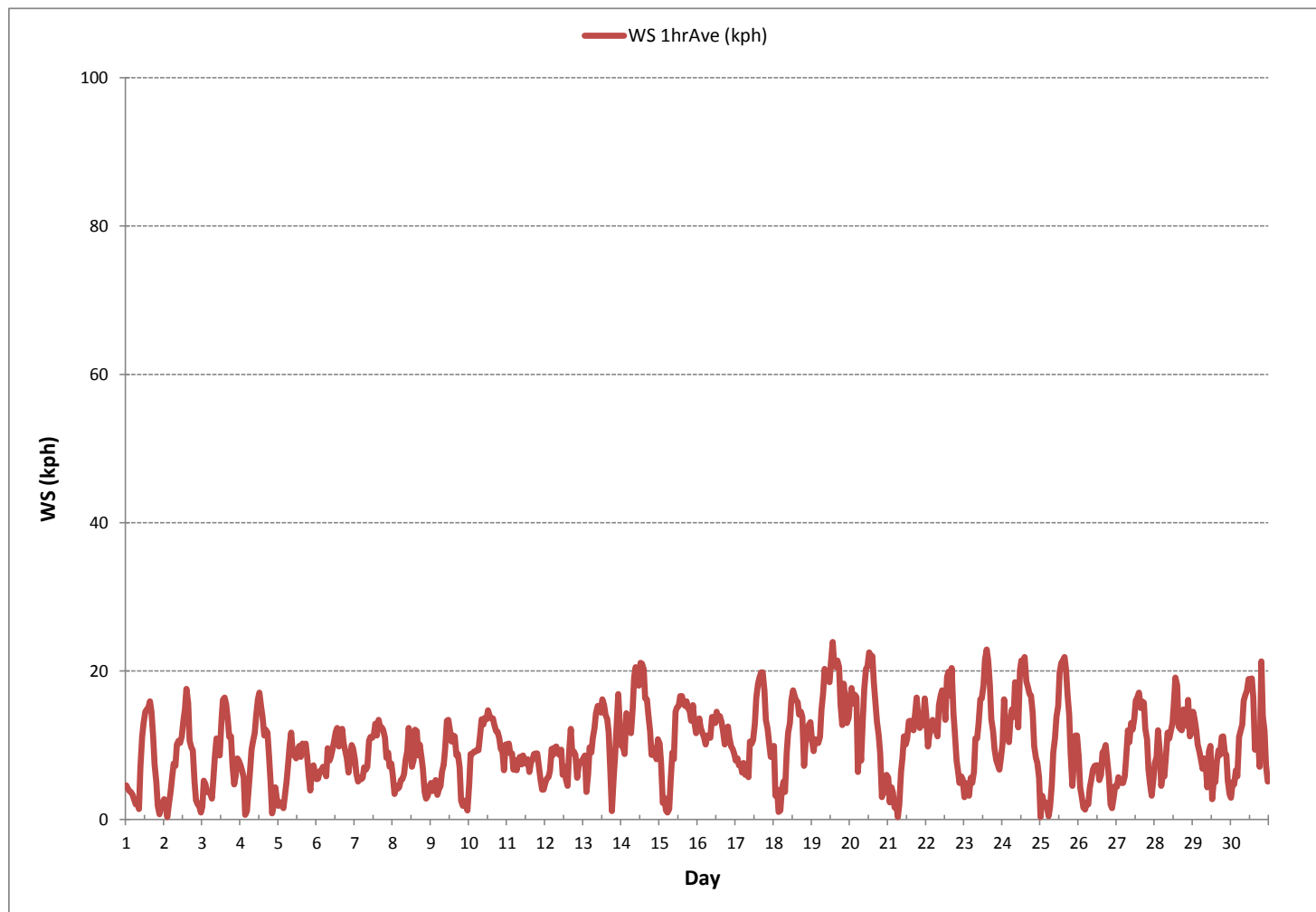
24 HR AVERAGES April 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720				
MINIMUM 1-HR AVERAGE	0.3	kph	@ HOUR	2	ON DAY 2
MAXIMUM 1-HR AVERAGE:	23.9	kph	@ HOUR	13	ON DAY 19
MAXIMUM 24-HR AVERAGE:	15.7	kph			ON DAY 19
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	5.0		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	2.7	kph

WIND SPEED Hourly Averages (WS kph)



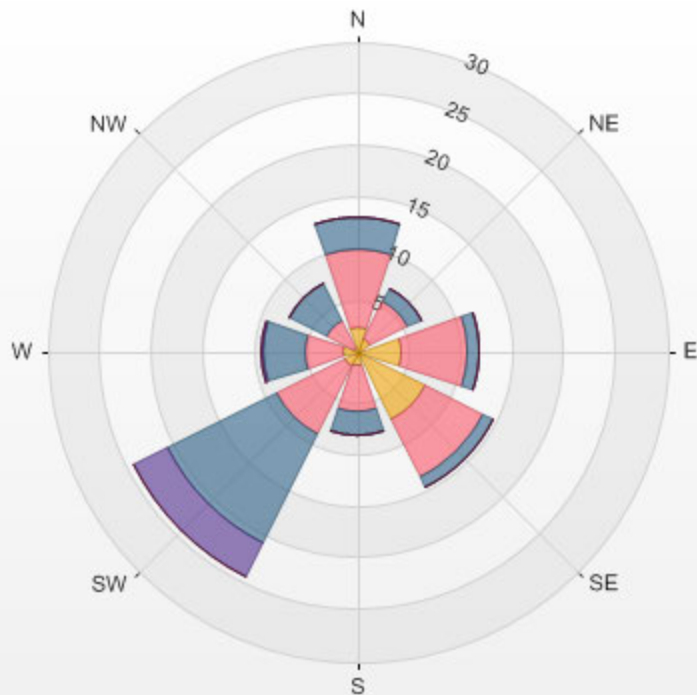
Wind: PRAMP_842
 Monitor: WSP [kph]
 Monthly: 18/04
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 4.03%

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	2.5	7.5	3.1	0.0	0.0	0.0	13.1
NE	1.4	4.0	1.5	0.0	0.0	0.0	7.0
E	4.2	6.5	1.1	0.0	0.0	0.0	11.8
SE	7.4	6.1	1.3	0.0	0.0	0.0	14.7
S	1.4	4.4	2.4	0.0	0.0	0.0	8.2
SW	1.5	7.4	11.8	3.6	0.0	0.0	24.3
W	1.4	3.8	4.0	0.3	0.0	0.0	9.5
NW	0.6	2.8	4.0	0.1	0.0	0.0	7.5
Summary	20.3	42.5	29.2	4.0	0.0	0.0	96.0

%	Icon	Classes (kph)
20		1.8-6.0
43		6.0-12.0
29		12.0-20.0
4		20.0-29.0
0		29.0-39.0
0		>39.0

PRAMP_842 2018/04/01 00:00 - 2018/04/30 23:00 Calm: 4.03% Calm Wind Avg Speed: 1.17(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b 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	SE	SE	SE	SE	ESE	ESE	ESE	SSW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	WNW	W	NNW	ENE	E	NW	24
2	ENE	ENE	NNW	N	NNW	N	N	N	N	NNE	NNE	N	NW	NW	NW	NW	NNW	NNW	NNE	NNE	ENE	E	E	N	N	24
3	ENE	ENE	ENE	NE	NE	ENE	N	N	NNE	NNE	NNE	N	NW	NW	NW	NW	NW	NW	NNW	N	NNE	NNE	NE	N	N	24
4	NE	ENE	ENE	NE	NE	N	N	N	NNW	NNW	NNW	NW	NW	NW	NW	NW	SW	SW	SW	WSW	NNW	NNW	N	N	NW	24
5	N	N	N	NW	N	N	N	NNE	N	NNE	N	N	N	N	N	N	NNW	NNW	NNW	N	ENE	E	E	ENE	N	24
6	ENE	ENE	E	E	E	E	E	E	E	E	E	E	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	E	24
7	ESE	ESE	ESE	E	E	E	E	ESE	ESE	ESE	SE	SE	SE	SE	E	E	ESE	ESE	ESE	SE	SE	ESE	ESE	ESE	ESE	24
8	ESE	ESE	ESE	E	E	E	ESE	SE	SSE	WSW	WSW	WSW	W	W	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SE	SE	24
9	SSE	SSE	SE	SE	SE	SE	SSE	S	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	ENE	E	E	SW	24
10	ESE	E	E	E	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	ESE	ENE	24
11	E	E	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	ENE	NE	ENE	ENE	E	E	E	E	ENE	24
12	ENE	ENE	ENE	E	E	E	E	E	ESE	ESE	ESE	ESE	E	ESE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	ESE	24
13	SE	SE	SSE	SE	SSE	SSE	SSE	S	S	S	SSW	SW	SW	SW	SW	SW	WSW	W	WNW	ESE	ESE	SE	SSE	SSE	S	24
14	SSE	SE	SE	SSW	S	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	S	SSW	SSW	24
15	SSW	SW	S	SW	SW	S	N	N	N	NNW	NW	NW	NNW	NNW	N	N	NNE	N	N	NNE	NNE	NNE	N	N	N	24
16	N	NNE	NNE	NNE	N	N	N	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	24
17	NNE	NNE	N	N	N	NNW	NNW	NW	WNW	NW	W	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	W	24
18	SW	SW	WSW	WSW	ESE	SE	SE	SSE	SSW	SW	SSW	SSW	SW	SW	WSW	WSW	SW	SW	SW	SSW	SSE	S	S	S	SSW	24
19	SSW	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SSW	24
20	SW	SW	SW	SSW	SSW	SSE	SSW	S	SSW	SSW	SSW	SSW	SSW	SW	SSW	SW	SW	SW	SSW	SSW	SE	SE	ESE	SE	SSW	24
21	SE	E	ENE	NNE	ENE	E	E	E	SSE	WSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	24
22	W	W	W	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	W	W	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	S	W	24
23	SSE	SSE	SSE	SE	SE	SSE	SSE	SSW	SSW	SW	SW	SW	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SSE	SE	SE	SSE	SSW	24
24	SSW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	W	W	SW	24
25	NE	WSW	WSW	W	WSW	SW	SSW	SW	WSW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	WSW	WSW	WSW	S	SW	SW	SW	SW	24
26	SW	SW	ENE	SE	SE	ESE	ESE	WSW	WSW	W	NW	W	WSW	WSW	WSW	SW	SW	SW	SW	SSW	ESE	ESE	SE	SE	SW	24
27	SE	SE	ESE	ESE	ESE	ESE	SE	SSE	SSW	SSW	S	SSW	WSW	SW	SW	SSW	SSW	SW	SSW	SSW	S	SSE	SE	SE	SSW	24
28	SE	SE	SSE	SSE	SE	SSE	SSE	SSW	SW	SW	SSW	SW	WSW	W	W	NW	NW	NNW	N	N	N	N	N	N	W	24
29	NNW	NNW	NNW	NNW	N	N	NNW	N	NNE	NNE	NW	NW	WNW	SW	WNW	SW	WSW	W	WSW	SW	SSW	SSW	S	SE	WNW	24
30	SE	SSE	SSE	SSE	SE	SSE	SSE	S	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WNW	NW	WNW	NNW	NNW	N	N	NW	SW	24

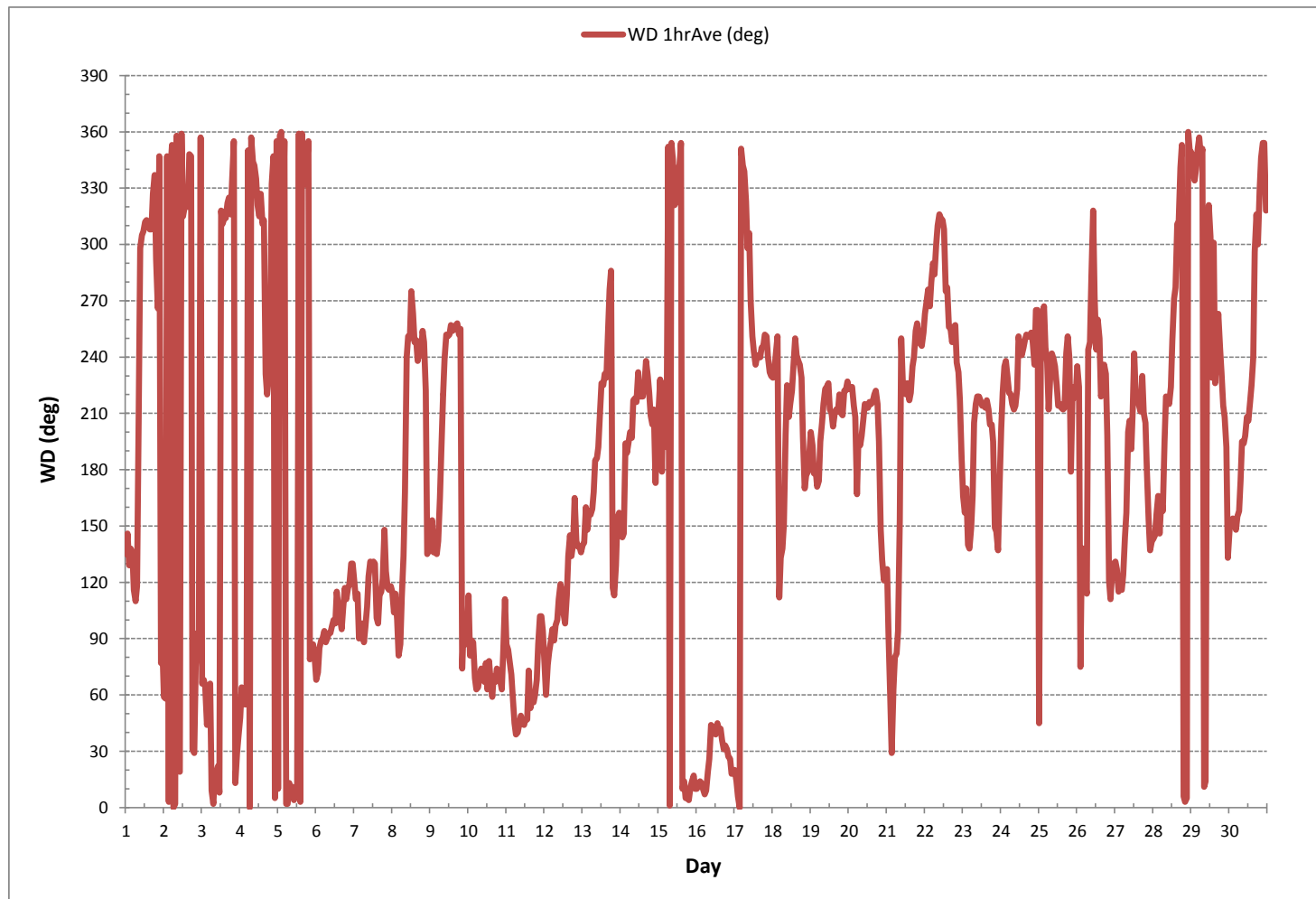
STATUS FLAG CODES

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:	August 30, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	97		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	227 (SW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

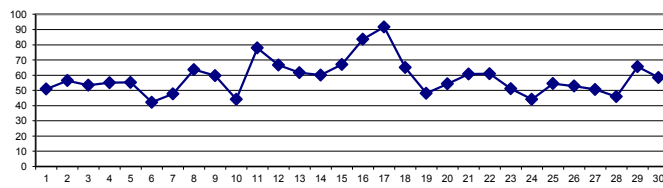
RELATIVE HUMIDITY Hourly Averages (RH %)

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

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

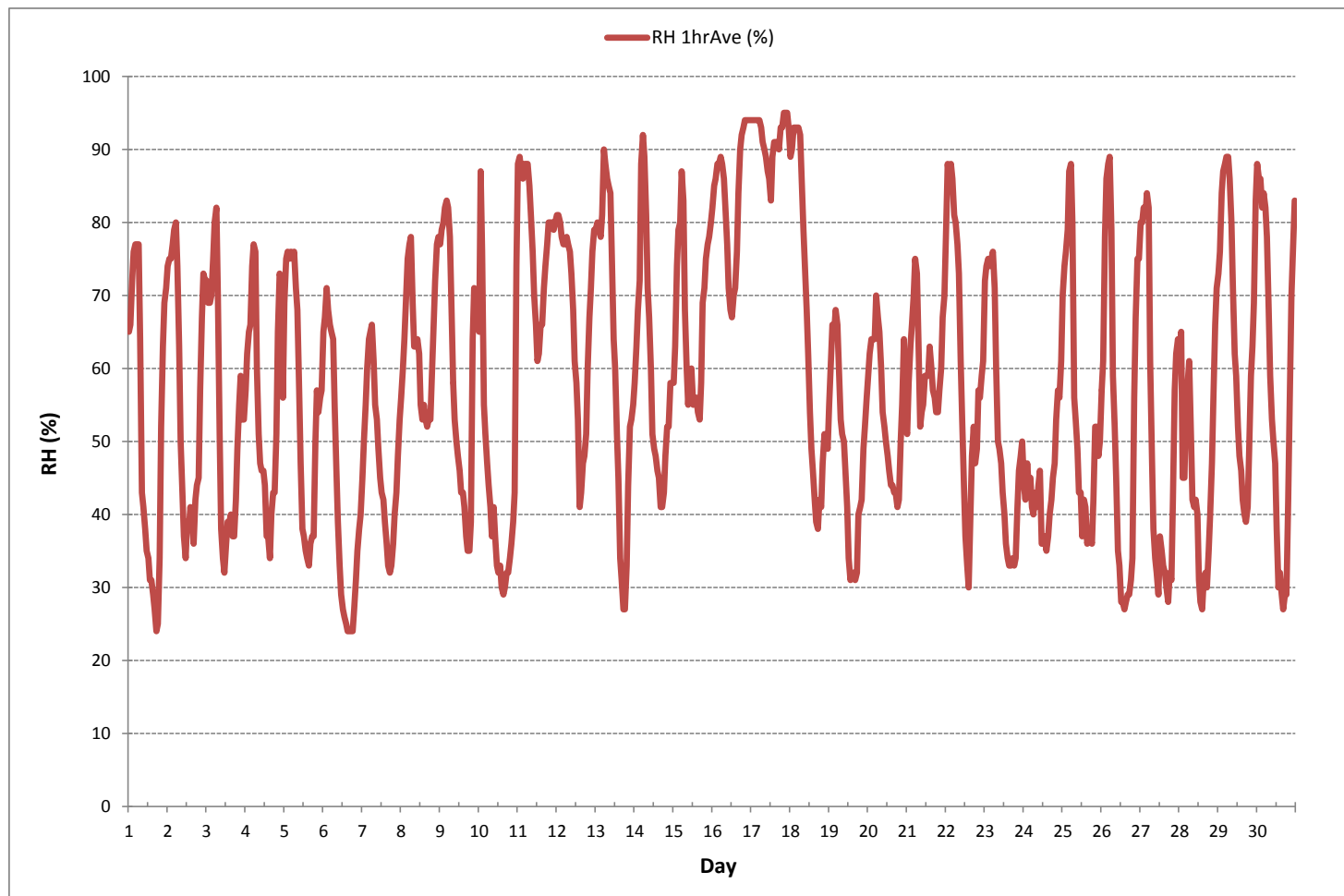
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	24	%	@ HOUR	17	ON DAY	1
MAXIMUM 1-HR AVERAGE:	95	%	@ HOUR	20	ON DAY	17
MAXIMUM 24-HR AVERAGE:	92	%			ON DAY	17
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	19				MONTHLY AVERAGE:	58 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

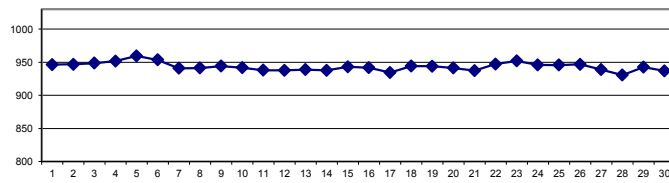
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	951	951	950	950	949	949	949	948	947	947	946	946	946	945	944	944	944	943	943	943	944	944	944	945	943	951	946	24
2	945	945	945	945	946	946	946	947	946	947	947	947	947	947	947	947	947	947	947	947	948	949	949	949	945	949	947	24
3	949	949	949	949	949	950	950	950	949	949	950	949	949	949	948	948	948	947	947	947	948	948	948	948	947	950	949	24
4	949	949	949	950	950	951	952	952	951	952	952	952	952	952	952	952	952	952	952	952	953	954	955	955	949	955	952	24
5	956	957	957	957	958	958	959	960	960	960	960	960	960	961	960	960	960	959	959	960	961	961	961	961	956	961	959	24
6	960	960	960	959	959	958	958	957	956	955	954	954	953	952	951	951	950	949	949	948	948	948	948	948	948	960	954	24
7	947	947	946	946	946	945	944	943	941	941	940	940	940	939	939	938	937	937	937	937	937	937	938	938	937	947	941	24
8	938	938	939	939	939	940	940	940	940	940	941	941	942	942	942	942	943	943	943	943	944	944	945	945	938	945	941	24
9	945	945	946	945	946	945	945	945	945	945	945	945	945	944	944	944	944	943	943	943	943	943	943	943	943	946	944	24
10	943	943	944	943	943	944	944	944	945	945	945	944	944	943	942	941	940	939	938	938	938	938	938	938	938	945	942	24
11	938	937	937	937	937	937	937	938	938	938	938	939	939	939	939	938	938	938	938	938	938	938	938	938	937	939	938	24
12	937	937	937	937	937	937	936	937	937	937	937	937	938	938	938	938	938	938	938	939	939	939	939	939	936	939	938	24
13	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	939	939	939	938	938	937	936	936	936	936	940	939	24
14	935	935	936	936	937	937	937	938	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	935	939	938	24
15	940	940	940	940	941	941	941	942	942	943	943	943	943	943	944	944	944	945	945	945	946	946	946	946	940	946	943	24
16	946	946	946	946	946	946	945	945	944	944	944	943	942	942	941	940	939	939	938	937	937	936	936	935	935	946	942	24
17	934	933	933	932	932	932	932	932	933	932	933	933	934	934	934	935	935	936	936	937	937	938	938	938	932	938	934	24
18	939	940	941	941	942	943	943	943	944	944	945	945	945	945	946	946	946	946	946	946	946	946	946	946	939	946	944	24
19	946	946	946	946	946	946	946	946	946	946	945	945	944	944	943	943	942	942	942	941	940	941	941	941	940	946	944	24
20	941	941	941	941	941	941	942	942	942	942	942	943	942	942	942	942	942	941	941	941	941	941	940	940	940	943	941	24
21	940	939	938	938	937	936	936	936	936	936	936	937	936	937	937	937	937	938	938	938	939	939	939	939	936	940	937	24
22	940	941	942	942	943	944	945	946	946	947	948	948	949	949	949	950	950	950	951	951	951	951	951	952	940	952	947	24
23	952	952	952	953	953	953	953	954	954	954	954	954	953	953	952	952	951	951	950	950	949	949	949	949	949	954	952	24
24	949	949	948	948	948	948	947	947	947	946	946	946	946	945	945	945	944	944	944	943	944	944	944	945	943	949	946	24
25	945	946	946	946	947	947	947	948	948	948	947	947	947	946	945	945	945	944	944	944	944	944	944	943	943	948	946	24
26	944	944	945	945	946	947	947	948	949	949	949	949	949	948	948	948	947	947	946	946	946	946	945	945	944	949	947	24
27	945	944	944	944	943	943	942	942	941	941	940	939	938	938	937	937	936	935	935	934	934	934	933	933	933	945	939	24
28	932	931	931	931	930	930	930	930	930	929	929	929	928	928	928	928	928	929	930	931	932	934	936	937	928	937	931	24
29	938	939	940	941	942	942	943	944	944	945	945	945	945	944	944	944	943	943	943	943	943	943	942	942	938	945	943	24
30	942	941	941	940	940	940	939	939	938	938	937	936	935	934	933	933	932	932	932	934	935	936	937	937	932	942	937	24
HOURLY MAX	960	960	960	959	959	958	959	960	960	960	960	960	960	961	960	960	960	959	959	960	961	961	961	961				
HOURLY AVG	944	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	943	942	942	942	943	943	943	943				

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



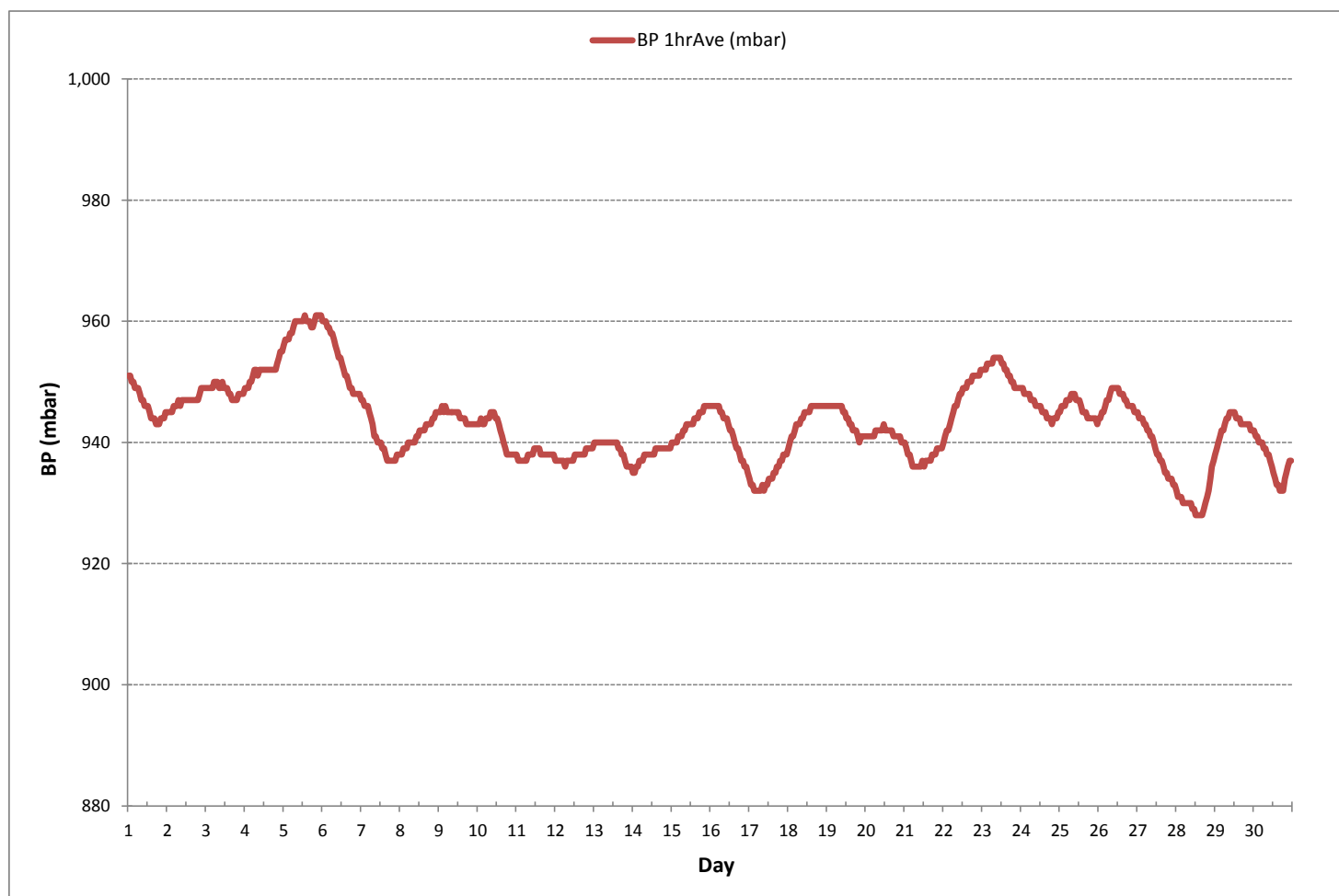
MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	928	mbar	@ HOUR	12	ON DAY	28
MAXIMUM 1-HR AVERAGE:	961	mbar	@ HOUR	13	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:	943	mbar
---------------------	---	--	------------------	-----	------

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

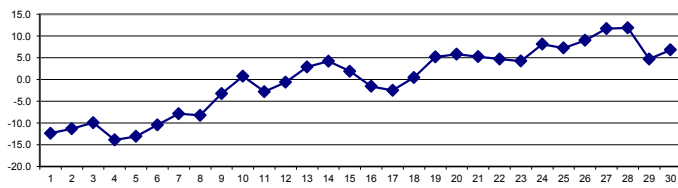
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	-19.2	-20.3	-22.7	-23.6	-23.7	-24.5	-25.3	-20.8	-12.1	-9.2	-6.7	-5.0	-4.1	-3.0	-2.4	-2.3	-2.3	-1.7	-1.8	-6.1	-10.4	-14.3	-16.5	-18.3	-25.3	-1.7	-12.3	24
2	-20.1	-20.2	-21.4	-22.1	-21.2	-18.5	-16.3	-13.3	-9.6	-7.4	-4.8	-3.5	-4.6	-3.8	-3.8	-3.5	-2.7	-4.6	-5.5	-6.5	-11.1	-14.6	-16.4	-15.3	-22.1	-2.7	-11.3	24
3	-14.5	-13.9	-12.6	-12.0	-12.3	-15.2	-17.5	-12.9	-9.1	-7.0	-5.6	-4.2	-4.9	-5.8	-5.5	-5.4	-4.8	-5.2	-7.1	-9.6	-11.9	-13.8	-13.3	-13.8	-17.5	-4.2	-9.9	24
4	-15.0	-17.0	-18.6	-20.0	-22.8	-23.9	-20.4	-15.8	-13.3	-11.6	-10.7	-10.0	-9.4	-7.6	-6.9	-5.9	-7.9	-8.4	-8.5	-11.4	-15.4	-18.3	-18.1	-16.5	-23.9	-5.9	-13.9	24
5	-20.1	-21.5	-22.2	-21.9	-21.5	-17.0	-16.6	-15.3	-14.8	-12.6	-10.2	-7.6	-6.8	-6.0	-5.5	-4.8	-5.8	-6.7	-6.9	-10.9	-14.0	-14.1	-15.1	-16.1	-22.2	-4.8	-13.1	24
6	-18.7	-19.2	-20.4	-19.6	-18.9	-18.8	-18.6	-16.0	-12.8	-9.5	-7.3	-6.1	-4.6	-4.3	-3.0	-2.6	-2.4	-2.5	-3.6	-5.4	-7.3	-8.9	-9.6	-10.6	-20.4	-2.4	-10.4	24
7	-11.8	-12.6	-13.8	-15.3	-16.2	-16.1	-16.6	-14.8	-11.3	-8.5	-6.5	-4.7	-3.2	-2.4	-1.1	-0.9	-1.1	-1.4	-2.0	-3.9	-4.9	-5.3	-6.5	-7.7	-16.6	-0.9	-7.9	24
8	-8.8	-10.4	-11.8	-14.3	-16.2	-16.9	-16.6	-11.8	-7.9	-6.7	-6.7	-6.0	-4.1	-3.3	-3.5	-2.8	-2.3	-2.6	-3.1	-4.8	-6.8	-8.4	-11.1	-10.8	-16.9	-2.3	-8.2	24
9	-10.1	-10.7	-11.1	-11.1	-12.1	-11.5	-9.8	-6.9	-3.5	-2.2	-1.2	-0.2	0.4	1.8	2.7	3.1	3.8	4.2	3.9	3.2	-1.0	-3.4	-3.6	-2.5	-12.1	4.2	-3.2	24
10	-1.0	-1.2	-1.5	-1.4	-2.0	-2.3	-1.9	-1.6	-0.3	1.0	3.1	3.6	4.6	3.9	4.6	4.9	4.4	2.9	2.1	1.0	0.0	-0.9	-1.2	-2.8	-2.8	4.9	0.8	24
11	-4.0	-4.3	-4.5	-4.7	-4.9	-5.3	-5.6	-5.4	-4.8	-3.4	-2.2	-0.6	0.4	0.5	-0.2	0.1	-1.0	-1.4	-2.0	-2.6	-2.8	-2.7	-2.7	-2.8	-5.6	0.5	-2.8	24
12	-2.9	-3.2	-3.7	-3.9	-3.8	-3.8	-3.8	-3.5	-2.8	-1.8	-0.8	0.6	1.5	2.9	6.1	4.9	3.8	3.7	3.1	1.0	-0.9	-1.8	-2.7	-3.0	-3.9	6.1	-0.6	24
13	-2.7	-2.7	-2.3	-2.3	-2.0	-2.3	-1.9	-1.2	-0.4	0.4	2.3	4.1	4.7	6.0	6.9	7.8	7.9	9.3	9.5	7.1	6.1	5.3	5.1	4.4	-2.7	9.5	2.9	24
14	3.5	2.7	1.8	2.2	1.6	1.5	1.7	2.4	3.4	3.9	4.8	5.7	6.1	6.5	6.9	7.1	7.4	7.3	7.0	5.5	4.1	3.5	2.0	2.8	1.5	7.4	4.2	24
15	2.8	1.2	-1.6	-2.3	-2.9	-4.8	-3.2	2.0	5.3	7.0	6.1	6.1	7.2	6.9	6.4	6.1	5.7	4.2	1.1	0.0	-1.3	-1.9	-1.9	-2.1	-4.8	7.2	1.9	24
16	-2.5	-3.0	-3.4	-3.6	-3.8	-3.8	-3.9	-3.4	-2.3	-1.4	-0.1	0.3	0.8	0.7	1.0	1.0	0.4	-0.1	-0.8	-1.5	-1.9	-2.1	-2.2	-2.2	-3.9	1.0	-1.6	24
17	-2.1	-2.2	-2.3	-2.5	-2.7	-3.1	-3.0	-2.6	-2.3	-2.3	-2.2	-2.1	-1.6	-1.9	-2.1	-2.6	-2.6	-2.7	-3.0	-2.9	-2.8	-2.8	-2.6	-2.7	-3.1	-1.6	-2.5	24
18	-3.5	-5.0	-6.8	-6.9	-8.3	-8.0	-6.8	-4.4	-1.0	0.7	2.1	2.7	4.4	5.2	5.6	6.3	6.6	6.5	5.7	5.3	3.4	2.3	2.3	2.5	-8.3	6.6	0.5	24
19	2.1	1.4	0.1	0.4	-0.4	-0.2	1.2	3.1	4.1	4.6	5.9	7.4	9.2	9.9	9.7	9.5	9.8	9.4	7.5	7.3	7.2	5.9	5.1	4.3	-0.4	9.9	5.2	24
20	4.1	3.9	3.5	3.4	3.3	1.4	2.3	3.1	4.7	6.3	6.7	7.4	8.0	8.4	8.6	8.6	8.9	8.8	9.0	8.7	6.6	5.4	3.6	5.5	1.4	9.0	5.8	24
21	5.6	4.5	3.3	2.4	1.8	1.2	1.9	3.6	6.0	5.3	5.2	5.3	7.1	7.9	7.6	8.0	7.9	7.8	7.3	6.7	6.0	5.3	4.3	3.9	1.2	8.0	5.2	24
22	3.1	2.3	2.9	2.1	2.0	2.5	2.3	2.5	3.0	5.6	6.8	7.9	8.9	8.1	8.5	7.5	6.4	6.0	6.3	6.1	4.1	3.7	2.5	1.7	1.7	8.9	4.7	24
23	-0.6	-1.4	-2.0	-2.0	-2.4	-2.7	-1.7	1.5	3.9	4.4	5.0	6.1	7.1	8.1	8.8	9.5	9.8	9.4	9.7	9.3	7.2	5.6	4.8	4.5	-2.7	9.8	4.2	24
24	6.1	6.5	5.3	5.7	5.4	6.1	7.0	6.7	7.2	7.1	7.5	10.4	10.9	11.1	11.9	12.0	11.7	10.8	10.0	9.4	7.7	6.4	6.6	5.3	5.3	12.0	8.1	24
25	3.1	2.1	1.5	0.8	-1.2	-1.8	1.1	6.1	6.3	7.7	8.9	10.0	10.6	11.0	11.7	12.1	12.5	12.8	13.2	11.9	8.3	7.9	8.9	8.8	-1.8	13.2	7.3	24
26	7.0	5.5	0.8	-0.8	-1.3	-1.5	1.6	7.2	8.8	11.4	14.5	14.7	15.3	16.6	16.8	16.7	16.6	16.4	16.2	14.6	8.8	5.1	2.8	2.0	-1.5	16.8	9.0	24
27	0.8	0.7	-0.4	-0.3	-0.9	0.1	5.3	9.7	13.6	15.1	16.9	18.9	18.8	19.1	19.8	20.6	21.3	21.4	20.4	19.0	14.6	10.7	9.0	7.4	-0.9	21.4	11.7	24
28	7.0	5.7	10.0	9.3	6.7	6.2	6.1	9.7	12.1	12.8	13.9	15.8	17.9	18.9	18.7	18.1	17.2	17.7	16.0	13.9	10.7	8.5	6.7	5.9	5.7	18.9	11.9	24
29	4.8	3.6	1.9	1.5	1.3	1.3	1.4	2.0	3.0	4.4	6.3	6.2	7.1	7.5	8.4	8.6	9.4	9.3	8.6	7.2	4.9	3.8	2.0	-1.6	-1.6	9.4	4.7	24
30	-2.4	-1.8	-1.9	-1.2	-1.6	-1.1	0.5	3.7	6.2	8.2	9.8	10.9	12.9	14.1	14.6	15.0	15.6	14.4	14.0	11.2	8.8	6.1	4.7	3.0	-2.4	15.6	6.8	24
HOURLY MAX	7.0	6.5	10.0	9.3	6.7	6.2	7.0	9.7	13.6	15.1	16.9	18.9	18.8	19.1	19.8	20.6	21.3	21.4	20.4	19.0	14.6	10.7	9.0	8.8				
HOURLY AVG	-3.7	-4.4	-5.1	-5.5	-6.0	-6.1	-5.2	-2.9	-0.7	0.7	2.0	3.1	4.0	4.6	5.0	5.2	5.1	4.8	4.2	2.8	0.5	-0.9	-1.8	-2.2				

STATUS FLAG CODES

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

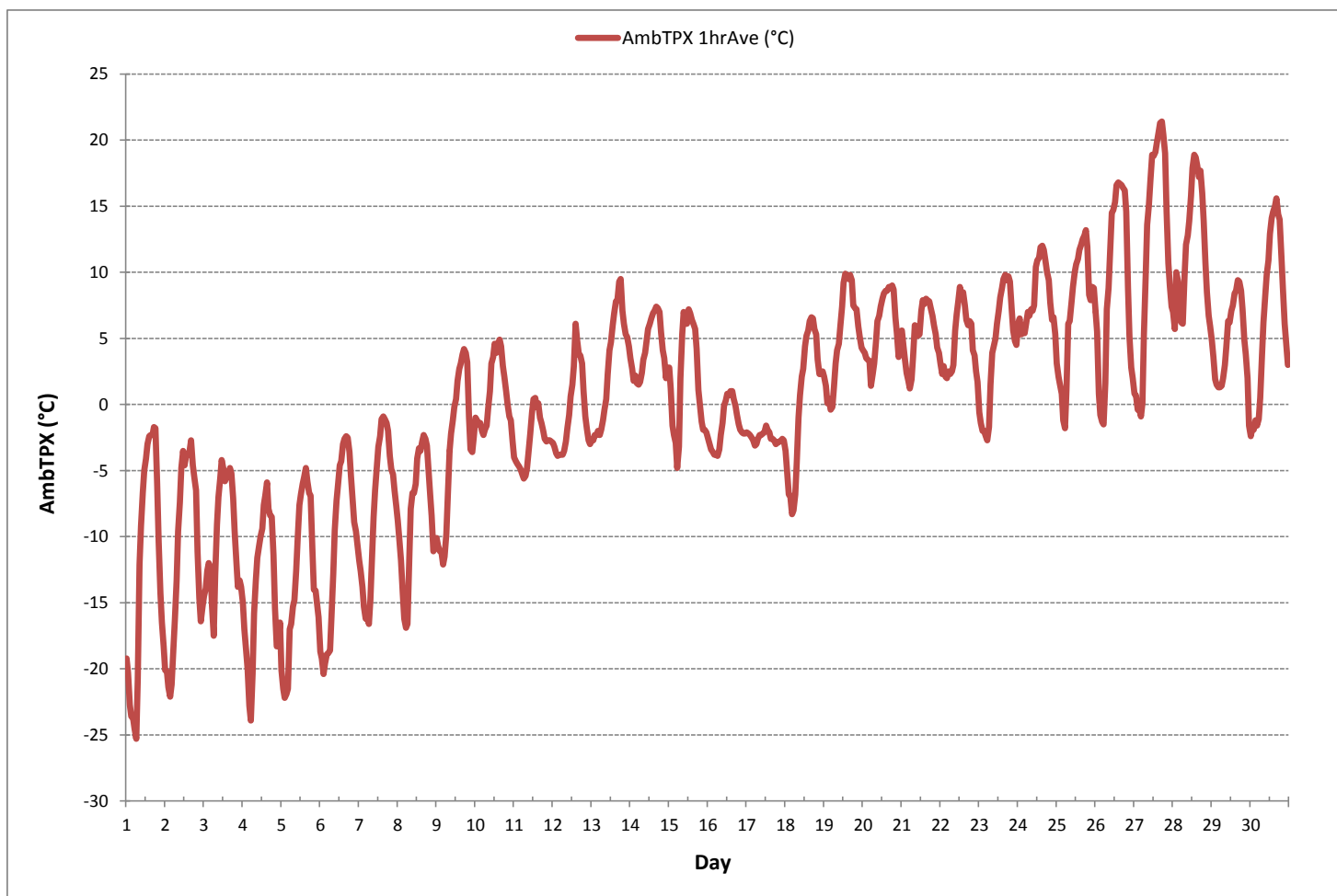
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-25.3	°C	@ HOUR	6	ON DAY	1
MAXIMUM 1-HR AVERAGE:	21.4	°C	@ HOUR	17	ON DAY	27
MAXIMUM 24-HR AVERAGE:	11.9	°C			ON DAY	28
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	8.9				MONTHLY AVERAGE:	-0.1 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

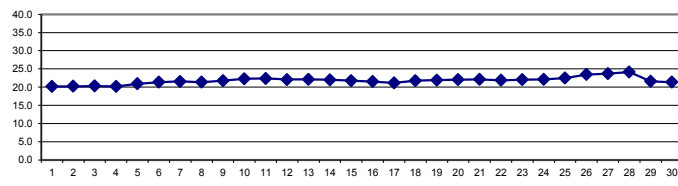
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	20.0	20.2	19.5	20.2	19.4	20.0	19.6	19.7	20.1	19.5	19.7	20.1	20.0	19.6	20.4	20.2	21.1	20.7	21.1	21.0	20.7	20.5	20.3	20.2	19.4	21.1	20.2	24
2	19.8	20.2	20.2	19.7	20.0	20.3	19.7	20.2	20.0	20.0	19.9	20.3	20.2	20.0	20.1	20.3	20.4	20.8	20.9	20.7	20.8	20.1	20.4	20.4	19.7	20.9	20.2	24
3	20.4	20.4	20.3	20.4	20.3	20.4	20.1	20.0	20.1	20.3	20.3	20.3	20.2	19.9	20.3	19.9	20.4	20.6	20.9	20.8	20.5	20.2	20.3	20.4	19.9	20.9	20.3	24
4	20.5	20.1	19.9	20.1	20.2	19.3	20.0	20.0	19.6	19.8	19.2	19.5	19.8	19.6	19.9	19.9	20.7	20.5	21.0	21.1	21.0	20.8	20.7	21.1	19.2	21.1	20.2	24
5	20.8	20.9	20.3	20.9	20.6	21.0	20.6	21.0	20.3	20.9	20.5	20.3	20.6	20.7	21.0	21.1	21.4	21.4	21.8	21.2	21.2	21.2	21.0	20.9	20.3	21.8	20.9	24
6	21.1	20.8	20.6	21.1	20.7	21.2	20.7	20.9	20.8	20.4	20.5	20.5	20.9	21.5	21.8	22.3	22.6	22.8	22.7	22.2	21.8	21.5	21.4	21.5	20.4	22.8	21.3	24
7	21.3	21.1	21.1	21.2	20.9	20.9	21.1	20.8	20.9	20.4	20.8	20.8	21.2	21.7	22.4	22.6	23.1	23.2	23.0	22.4	21.7	21.8	21.7	21.4	20.4	23.2	21.6	24
8	21.4	21.3	21.3	21.2	21.1	20.9	21.1	20.9	20.9	20.8	20.7	20.9	20.8	21.3	21.4	21.6	22.2	22.5	22.4	22.0	21.6	21.5	21.3	21.2	20.7	22.5	21.3	24
9	21.1	21.2	21.2	21.4	21.3	21.4	21.2	21.2	21.1	20.9	20.7	21.0	21.6	21.9	22.6	22.1	22.6	22.6	22.9	23.2	22.6	22.0	21.9	22.0	20.7	23.2	21.7	24
10	22.0	21.9	22.0	22.1	21.8	22.1	21.8	21.9	22.0	22.0	22.0	22.4	22.6	22.7	22.7	22.8	22.8	23.2	22.4	21.9	22.3	22.5	22.3	22.1	21.8	23.2	22.3	24
11	22.5	22.3	21.9	22.4	22.1	21.7	22.1	21.7	22.0	23.8	24.2	23.9	24.0	23.7	24.0	23.4	21.3	20.7	21.6	21.4	21.3	21.4	21.7	21.4	20.7	24.2	22.4	24
12	21.3	21.5	21.9	21.3	21.3	21.9	21.5	21.4	22.0	21.9	21.5	22.2	22.2	22.6	22.7	22.9	23.0	23.4	23.4	23.2	22.0	21.8	21.6	21.6	21.3	23.4	22.1	24
13	21.5	21.9	21.7	21.5	21.5	21.8	21.8	21.6	21.6	21.6	21.0	21.2	21.6	22.3	22.8	22.3	23.1	23.3	23.7	23.5	23.1	22.8	22.3	21.9	21.0	23.7	22.1	24
14	21.5	22.1	21.9	21.2	21.8	21.7	21.4	21.0	21.6	20.5	21.8	21.7	22.1	22.4	22.4	22.5	22.9	22.9	23.2	23.4	22.8	22.1	21.5	21.8	20.5	23.4	22.0	24
15	21.5	21.5	21.6	21.6	21.5	21.3	21.9	21.4	21.2	21.2	21.2	21.5	22.0	22.2	22.7	22.3	22.8	23.2	22.7	21.7	21.4	21.4	21.2	21.4	21.2	23.2	21.8	24
16	21.6	21.2	21.2	21.7	21.0	21.7	21.2	21.1	21.7	21.6	21.8	21.6	21.6	21.9	21.5	22.0	21.5	21.5	21.7	21.5	21.4	21.7	21.4	21.3	21.0	22.0	21.5	24
17	21.2	21.8	21.4	21.2	21.3	21.8	21.3	21.3	21.2	21.6	21.0	21.1	21.0	20.8	21.2	20.5	20.8	20.8	20.3	21.1	20.7	21.1	20.9	21.5	20.3	21.8	21.1	24
18	20.7	21.7	20.9	21.8	21.1	21.3	21.6	21.1	21.6	21.1	21.1	20.9	21.1	21.5	22.2	22.6	22.7	22.9	23.0	23.4	22.9	22.0	21.3	21.9	20.7	23.4	21.8	24
19	21.6	21.6	21.7	21.6	21.4	21.5	21.8	21.3	20.9	21.2	21.4	21.9	22.7	22.2	22.0	22.5	23.0	22.7	22.6	22.8	22.5	22.0	21.7	21.2	20.9	23.0	21.9	24
20	21.4	20.8	21.5	21.3	21.5	21.5	21.6	21.4	21.9	21.4	21.5	22.1	22.6	22.2	21.9	22.8	22.3	22.6	22.9	23.1	22.9	22.9	22.6	22.3	20.8	23.1	22.0	24
21	22.2	22.0	21.8	21.4	21.9	21.3	22.0	21.2	21.4	21.6	21.9	22.3	22.9	22.2	22.4	22.5	22.8	22.5	23.1	22.9	22.7	22.3	21.8	21.2	21.2	23.1	22.1	24
22	21.3	21.3	21.6	21.5	21.4	21.3	21.2	21.4	21.4	21.2	21.1	21.3	22.0	22.3	22.7	22.3	22.6	22.9	22.6	23.3	22.9	22.4	21.8	21.7	21.1	23.3	21.9	24
23	21.6	21.6	21.5	21.3	21.8	21.4	21.2	21.3	21.6	21.0	21.2	21.7	22.4	22.4	22.1	22.9	22.5	23.0	23.0	22.8	23.1	22.9	22.5	22.0	21.0	23.1	22.0	24
24	21.6	21.1	21.8	21.3	21.7	21.4	21.0	21.1	21.1	21.2	21.2	22.2	22.8	22.5	22.4	22.8	23.0	22.8	23.0	23.1	23.0	23.0	22.8	22.6	21.0	23.1	22.1	24
25	22.2	21.7	21.8	21.7	21.6	21.5	21.6	21.1	21.2	21.8	22.5	22.3	22.0	22.0	22.3	22.9	23.3	23.7	24.4	24.9	23.7	23.6	23.4	23.2	21.1	24.9	22.5	24
26	23.1	22.8	22.2	21.4	21.8	21.6	21.8	21.1	21.8	22.6	22.7	23.4	24.3	25.1	25.6	25.3	25.3	25.2	25.4	25.5	25.0	23.5	23.5	22.9	21.1	25.6	23.5	24
27	22.2	21.6	21.9	21.8	21.7	21.7	21.9	22.0	22.7	23.4	24.2	25.5	25.1	25.0	24.7	24.7	25.0	25.4	25.3	25.0	25.6	24.7	23.6	23.5	21.6	25.6	23.7	24
28	23.4	23.1	23.0	23.0	22.8	22.5	22.4	22.6	23.1	23.3	23.7	24.5	25.5	25.0	25.7	25.5	25.6	25.6	26.6	26.4	25.3	23.7	23.3	23.4	22.4	26.6	24.1	24
29	23.0	22.4	21.7	21.2	21.9	21.7	21.4	21.6	22.0	21.6	21.7	22.0	22.2	20.9	20.9	21.6	21.5	21.3	21.4	20.9	20.8	21.5	21.4	21.5	20.8	23.0	21.6	24
30	21.6	21.5	22.0	21.7	21.4	21.4	21.4	21.3	20.6	21.1	21.6	21.4	21.1	21.1	21.2	21.4	21.4	21.0	21.0	21.3	20.7	21.9	21.7	21.4	20.6	22.0	21.3	24
HOURLY MAX	23.4	23.1	23.0	23.0	22.8	22.5	22.4	22.6	23.1	23.8	24.2	25.5	25.5	25.1	25.7	25.5	25.6	25.6	26.6	26.4	25.6	24.7	23.6	23.5				
HOURLY AVG	21.5	21.5	21.4	21.3	21.3	21.3	21.3	21.2	21.3	21.3	21.4	21.7	22.0	22.0	22.2	22.3	22.5	22.5	22.7	22.6	22.3	22.0	21.8	21.7				

STATUS FLAG CODES

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

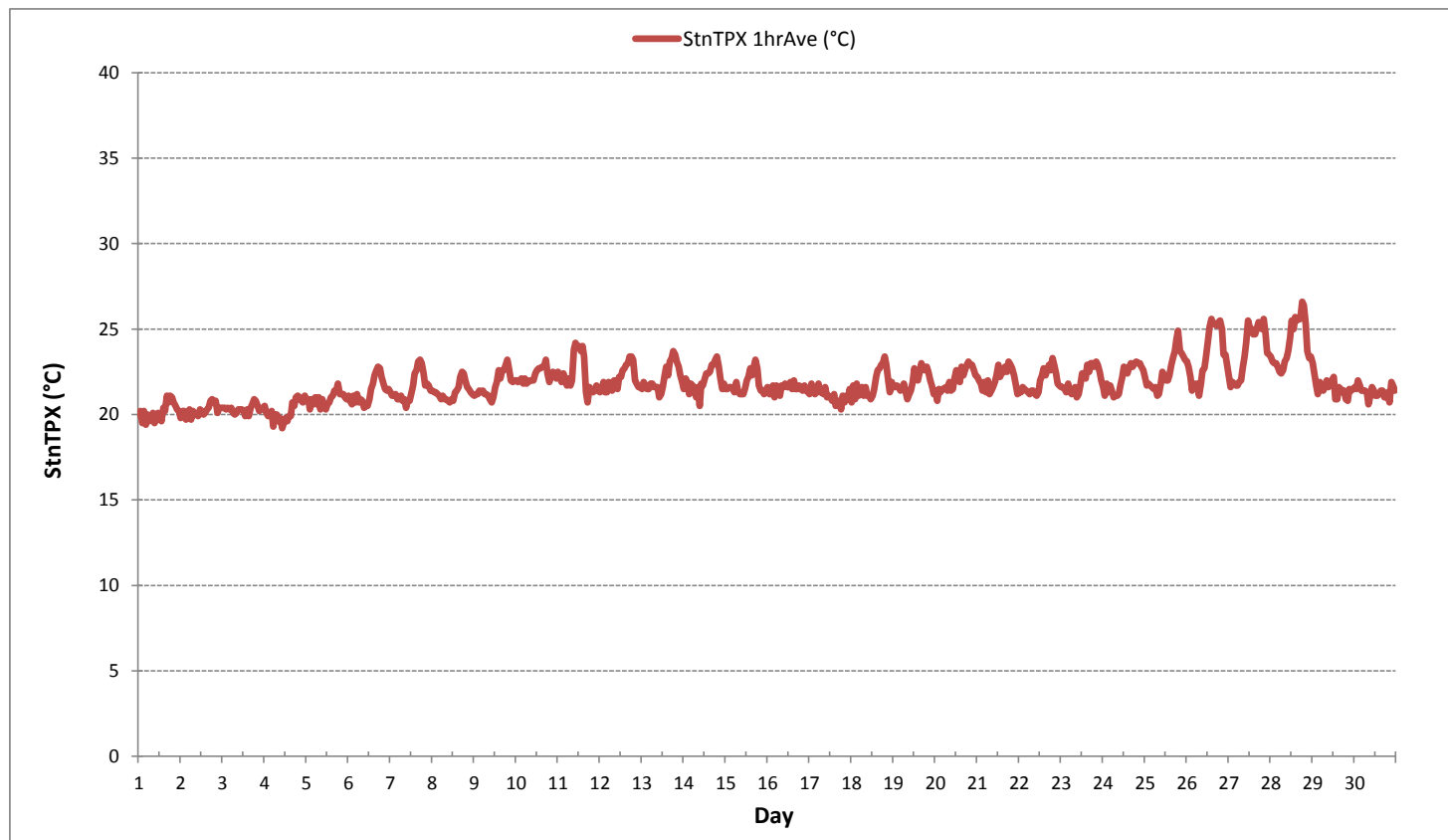
24 HR AVERAGES April 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.2	°C	@ HOUR	10	ON DAY	4
MAXIMUM 1-HR AVERAGE:	26.6	°C	@ HOUR	18	ON DAY	28
MAXIMUM 24-HR AVERAGE:	24.1	°C			ON DAY	28
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	1.2		MONTHLY AVERAGE:		21.8	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



Thermo 43i Sulphur Dioxide Analyzer Calibration

Date:	April 11, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	98	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	842b	Weather Conditions:	Light snow		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	12:12	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	16:01	Cal Gas Expiry Date:	October 24, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		
Analyzer:					
Serial Number/Owner:	835033373 Maxxam	Range ppb:	500		
Last Calibration Date:	March 2, 2018	As Found C.F.:	0.980		
Previous C.F.:	1.001	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. #: LL108015

Cal Gas Conc. (ppm): 47.9

Standard Calibration Points for Ranges	
Point	ppb
High	380
Mid	180
Low	90

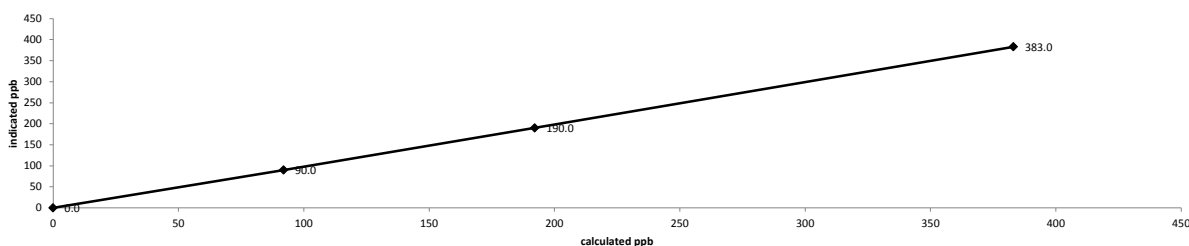
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total			
as found zero	5980	0.00	5980	0.0	0.0	n/a
as found high	5939	47.88	5987	383.1	391.0	0.980
adjusted zero	5980	0.00	5980	0.0	0.0	n/a
adjusted high	5939	47.88	5987	383.1	383.0	1.000
mid	5944	23.94	5968	192.2	190.0	1.011
low	5957	11.46	5968	91.9	90.0	1.022
calibrator zero	5980	0.00	5980	0.0	0.0	n/a
Average C.F. =						1.011

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.999		0.95-1.05
b (Intercept as % of full scale) =	0.24%		± 3% F.S.
% change in C.F. from last cal =	2.13%		± 10%

Thermo 43i Sulphur Dioxide Analyzer Calibration

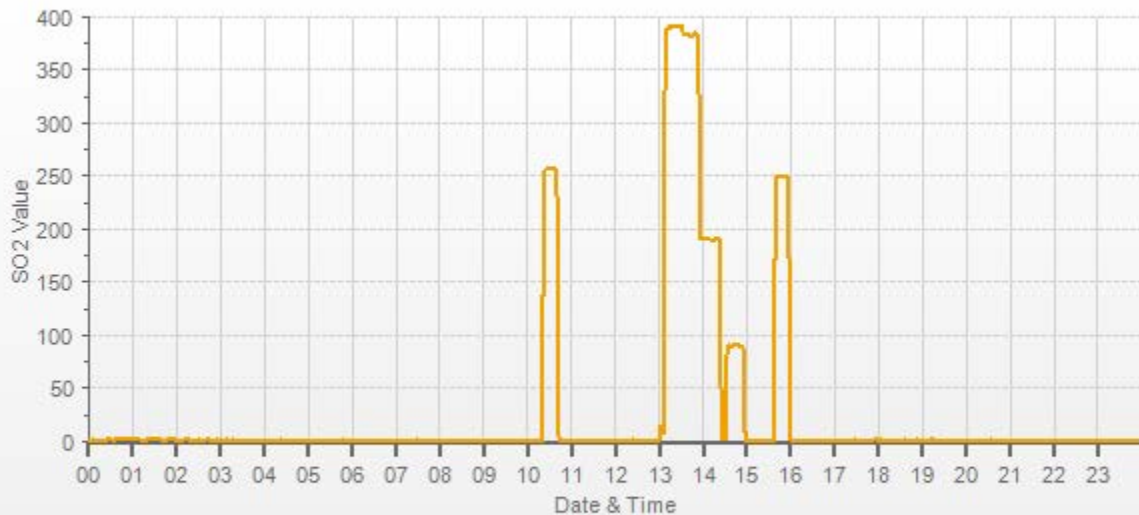


As found:		As left:	
Bkg:	14.2	Bkg:	13.8
Coef:	1.028	Coef:	1.001
Pmt:	-621.2	Pmt:	-621.2
Flash:	887	Flash:	886
Internal:	28.8	Internal:	28.5
Chamber:	45.2	Chamber:	45.0
Perm Oven Gas:	45.00	Perm Oven Gas:	45.00
Perm Oven Heater:	44.09	Perm Oven Heater:	44.08
Pressure:	675.3	Pressure:	675.0
Sample Flow:	0.441	Sample Flow:	0.440
Lamp Intensity:	82	Lamp Intensity:	82
Averaging Time:	120	Averaging Time:	120
Expected Value:	251.0	Expected Value:	250.0

Comments:

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

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



TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	April 11, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	937	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	22	°C
Location/Station Name:	842b	Weather Conditions:	Light snow		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	8:26	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	12:57	Cal Gas Expiry Date:	November 7, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD-Nova CDN101 #553		
Analyzer:					
Serial Number/Owner:	1162460023 Maxxam	Range ppb:	100		
Last Calibration Date:	March 1, 2018	As Found C.F.:	0.999		
Previous C.F.:	1.001	New C.F.:	0.999		

Calibration Standards:	Standard Calibration Points for Ranges	SO2 Scrubber Check (10 minutes):	
Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018	Start/End Time 24 hr.:	09:25 / 09:35
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018	SO2 Analyzer Range:	500
Calibrator ID/Expiry Date:	API id# 829 expires January 31, 2019	Target Concentration (ppb):	380
Cal Gas Cylinder I.D. #:	LL119432	As Found Zero:	0.0
Cal Gas Conc. (ppm):	10.3	Analyzer Response (ppb):	0.0
		Zero Corrected Result (ppb):	0.0

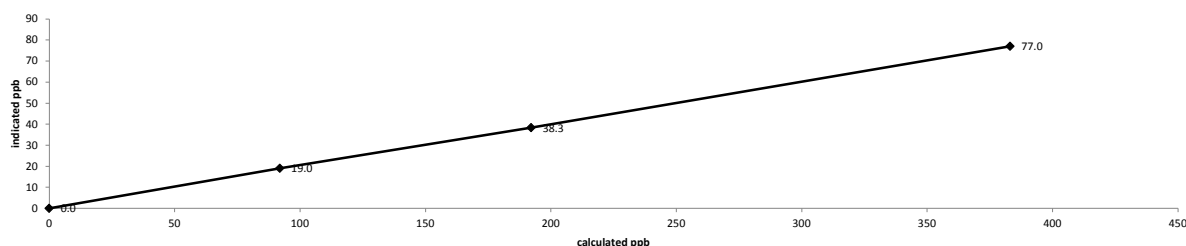
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total			
as found zero	7474	0.00	7474	0.0	0.1	n/a
as found high	7392	55.75	7448	77.0	77.1	0.999
adjusted zero	7474	0.00	7474	0.0	0.0	n/a
adjusted high	7392	55.75	7448	77.0	77.0	0.999
mid	7444	27.83	7472		38.3	1.000
low	7474	13.91	7488	19.1	19.0	1.005
calibrator zero	7474	0.00	7474	0.0	0.1	n/a
Average C.F. =						1.001

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.999		0.95-1.05
b (Intercept as % of full scale) =	0.04%		± 3% F.S.
% change in C.F. from last cal =	0.21%		± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



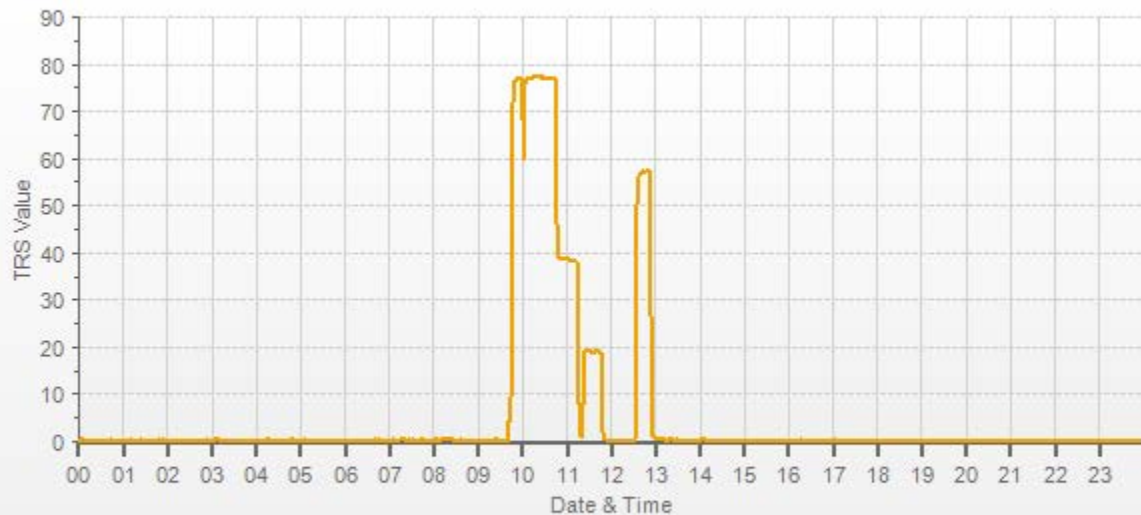
As found:	As left:
Bkg: 2.81	Bkg: 2.82
Coef: 0.886	Coef: 0.883
Pmt: -720.4	Pmt: -720.4
Flash: 988	Flash: 986
Internal: 32.0	Internal: 32.9
Chamber: 44.9	Chamber: 45.0
Perm Oven Gas: 45.01	Perm Oven Gas: 45.00
Perm Oven Heater: 44.12	Perm Oven Heater: 44.12
Pressure: 663.6	Pressure: 663.6
Sample Flow: 0.403	Sample Flow: 0.403
Lamp Intensity: 88	Lamp Intensity: 89
Converter: 850	Converter: 850
Converter Set: 850	Converter Set: 850
Averaging Time: 120	Averaging Time: 120
Expected Value: 56.7	Expected Value: 57.2

Comments:

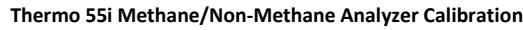
The analyzer sample inlet filter was changed. The analyzer cooling fan filter(s) were cleaned. The manifold blower was found to be working normally.

The As-Found High point was interrupted by daily zero/span. The As-Found High Point was restarted.

TRS[ppb] Station: PRAMP_842 Daily: 18/04/11 Type: AVG 1 Min. [1 Min.]

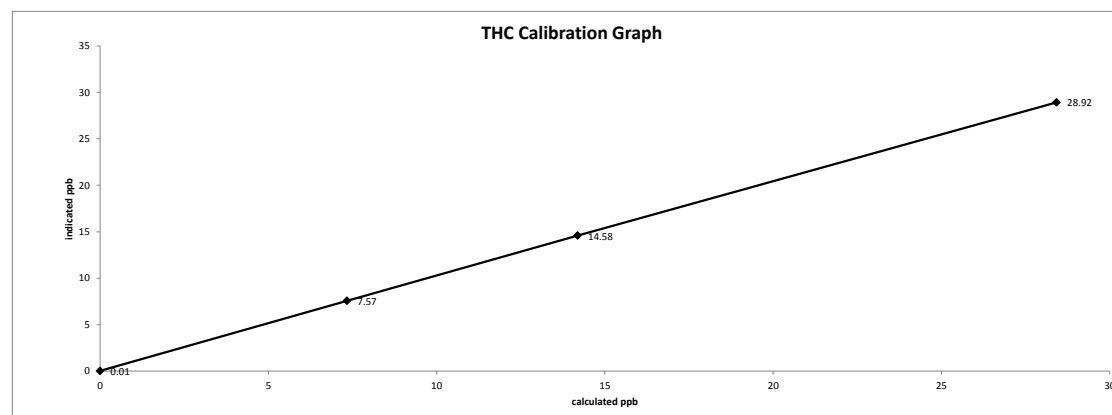
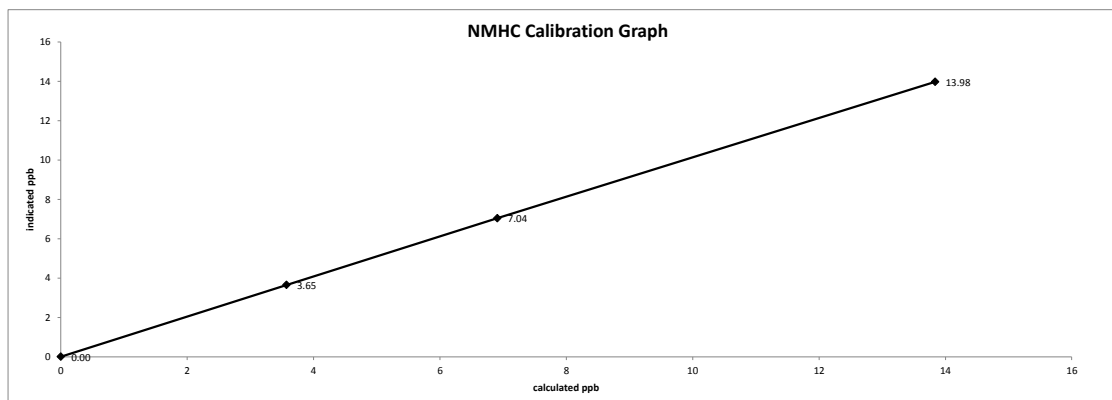
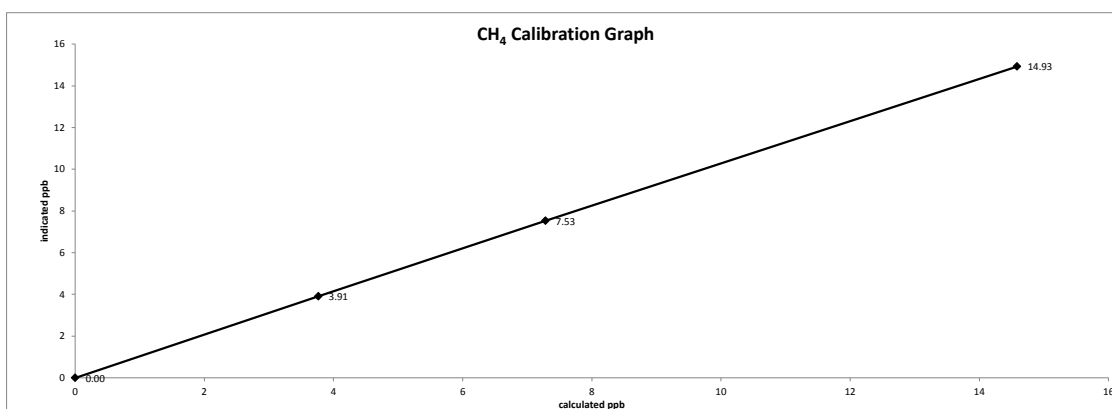


TOTAL HYDROCARBON

Page 73 of 105

Date: April 11, 2018
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 08:26 / 10:45
Calibration Purpose: shut down
Calibration Method: Gas Dilution





Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 11, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	938	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	842b	Weather Conditions:	Light snow		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	post repair		
Start/End Time 24 hr. (mst):	12:59 / 16:00	Performed By/Reviewer:	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	October 18, 2025		

Analyzer:

Serial Number/Owner:	1505664392	Maxxam	Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow:	1.11 L/min		CH ₄ = 1.002	n/a	0.999
Last Calibration Date:	March 22, 2018		NMHC = 0.998	n/a	1.000
Range ppm:	20 CH4/20 NMHC/40 THC		THC = 1.000	n/a	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018	Standard Calibration Points for Analyzer Range of 20/20/40 ppm
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 ₃ H ₈ Cylinder Conc.	
CH ₄ expressed as C ₃ H ₈ =	569.3 1169.3 =total CH4 equivalent	

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015										Correction Factors:		
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
Point	Diluent	Cal Gas	Total Flow									
adjusted zero	2508	0.00	2508	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
adjusted high	2448	60.66	2509	14.51	13.76	28.27	14.52	13.76	28.29	0.999	1.000	1.000
mid	2478	30.43	2508	7.28	6.91	14.18	7.31	6.97	14.29	0.996	0.991	0.993
low	2494	15.74	2510	3.76	3.57	7.33	3.81	3.69	7.51	0.987	0.967	0.977
calibrator zero	2508	0.00	2508	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
Average C.F. =										0.994	0.986	0.990

Linear Regression/Calibration Results:

Correlation Coefficient =	CH ₄	NMHC	THC	LIMITS
Slope =	1.000	1.000	1.000	> or = 0.995
b (Intercept as % of full scale) =	1.000	0.997	0.999	0.95-1.05
% change in C.F. from last cal =	0.11%	0.31%	0.24%	± 3% F.S.
	n/a	n/a	n/a	n/a

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-294.4	Calibration History cnt'd:	NM Peak Area:	81107
Temperatures:	Detector Oven:	175.0	Crucial Settings:	Methane Start:	n/a
	Filter:	175.0		Methane End:	n/a
	Column Oven:	75.0		Backflush:	n/a
	Internal:	32.		NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	1300 50		NMHC End:	n/a
	Fuel:	350/1900 50	Run History>1:	Date:	11Apr2018
	Span Gas:	700 18		Time:	14:55
	Zero Air Generator:	50		CH ₄ PK HT:	0
Internal Pressures:	Carrier:	31.1		CH ₄ RT:	11.4
	Fuel:	47.4		CH ₄ Baseline:	3236
	Air:	23.7		CH ₄ LOD:	39
FID Status:	Status:	LIT		CH ₄ SD:	13
	Counts:	36476		CH ₄ CONC:	0.00
	Flame:	389.0		NM PK HT:	0
	Det Base:	175.0		NM Peak Area:	0
Flame and Power Stats:	Last Power On:	02Mar2018@12:33		NM CONC:	0.00
	Flameouts:	1		NM Base Start:	3236
	Det Oven at Start:	165.9		NM Base End:	3257
	Col Oven at Start:	74.0		NM LOD:	11
Calibration History:	Time:	11Apr2018@13:43		NM Start IDX:	22
	Type:	Span		NM End IDX:	78
	Status:	Good		NM Max Slope:	1.3e+01
	Check/Adjust:	Adjust		NM Min Slope:	7.0e-01
	CH ₄ Span Conc:	14.51	Expected Values:	NM PT Count:	0
	CH ₄ SP Ratio:	0.000717		Previous CH ₄ :	9.53
	CH ₄ RT:	12.2		Previous NMHC:	10.43
	CH ₄ PK IDX:	21		Previous THC:	19.97
	CH ₄ PK HT:	20251		New CH ₄ :	10.08
	NM Span Conc:	13.76		New NMHC:	10.95
	NM SP Ratio:	0.00017		New THC:	21.04

Comments:

The analyzer sample inlet filter was changed.

A new hydrogen cylinder was installed.

The analyzer cooling fan filter(s) were cleaned.

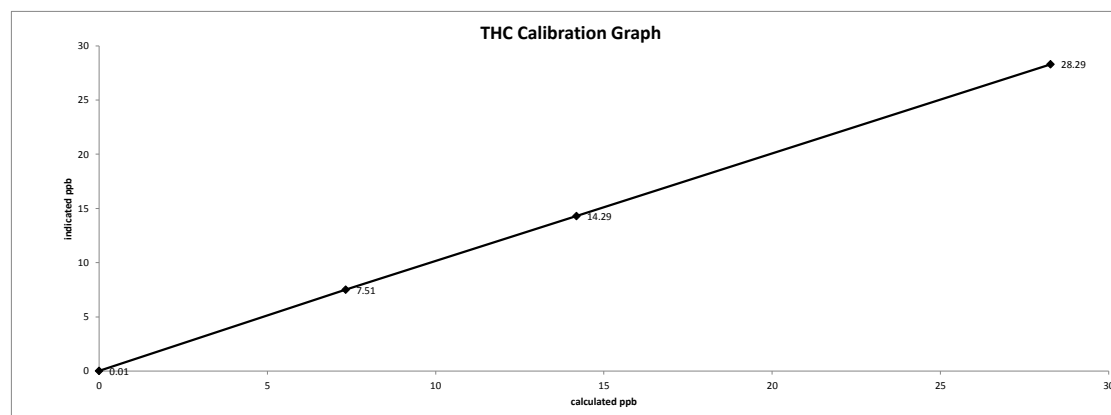
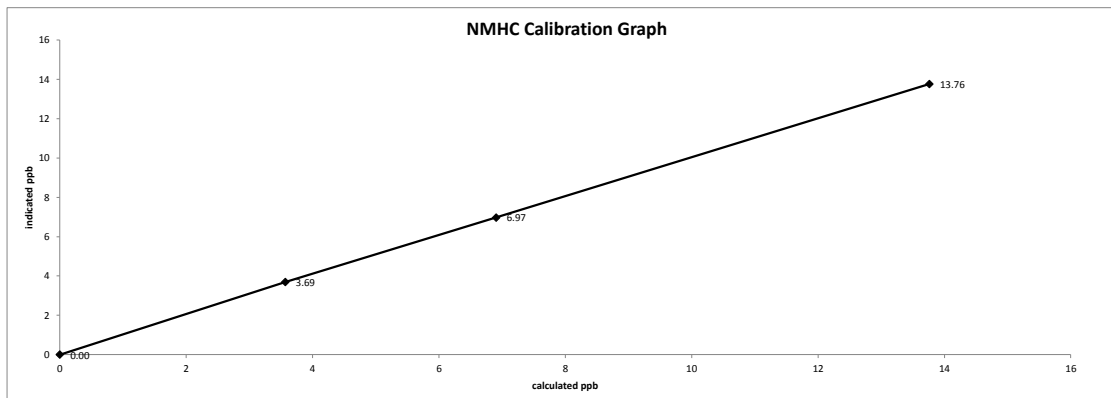
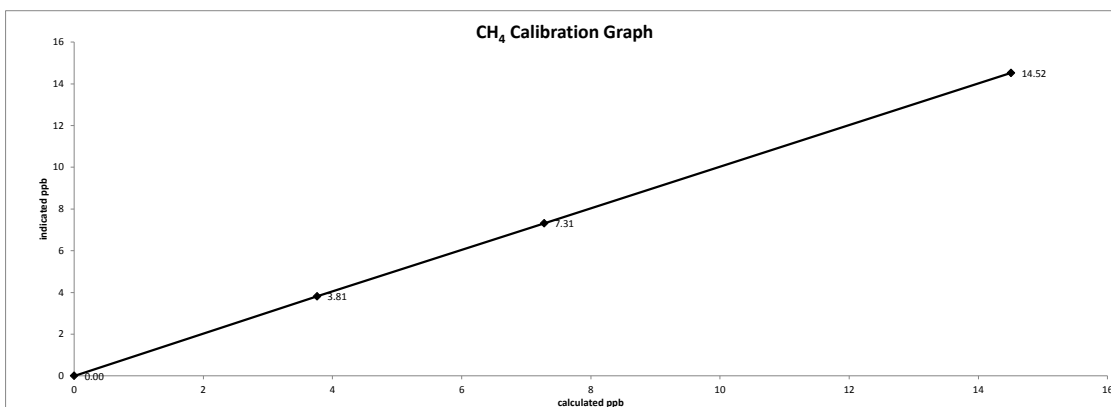
The manifold blower was found to be working normally.

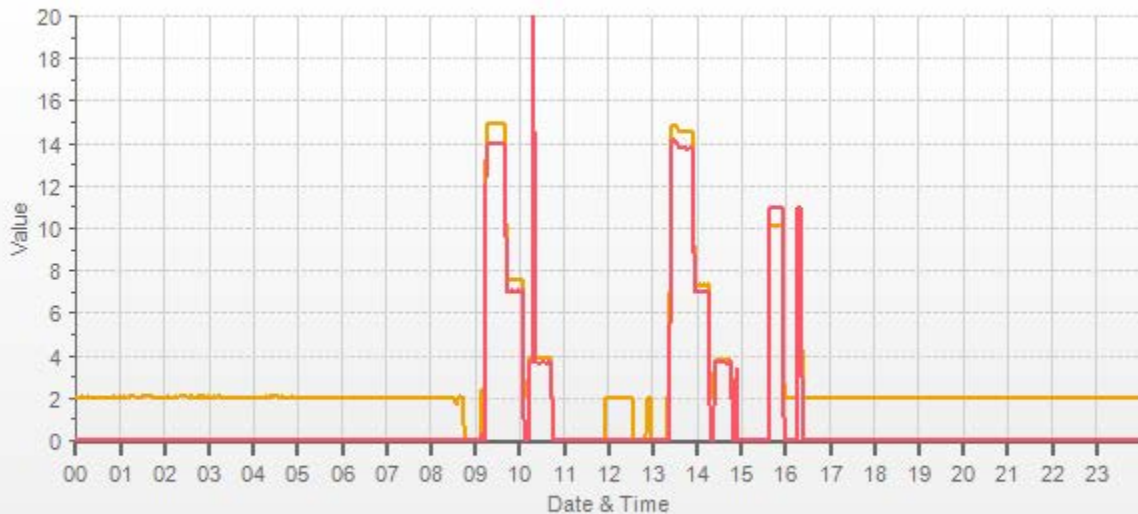
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

A Post-Repair calibration was performed following the pump exchange.
Canister trigger test at 14:51-14:55 and 16:13-16:22

Date: April 11, 2018
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 12:59 / 16:00
Calibration Purpose: post repair
Calibration Method: Gas Dilution





WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	Performed By:	Chris Wesson
Audit Location:	842b	Reviewed By:	Tom Bourque
Audit Date:	August 30, 2017	Start /EndTime (mst):	10:50 / 11:20
Calibration Purpose:	installation	Weather Conditions:	Cloudy/Overcast

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1V
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200kmh
Serial #:	124638	Direction Voltage Output Range:	0-1V
Previous Cal/Audit Date:	n/a or unknown	Direction Unit Output Range:	0-360°

Wind Calibrator Information

Calibrator Make/ Model:	RM Young	Serial #:	CA 4039
Maxxam Unit ID #:	n/a	Certification Date:	February 24, 2017

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.5	1.000
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.004
4000	73.7	73.4	73.4	1.004
5000	92.2	91.8	91.8	1.004
6000	110.6	110.2	110.2	1.003
7000	129.0	128.6	128.6	1.003
8000	147.4	147.1	147.0	1.003
9000	165.9	165.5	165.5	1.002
10000	184.3	184.2	184.1	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.003

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	1	353	0.5	2.0	1.3
30	330	28	329	2.0	1.0	1.5
60	300	59	299	1.0	1.0	1.0
90	270	89	269	1.0	1.0	1.0
120	240	118	239	2.0	1.0	1.5
150	210	149	209	1.0	1.0	1.0
180	180	178	179	2.0	1.0	1.5
210	150	208	150	2.0	0.0	1.0
240	120	238	119	2.0	1.0	1.5
270	90	268	89	2.0	1.0	1.5
300	60	298	59	2.0	1.0	1.5
330	30	328	29	2.0	1.5	1.8
355	0	353	0	2.0	0.4	1.2
The audit meets AMD requirements.			Average Absolute Degrees Difference=		1.3	

Comments:

METEOROLOGICAL SYSTEMS CHECK



Meteorological System Checklist

Date:	April 11, 2018		
Technician:	Chris Wesson		
Reviewer:	Rob Fisher		
Station:	PRAMP 842b		
Unit:	Make:	Model:	Serial #:
Temperature Sensor:	RM Young	43172VC	60837987
Barometric Pressure Sensor:	Met One	092	K12864
Relative Humidity Sensor:	RM Young	43172VC	60837987
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	January 8, 2018		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 160459244 expires May 18, 2018		
Reference Temperature (°C):	-0.6		
Station - Ambient Temperature (°C):	0.3		
Temperature Difference (°C):	-0.9		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	January 8, 2018		
Reference Barometer ID:	Brunton 05490 expires December 11, 2018		
Reference Pressure - Units/Reading:	mbar	938.7	
Station Pressure - Units/Reading:	mbar	937.4	
Pressure Tolerance +/- 15% of error:	798 - 1080	0.14%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	January 8, 2018		
Reference Hygrometer ID:	F.S. id# 160459244 expires May 18, 2018		
Reference Hygrometer % RH- Reading:	64.00		
Station Hygrometer % RH- Reading:	65.00		
RH Tolerance +/- 15% of error:	54.40 - 73.60	-1.0%	

CALIBRATORS

Company Maxxam Operator: Christopher

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Mesa 530+</u>
Serial Number	<u>829</u>	Serial Number	<u>H-156312 L-156151</u>
Last Verification Date	<u>January 2017</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>EY0000715</u>	Barometric Pressure	<u>N/A</u>
NO [PPM]	<u>50.7</u>	NOx [PPM]	<u>50.8</u>
Expiry Date	<u>May 2020</u>		

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4950	79.8	0.787	0.788	0.783	-0.001	0.781	-1%	-1%
4958	37.2	0.380	0.381	0.378	-0.001	0.377	-1%	-1%
4960	18.5	0.189	0.189	0.188	-0.001	0.187	-1%	-1%
Absolute Average Percent Difference							1%	1%

LINEAR REGRESSION ANALYSIS

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

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

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4950	0.000	0.000	0.776	0.000	0.776	NO ₂	% Diff. Limit
4950	0.500	0.476	0.300	0.474	0.775	0%	± 10%
4950	0.290	0.277	0.499	0.278	0.778	0%	± 10%
4950	0.095	0.090	0.686	0.093	0.779	3%	± 10%
Absolute Average Percent Difference						1%	± 10%

LINEAR REGRESSION ANALYSIS

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

NO ₂		LIMITS
Correlation=	1.0000	≥ 0.995
m (Slope)=	0.9938	0.90-1.10
b (Intercept % of FS)=	0.1802	± 3% F.S.

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

COMMENTS:

Auditor: Al Clark
Operator Signature: [Signature]

Date: January 31, 2018
Location: McIntyre Center Edmonton

Company Maxxam Operator: Micheal Espiritu

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

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

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

LINEAR REGRESSION ANALYSIS

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

LINEAR REGRESSION ANALYSIS

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

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature: [Signature]

Date: May 16, 2017
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 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 Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
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 ☒ COMMENTS: _____
< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 13, 2017
Location: McIntyre Center Edmonton



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: January 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 (scm)		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 ☒ _____

Auditor: Al Clark

Date: July 27, 2017

Operator Signature: *Al Clark*

Location: McIntyre Center Edmonton



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/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
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 ☒ **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



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - April 2018

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

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

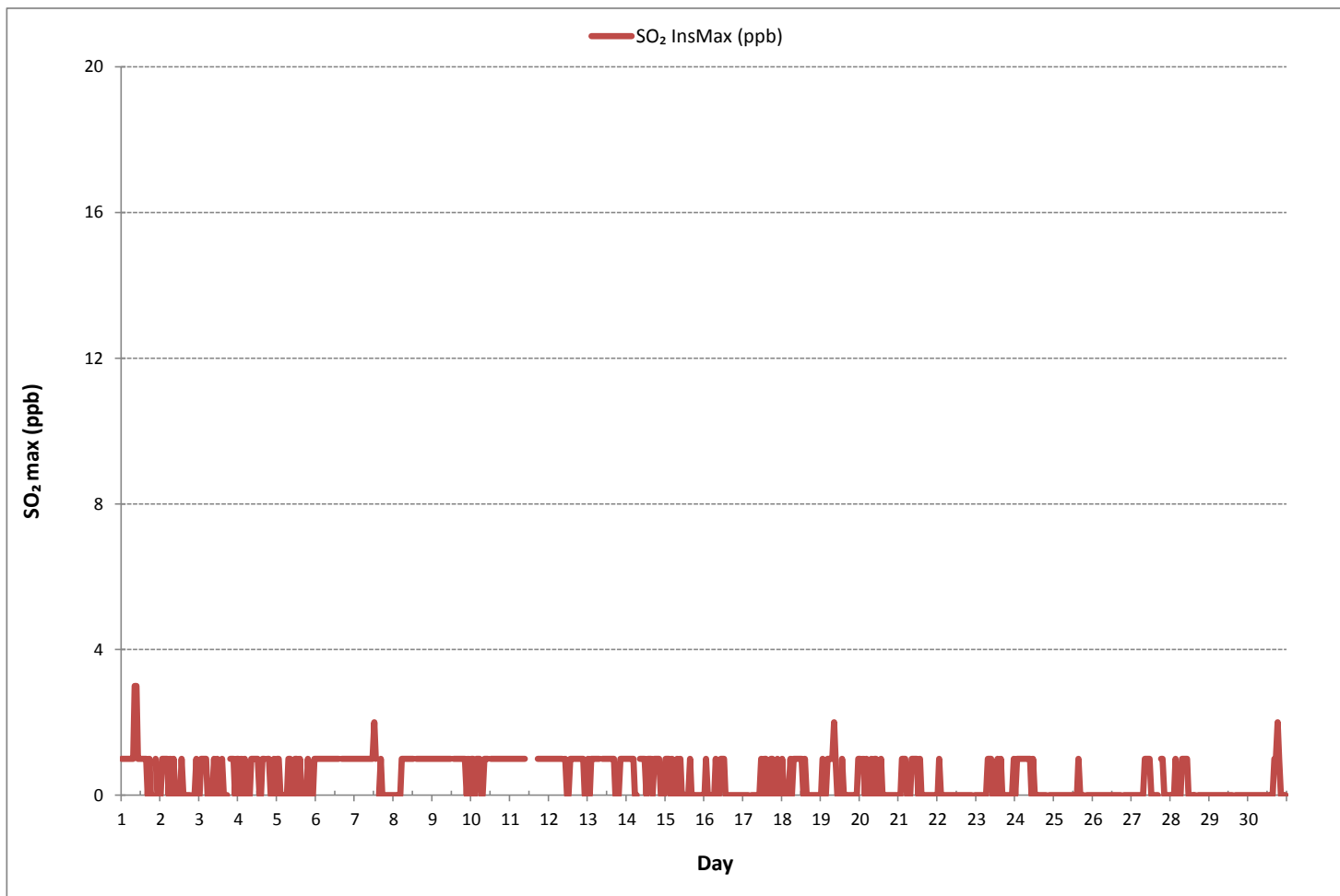
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		312							
MAXIMUM INSTANTANEOUS VALUE:		3	ppb	@ HOUR	8	ON DAY	1		
12S CALIBRATION TIME:		31	hrs	OPERATIONAL TIME:		720 hrs			
MONTHLY CALIBRATION TIME:		5	hrs						
STANDARD DEVIATION:		1							

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0.36	0.36	0.36	0.36	0.36	0.51	0.38	0.41	0.47	0.36	0.36	0.33	0.33	0.30	0.33	0.30	0.30	0.33	0.30	0.28	\$	1.29	1.24	0.30	0.28	1.29	0.43	24	
2	1.49	2.59	2.04	1.30	0.70	0.36	0.30	0.28	0.28	0.30	0.28	0.33	0.30	0.28	0.28	0.28	0.28	0.30	0.33	\$	0.36	0.46	0.33	0.96	0.28	2.59	0.63	24	
3	1.72	0.49	0.46	0.46	0.57	0.33	0.33	0.28	0.28	0.28	0.33	0.28	0.28	0.28	0.30	0.30	0.28	0.28	\$	0.33	0.28	0.30	0.33	0.28	0.28	1.72	0.39	24	
4	0.30	0.28	0.36	0.36	0.30	0.44	0.30	0.30	0.28	0.30	0.28	0.28	0.30	0.30	0.30	0.33	0.30	\$	0.36	0.30	0.54	0.41	0.51	0.30	0.28	0.54	0.34	24	
5	0.33	0.36	0.41	0.33	0.30	0.33	0.33	0.33	0.30	0.36	0.30	0.30	0.31	0.33	0.33	0.30	\$	0.33	0.33	0.33	0.33	0.33	0.33	0.36	0.30	0.41	0.33	24	
6	0.38	0.36	0.36	0.36	0.36	0.33	0.33	0.30	0.38	0.30	0.33	0.33	0.31	0.30	0.30	\$	0.36	0.30	0.30	0.30	0.33	0.30	0.30	0.33	0.30	0.38	0.33	24	
7	0.33	0.30	0.33	0.33	0.33	0.33	0.30	0.36	0.30	0.30	0.36	0.30	0.33	0.30	\$	0.28	0.30	0.33	0.28	0.30	0.28	0.30	0.33	0.28	0.28	0.36	0.31	24	
8	0.28	0.30	0.28	0.30	0.36	0.36	0.30	0.30	0.36	0.30	0.30	0.30	0.30	\$	0.33	0.33	0.30	0.30	0.28	0.30	0.33	0.30	0.33	0.30	0.28	0.36	0.31	24	
9	0.30	0.33	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.33	0.30	0.30	\$	0.33	0.33	0.30	0.30	0.28	0.28	0.28	0.28	0.33	0.30	0.36	0.30	0.28	0.36	0.31	24
10	0.33	0.32	0.33	0.28	0.28	0.30	0.30	0.30	0.28	0.28	0.28	\$	0.30	0.30	0.28	0.25	0.25	0.28	0.28	0.30	0.28	0.25	0.28	0.28	0.25	0.33	0.29	24	
11	0.25	0.28	0.28	0.28	0.28	0.28	0.28	0.33	C	C	C	C	C	0.66	0.28	0.28	0.25	0.25	0.25	0.28	0.28	0.25	0.20	0.22	0.20	0.20	0.66	0.28	24
12	0.23	0.22	0.22	0.20	0.25	0.22	0.22	0.28	0.20	\$	0.22	0.18	0.20	0.20	0.20	0.23	0.17	0.20	0.20	0.20	0.20	0.20	0.22	0.23	0.17	0.28	0.21	24	
13	0.23	0.22	0.25	0.25	0.26	0.26	0.22	0.23	\$	0.28	0.23	0.22	0.22	0.20	0.20	0.23	0.20	0.18	0.18	0.20	0.15	0.20	0.18	0.20	0.15	0.28	0.22	24	
14	0.20	0.22	0.17	0.20	0.20	0.20	0.20	\$	0.22	0.20	0.18	0.17	0.20	0.17	0.17	0.20	0.20	0.15	0.17	0.20	0.20	0.17	0.22	0.20	0.15	0.22	0.19	24	
15	0.22	0.20	0.20	0.20	0.20	0.20	\$	0.23	0.22	0.18	0.20	0.20	0.17	0.22	0.23	0.23	0.23	0.25	0.26	0.17	0.22	0.20	0.20	0.22	0.17	0.26	0.21	24	
16	0.23	0.20	0.20	0.23	0.20	\$	0.25	0.20	0.22	0.23	0.23	0.25	0.23	0.20	0.20	0.20	0.20	0.20	0.17	0.18	0.20	0.18	0.15	0.18	0.15	0.25	0.21	24	
17	0.17	0.15	0.17	0.20	\$	0.20	0.18	0.20	0.20	0.25	0.33	0.23	0.20	0.22	0.22	0.20	0.23	0.25	0.22	0.25	0.25	0.23	0.20	0.15	0.15	0.33	0.21	24	
18	0.17	0.17	0.20	\$	0.22	0.30	1.09	1.09	0.36	0.22	0.25	0.20	0.18	0.17	0.15	0.15	0.20	0.15	0.15	0.20	0.17	0.17	0.17	0.22	0.15	1.09	0.28	24	
19	0.22	0.20	\$	0.22	0.20	0.20	0.22	0.20	0.17	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.12	0.09	0.12	0.15	0.12	0.15	0.12	0.12	0.09	0.22	0.16	24	
20	0.17	\$	0.12	0.12	0.15	0.15	0.15	0.20	0.14	0.15	0.09	0.15	0.15	0.15	0.09	0.15	0.09	0.15	0.09	0.09	0.12	0.17	0.12	0.12	0.09	0.20	0.13	24	
21	\$	0.12	0.12	0.12	0.12	0.12	0.09	0.15	0.12	0.15	0.33	0.30	0.20	0.12	0.09	0.15	0.15	0.12	0.12	0.09	0.12	0.09	0.07	\$	0.07	0.33	0.14	24	
22	0.12	0.15	0.12	0.17	0.12	0.12	0.15	0.15	0.22	0.22	0.17	0.12	0.09	0.12	0.09	0.09	0.12	0.15	0.12	0.12	0.12	0.17	0.12	\$	0.20	0.09	0.22	0.14	24
23	0.22	0.25	0.22	0.17	0.17	0.28	0.22	0.20	0.20	0.20	0.15	0.17	0.15	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.17	\$	0.23	0.17	0.12	0.28	0.17	24	
24	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.15	0.18	0.15	0.15	0.15	0.12	0.15	0.15	0.15	0.15	0.12	0.12	0.15	\$	0.17	0.17	0.17	0.12	0.18	0.16	24	
25	0.15	0.17	0.17	0.17	0.17	0.15	0.17	0.15	0.17	0.20	0.15	0.20	0.12	0.15	0.15	0.15	0.15	0.12	0.15	\$	0.15	0.17	0.17	0.15	0.12	0.20	0.16	24	
26	0.15	0.17	0.20	0.20	0.20	0.20	0.20	0.20	0.17	0.18	0.15	0.12	0.15	0.15	0.17	0.15	0.09	0.12	\$	0.17	0.17	0.17	0.12	0.12	0.09	0.20	0.16	24	
27	0.15	0.15	0.18	0.15	0.12	0.09	0.09	0.12	0.17	0.12	0.15	0.15	0.15	0.15	0.20	0.17	0.18	\$	0.15	0.20	0.18	0.12	0.12	0.12	0.09	0.20	0.15	24	
28	0.09	0.12	0.12	0.07	0.12	0.12	0.12	0.15	0.12	0.15	0.15	0.17	0.15	0.12	0.09	0.15	\$	0.15	0.12	0.12	0.12	0.15	0.17	0.23	0.07	0.23	0.13	24	
29	0.17	0.20	0.17	0.17	0.15	0.17	0.15	0.17	0.17	0.15	0.12	0.12	0.12	0.12	0.12	\$	0.12	0.12	0.09	0.12	0.09	0.12	0.36	0.41	0.09	0.41	0.16	24	
30	0.15	0.15	0.12	0.12	0.15	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.15	0.12	\$	0.15	0.12	0.15	0.15	0.12	0.12	0.12	0.09	0.15	0.09	0.15	0.13	24	
HOURLY MAX	1.72	2.59	2.04	1.30	0.70	0.51	1.09	1.09	0.47	0.36	0.36	0.33	0.33	0.66	0.33	0.33	0.36	0.33	0.36	0.33	0.54	1.29	1.24	0.96					
HOURLY AVG	0.32	0.32	0.30	0.27	0.25	0.25	0.26	0.26	0.24	0.23	0.23	0.22	0.21	0.22	0.21	0.21	0.21	0.21	0.21	0.20	0.21	0.22	0.25	0.26	0.25				

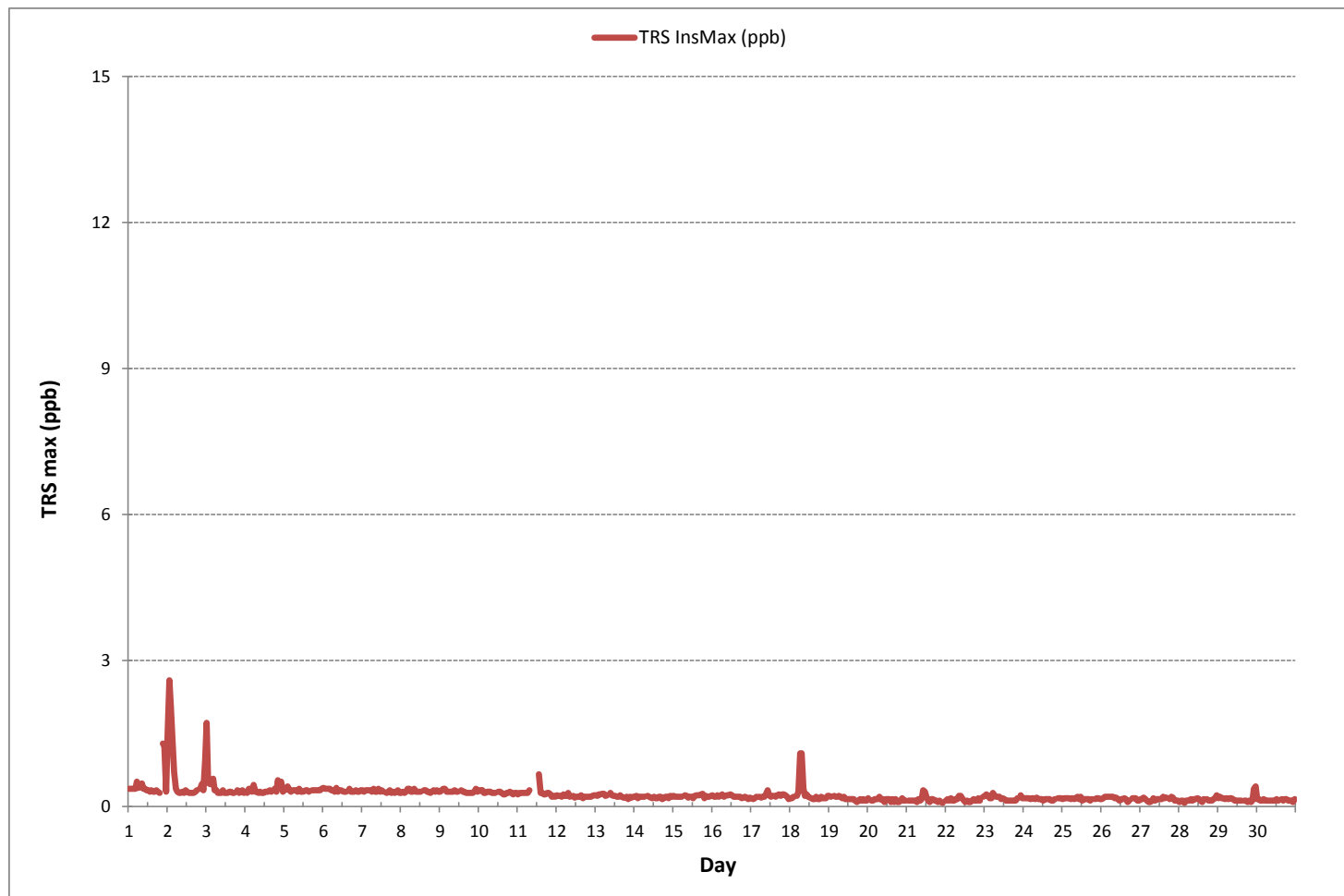
STATUS FLAG CODES

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:	685
MAXIMUM INSTANTANEOUS VALUE:	2.59 ppb @ HOUR 1 ON DAY 2
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.18
OPERATIONAL TIME:	720 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	2.04	2.05	2.05	2.07	2.08	2.13	2.17	2.19	2.25	2.05	2.00	1.99	1.99	1.99	2.01	1.99	1.99	1.99	1.99	2.01	S	2.12	2.02	2.00	1.99	2.25	2.05	24	
2	2.04	2.27	2.28	2.26	2.25	2.07	1.99	1.98	2.00	2.01	1.99	2.01	1.98	2.00	1.98	1.98	1.98	1.99	1.98	S	1.99	2.00	2.00	2.03	1.98	2.28	2.05	24	
3	2.08	2.19	2.11	2.04	2.02	2.00	2.10	2.00	1.98	1.99	1.99	2.01	1.99	2.01	1.99	2.00	2.00	2.00	S	2.00	2.00	1.99	2.00	1.99	1.98	2.19	2.02	24	
4	2.01	1.99	2.01	1.98	2.01	2.00	1.99	2.01	1.99	2.00	1.99	2.02	2.00	2.01	2.02	2.00	2.03	S	2.01	2.01	2.01	2.00	2.04	2.00	1.98	2.04	2.01	24	
5	2.03	2.02	2.00	2.03	2.05	2.02	2.00	2.02	2.00	2.02	2.02	2.02	2.02	2.00	2.02	2.01	S	2.02	2.02	2.02	2.03	2.06	2.04	2.08	2.00	2.08	2.02	24	
6	2.09	2.07	2.07	2.07	2.04	2.05	2.04	2.04	2.05	2.01	2.04	2.01	2.03	2.02	2.02	S	2.03	2.04	2.03	2.04	2.03	2.03	2.03	2.02	2.01	2.09	2.04	24	
7	2.04	2.04	2.03	2.05	2.06	2.04	2.07	2.04	2.06	2.04	2.07	2.04	2.07	2.04	S	2.04	2.05	2.04	2.05	2.05	2.04	2.04	2.04	2.05	2.03	2.07	2.05	24	
8	2.05	2.04	2.05	2.05	2.14	2.13	2.13	2.11	2.12	2.08	2.11	2.08	2.10	S	2.12	2.12	2.12	2.18	2.12	2.12	2.16	2.13	2.11	2.11	2.04	2.18	2.11	24	
9	2.13	2.12	2.13	2.12	2.14	2.12	2.13	2.11	2.08	2.06	2.07	2.06	S	2.06	2.10	2.11	2.08	2.08	2.08	2.09	2.09	2.09	2.28	2.20	2.06	2.28	2.11	24	
10	2.22	2.12	2.08	2.07	2.06	2.05	2.04	2.05	2.05	2.05	S	2.05	2.05	2.05	2.05	2.04	2.05	2.05	2.04	2.04	2.05	2.05	2.06	2.06	2.04	2.22	2.06	24	
11	2.05	2.05	2.05	2.05	2.05	2.04	2.03	2.04	C	C	C	Y	Y	C	C	C	Y	2.00	2.02	2.01	2.03	2.02	2.00	2.02	2.00	2.05	2.03	21	
12	2.01	2.04	2.03	2.04	2.03	2.03	2.02	2.02	2.02	S	2.01	2.01	2.02	2.01	2.01	2.02	2.03	2.03	2.05	2.04	2.04	2.07	2.06	2.06	2.01	2.07	2.03	24	
13	2.06	2.07	2.07	2.07	2.07	2.06	2.07	2.07	S	2.09	2.12	2.09	2.09	2.06	2.04	2.03	2.01	2.01	2.03	2.03	2.06	2.07	2.06	2.05	2.01	2.12	2.06	24	
14	2.04	2.06	2.07	2.08	2.01	1.99	1.98	S	1.99	1.98	1.99	2.00	2.01	2.00	1.99	1.99	2.03	2.01	2.00	2.00	2.00	1.99	1.99	1.99	1.98	2.08	2.01	24	
15	1.99	2.00	2.00	2.00	2.01	2.02	S	2.01	2.00	1.99	2.00	2.01	2.02	2.03	2.03	2.03	2.03	2.02	2.02	2.01	2.01	2.00	2.01	2.00	1.99	2.03	2.01	24	
16	2.01	2.00	2.01	2.01	2.00	S	2.00	2.00	2.00	2.01	2.00	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.00	24	
17	2.00	2.00	1.99	2.00	S	2.00	1.99	2.01	2.00	2.01	2.02	1.99	2.02	2.01	2.03	2.02	2.01	2.01	2.00	2.01	2.03	2.01	2.01	2.01	1.99	2.03	2.01	24	
18	2.01	2.02	2.01	S	2.01	2.04	2.05	2.03	2.03	2.02	2.02	2.01	2.01	2.01	2.01	2.00	2.02	2.01	2.03	2.00	2.00	1.99	1.99	1.99	1.99	2.05	2.01	24	
19	1.99	1.99	S	1.99	2.00	1.99	2.00	2.00	2.01	1.99	2.00	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.99	1.98	1.98	1.99	1.98	2.01	1.99	24	
20	1.98	S	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.09	2.07	1.98	2.09	2.00	24	
21	S	2.02	2.03	2.04	2.07	2.02	2.03	2.02	2.02	2.08	2.04	2.03	2.00	1.99	1.98	1.99	2.05	2.05	1.99	1.99	1.98	2.03	2.01	S	1.98	2.08	2.02	24	
22	1.98	1.98	1.99	1.99	1.98	1.99	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.99	2.00	1.99	2.02	2.00	1.99	S	1.99	1.98	2.02	1.99	24	
23	2.00	2.00	2.01	2.01	2.00	2.01	2.01	2.03	2.00	2.00	2.01	2.01	2.00	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	S	2.01	2.00	2.00	2.03	2.01	24
24	1.99	1.99	1.99	2.05	2.00	1.99	1.99	1.99	1.99	2.00	2.00	2.00	1.99	2.01	1.99	1.99	1.98	1.98	1.98	1.98	S	2.04	1.99	1.99	1.98	2.05	2.00	24	
25	2.01	2.00	2.00	2.01	2.02	2.03	2.03	2.02	1.98	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.99	1.99	1.99	1.98	1.98	2.03	1.99	24	
26	1.99	2.01	1.99	1.99	2.24	2.03	2.11	2.08	2.00	2.00	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	S	2.03	2.00	1.99	2.05	2.21	1.98	2.24	2.02	24	
27	2.27	2.31	2.33	2.23	2.22	2.21	2.13	2.01	1.98	1.99	1.99	1.99	1.99	2.00	2.01	2.00	2.01	S	1.99	1.99	2.07	2.00	1.99	2.01	1.98	2.33	2.07	24	
28	2.02	2.09	2.00	1.99	2.00	1.99	2.00	2.00	2.01	2.00	2.01	2.01	1.99	1.98	1.96	1.98	S	1.98	1.98	1.99	1.98	1.99	1.98	1.99	1.96	2.09	2.00	24	
29	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	S	1.97	1.97	1.96	1.96	1.94	1.95	1.97	1.99	1.94	1.99	1.97	24	
30	1.97	1.98	1.98	1.99	1.98	1.98	1.98	1.97	1.99	1.99	2.00	1.99	1.99	1.97	S	1.98	1.97	1.97	1.96	1.94	1.94	1.97	1.96	2.03	1.94	2.03	1.98	24	
HOURLY MAX	2.27	2.31	2.33	2.26	2.25	2.21	2.17	2.19	2.25	2.09	2.12	2.09	2.10	2.06	2.12	2.12	2.12	2.18	2.12	2.12	2.16	2.13	2.28	2.21					
HOURLY AVG	2.04	2.05	2.05	2.04	2.05	2.03	2.04	2.03	2.02	2.01	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.02	2.02	2.03	2.03					

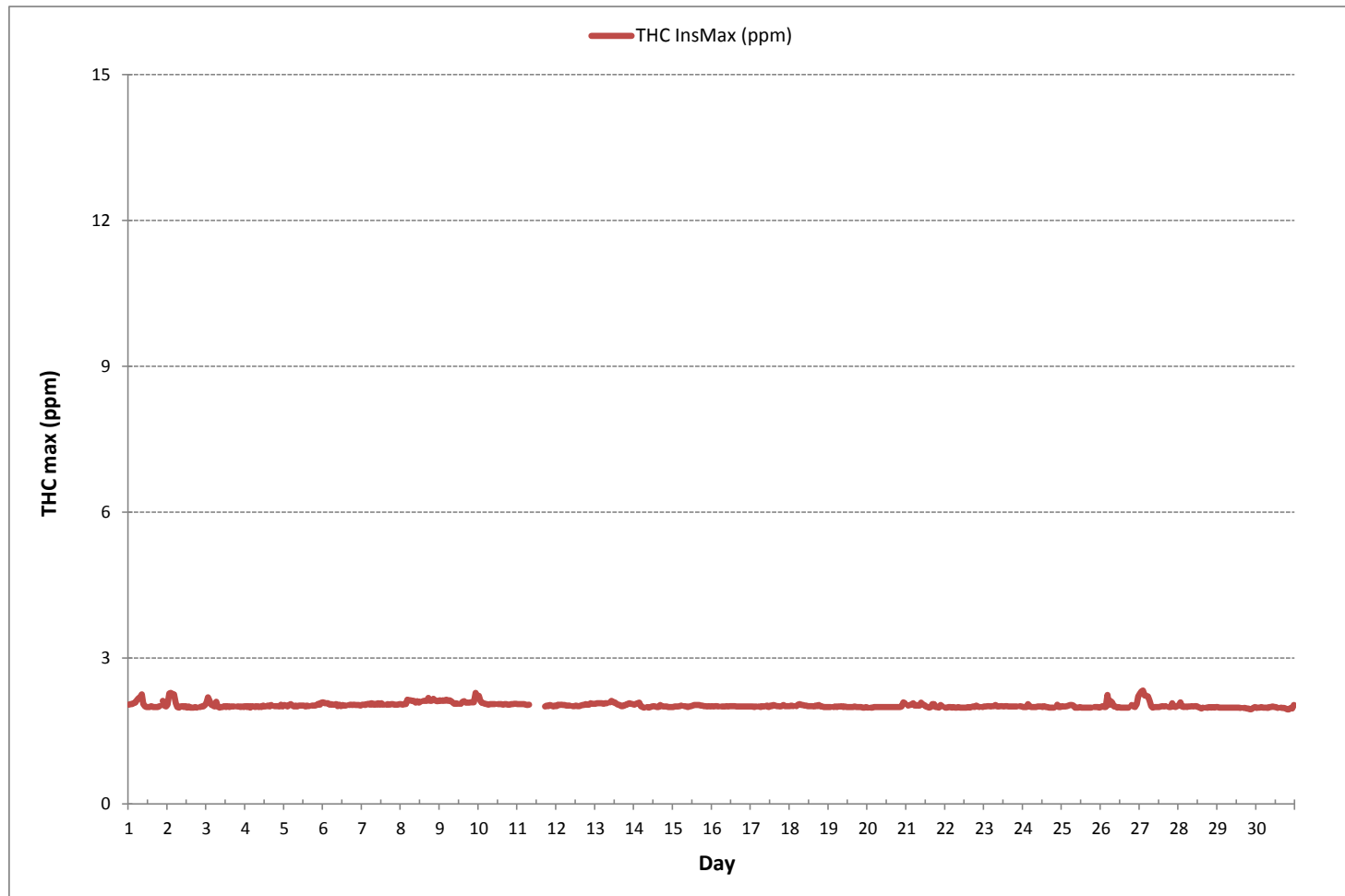
STATUS FLAG CODES

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:	681				
MAXIMUM INSTANTANEOUS VALUE:	2.33	ppm	@ HOUR	2	ON DAY 27
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	717	hrs
MONTHLY CALIBRATION TIME:	6	hrs			
STANDARD DEVIATION:	0.05				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - April 2018

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.02	2.04	2.04	2.05	2.07	2.11	2.15	2.17	2.24	2.04	1.99	1.97	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.99	S	2.10	2.01	1.99	1.97	1.97	2.24	2.04	24
2	2.03	2.26	2.27	2.25	2.24	2.05	1.97	1.97	1.98	1.99	1.97	1.99	1.96	1.99	1.97	1.97	1.96	1.97	1.97	S	1.97	1.98	1.99	2.02	1.96	2.27	2.03	24	
3	2.06	2.17	2.09	2.03	2.01	1.99	2.07	1.99	1.97	1.97	1.98	2.00	1.97	2.00	1.98	1.98	1.98	1.99	S	1.98	1.99	1.97	1.99	1.97	1.97	2.17	2.01	24	
4	1.99	1.98	2.00	1.97	1.99	1.98	1.98	1.99	1.98	1.98	1.98	2.00	1.99	2.00	2.00	1.99	2.02	S	2.00	1.99	2.00	1.98	2.02	1.99	1.97	2.02	1.99	24	
5	2.01	2.00	1.98	2.01	2.03	2.01	1.98	2.01	1.98	2.01	2.01	2.01	2.01	1.99	2.00	2.00	S	2.00	2.01	2.00	2.02	2.04	2.03	2.07	1.98	2.07	2.01	24	
6	2.07	2.05	2.06	2.05	2.03	2.03	2.02	2.03	2.03	2.00	2.02	2.00	2.01	2.00	2.01	S	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.00	2.07	2.02	24	
7	2.02	2.03	2.02	2.04	2.05	2.03	2.06	2.03	2.05	2.02	2.05	2.03	2.05	2.02	S	2.03	2.04	2.03	2.04	2.03	2.03	2.03	2.03	2.04	2.02	2.06	2.03	24	
8	2.04	2.03	2.04	2.04	2.12	2.11	2.11	2.09	2.10	2.06	2.08	2.07	2.08	S	2.10	2.10	2.10	2.17	2.11	2.10	2.14	2.11	2.08	2.09	2.03	2.17	2.09	24	
9	2.11	2.10	2.11	2.10	2.13	2.10	2.11	2.10	2.07	2.05	2.06	2.04	S	2.05	2.08	2.09	2.07	2.05	2.06	2.07	2.07	2.07	2.27	2.18	2.04	2.27	2.09	24	
10	2.21	2.10	2.07	2.05	2.05	2.04	2.03	2.03	2.03	2.03	2.03	S	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.03	2.21	2.05	24	
11	2.04	2.04	2.04	2.03	2.04	2.03	2.02	2.02	C	C	C	Y	Y	C	C	C	Y	1.99	2.01	2.00	2.01	2.00	1.98	2.00	1.98	2.04	2.02	21	
12	1.99	2.02	2.01	2.02	2.02	2.02	2.00	2.00	2.01	S	2.00	1.99	2.01	1.99	2.00	2.01	2.02	2.02	2.03	2.03	2.03	2.05	2.04	2.05	1.99	2.05	2.02	24	
13	2.04	2.06	2.06	2.06	2.05	2.05	2.06	2.06	S	2.07	2.10	2.07	2.07	2.04	2.03	2.02	1.99	1.99	2.02	2.02	2.04	2.06	2.04	2.03	1.99	2.10	2.04	24	
14	2.03	2.04	2.06	2.06	1.99	1.97	1.97	S	1.97	1.97	1.97	1.99	2.00	1.98	1.98	1.98	2.02	2.00	1.99	1.99	1.99	1.98	1.98	1.97	1.97	2.06	1.99	24	
15	1.97	1.98	1.99	1.99	2.00	2.00	S	1.99	1.99	1.98	1.99	1.99	2.00	2.02	2.02	2.02	2.01	2.01	2.01	2.00	1.99	1.99	2.00	1.99	1.97	2.02	2.00	24	
16	2.00	1.98	1.99	2.00	1.98	S	1.99	1.99	1.98	2.00	1.99	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.98	2.00	1.99	24	
17	1.98	1.99	1.98	1.99	S	1.99	1.98	2.00	1.99	1.99	2.01	1.98	2.01	2.00	2.01	2.00	2.00	1.99	1.98	1.99	2.02	2.00	1.99	2.00	1.98	2.02	1.99	24	
18	2.00	2.00	1.99	S	2.00	2.02	2.03	2.01	2.01	2.00	2.01	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.02	1.99	1.98	1.98	1.98	1.97	1.97	2.03	2.00	24	
19	1.97	1.98	S	1.98	1.98	1.97	1.98	1.98	2.00	1.98	1.99	1.97	1.98	1.98	1.97	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	2.00	1.98	24	
20	1.97	S	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.08	2.05	1.97	2.08	1.98	24	
21	S	2.01	2.01	2.03	2.06	2.01	2.01	2.00	2.01	2.07	2.03	2.02	1.99	1.98	1.97	1.97	2.04	2.04	1.98	1.98	1.97	2.02	2.00	S	1.97	2.07	2.01	24	
22	1.96	1.97	1.97	1.98	1.96	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.99	1.97	2.01	1.99	1.97	S	1.98	1.96	2.01	1.97	24	
23	1.98	1.98	1.99	2.00	1.99	1.99	2.00	2.01	1.99	1.99	2.00	2.00	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	S	1.99	1.99	1.98	2.01	1.99	24
24	1.98	1.98	1.97	2.04	1.99	1.97	1.97	1.98	1.98	1.99	1.99	1.99	1.98	1.99	1.97	1.97	1.96	1.96	1.96	1.97	S	2.03	1.98	1.98	1.96	2.04	1.98	24	
25	2.00	1.99	1.99	2.00	2.01	2.01	2.02	2.01	1.96	1.96	1.97	1.98	1.96	1.97	1.97	1.96	1.97	1.97	1.96	S	1.98	1.98	1.97	1.97	1.96	2.02	1.98	24	
26	1.97	1.99	1.98	1.97	2.23	2.02	2.08	2.07	1.99	1.99	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.97	S	2.01	1.99	1.97	2.04	2.20	1.96	2.23	2.01	24	
27	2.26	2.30	2.32	2.22	2.21	2.20	2.12	2.00	1.97	1.97	1.98	1.98	1.98	1.98	1.99	1.99	1.99	S	1.98	1.97	2.06	1.98	1.98	2.00	1.97	2.32	2.06	24	
28	2.01	2.07	1.98	1.97	1.98	1.98	1.99	1.99	2.00	1.99	1.99	2.00	1.98	1.96	1.94	1.97	S	1.96	1.97	1.97	1.96	1.97	1.97	1.97	1.94	2.07	1.98	24	
29	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.97	1.96	1.97	1.97	1.96	1.95	S	1.95	1.95	1.94	1.94	1.93	1.93	1.95	1.98	1.93	1.98	1.96	24	
30	1.95	1.96	1.96	1.98	1.97	1.97	1.96	1.95	1.98	1.98	1.99	1.98	1.97	1.95	S	1.96	1.96	1.95	1.94	1.93	1.94	1.95	1.94	2.02	1.93	2.02	1.96	24	
HOURLY MAX	2.26	2.30	2.32	2.25	2.24	2.20	2.15	2.17	2.24	2.07	2.10	2.07	2.08	2.05	2.10	2.10	2.10	2.17	2.11	2.10	2.14	2.11	2.27	2.20					
HOURLY AVG	2.02	2.04	2.03	2.03	2.04	2.02	2.02	2.01	2.01	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	2.02					

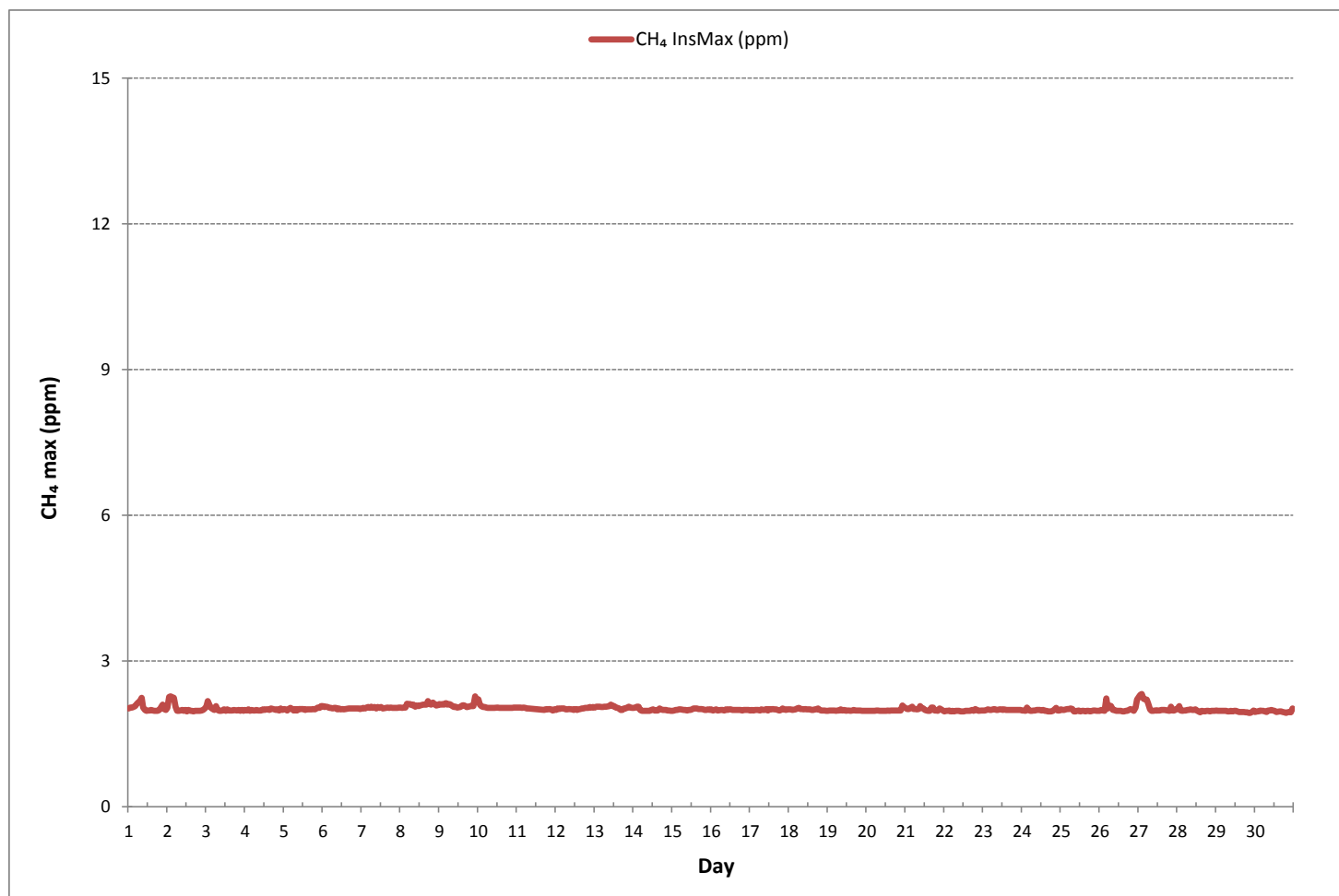
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681
MAXIMUM INSTANTANEOUS VALUE:	2.32 ppm @ HOUR 2 ON DAY 27
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	0.05
OPERATIONAL TIME:	717 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - April 2018

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

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

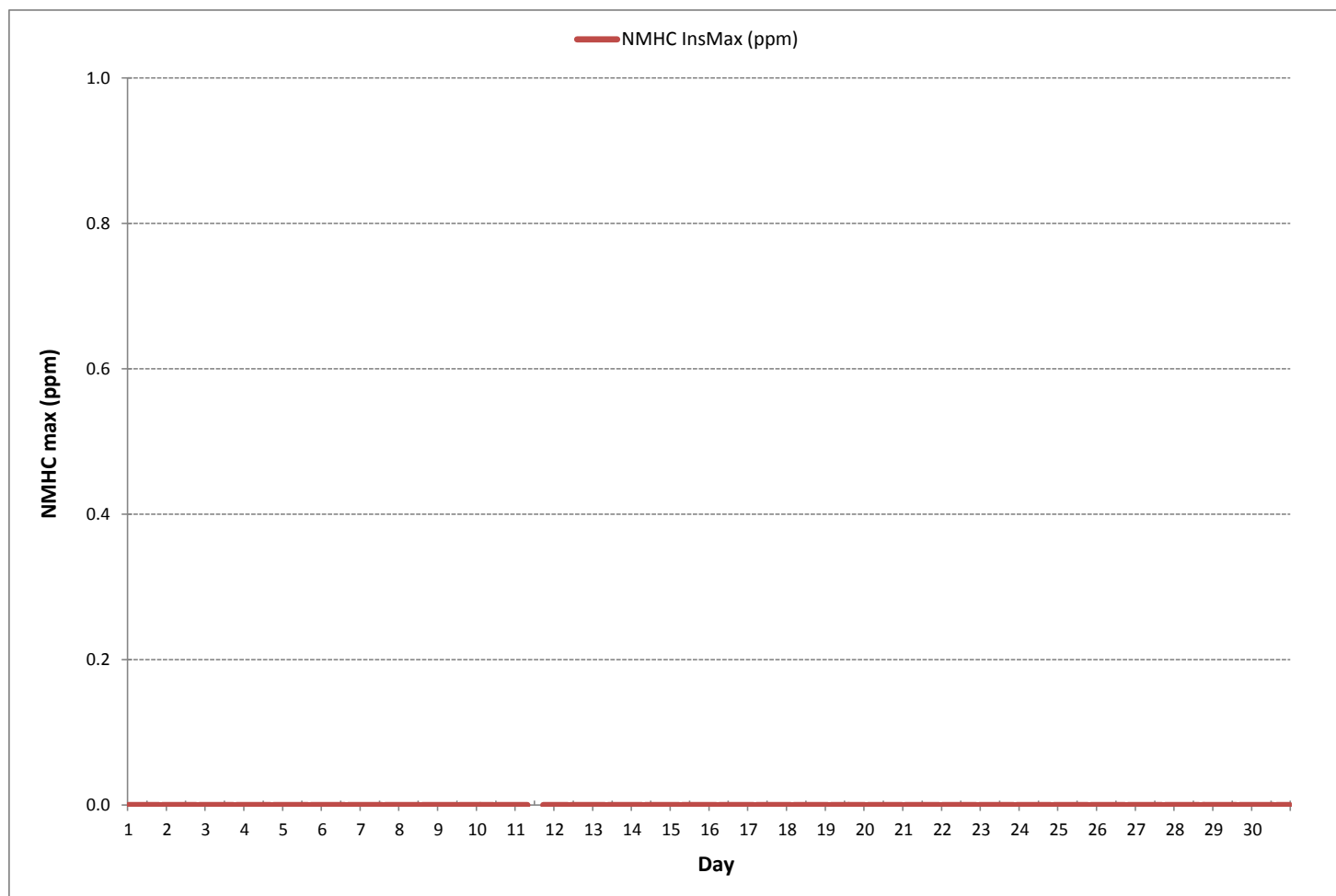
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0
MAXIMUM INSTANTANEOUS VALUE:	0.00 ppm @ HOUR 0 ON DAY 1
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	0.00
OPERATIONAL TIME:	717 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2018

WIND SPEED Instantaneous Maximum (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	6.7	6.5	6.5	6.8	5.9	4.0	3.4	4.0	5.2	13.6	17.5	23.2	23.6	25.2	25.9	27.2	23.9	22.8	18.0	9.5	5.2	4.6	5.3	4.8	3.4	27.2	12.5	24
2	4.2	4.2	4.6	8.5	10.6	18.1	15.7	17.1	22.4	21.2	25.0	27.1	26.4	31.4	33.7	32.3	25.1	25.1	19.7	13.7	5.3	4.2	6.1	9.7	4.2	33.7	17.1	24
3	7.5	9.5	9.2	8.2	8.5	7.7	7.3	16.3	21.9	21.9	20.4	22.7	27.4	28.8	32.0	27.5	25.1	23.0	19.9	16.1	10.2	14.5	16.4	16.7	7.3	32.0	17.4	24
4	17.1	11.2	12.1	7.6	12.1	10.4	16.9	24.4	24.4	32.2	30.8	35.5	33.7	33.9	26.5	25.6	23.4	17.6	13.2	10.4	3.6	7.9	11.6	10.7	3.6	35.5	18.9	24
5	7.0	8.6	5.9	6.9	10.6	12.2	15.9	30.3	26.9	22.5	23.1	22.5	29.1	24.6	26.7	25.1	25.3	26.3	21.8	15.9	13.7	14.9	14.9	15.8	5.9	30.3	18.6	24
6	11.0	10.1	14.8	12.5	16.7	16.3	15.8	19.6	17.5	22.3	25.7	25.6	28.2	29.8	27.1	30.4	27.7	27.6	26.5	23.7	16.8	22.4	21.4	20.6	10.1	30.4	21.3	24
7	18.4	15.7	13.8	11.8	14.2	15.2	17.3	19.8	17.8	23.3	26.4	30.4	30.5	34.1	37.7	35.4	31.6	35.3	30.0	26.5	24.3	23.4	17.6	17.4	11.8	37.7	23.7	24
8	14.1	11.3	10.4	8.0	7.7	8.1	11.0	12.8	15.3	17.9	19.0	17.5	15.1	16.2	19.3	18.0	15.8	15.3	13.6	11.3	8.1	5.5	4.7	7.7	4.7	19.3	12.7	24
9	9.0	6.4	7.2	9.2	6.3	7.3	8.4	11.7	13.8	15.5	19.2	19.1	16.8	15.2	15.8	16.0	13.5	12.4	12.0	6.9	4.7	5.9	6.7	10.3	4.7	19.2	11.2	24
10	15.2	19.3	22.1	25.2	23.7	22.1	26.1	30.0	39.2	29.4	33.3	32.2	36.3	35.4	33.7	31.4	33.6	29.3	30.2	26.5	21.3	19.8	21.5	23.8	15.2	39.2	27.5	24
11	23.6	23.3	20.2	23.5	19.2	19.7	14.5	15.7	15.8	16.0	16.5	15.8	16.3	20.8	15.6	19.5	17.6	20.6	18.7	18.8	15.9	14.0	11.5	9.7	9.7	23.6	17.6	24
12	12.1	13.4	12.6	14.5	20.2	18.4	20.8	21.0	19.6	20.8	22.6	15.4	19.7	16.4	20.6	26.4	26.6	22.7	19.8	15.4	11.4	15.2	17.2	16.9	11.4	26.6	18.3	24
13	17.1	16.1	15.2	13.2	17.6	15.9	18.0	21.9	24.2	25.7	26.3	26.4	27.2	26.4	26.0	22.0	18.8	13.9	4.9	26.9	23.8	35.2	32.2	26.8	4.9	35.2	21.7	24
14	23.1	18.7	18.0	34.8	23.5	28.9	20.5	27.8	33.2	33.5	31.3	37.1	38.7	35.6	34.7	26.6	27.5	25.8	19.0	15.0	16.4	20.4	15.4	27.1	15.0	38.7	26.4	24
15	22.3	16.4	11.0	7.9	5.1	3.4	6.9	17.5	18.9	18.0	26.2	29.9	32.7	34.7	35.7	33.6	34.5	35.1	35.6	32.6	35.3	32.8	28.8	27.4	3.4	35.7	24.3	24
16	27.3	29.4	29.3	25.0	24.0	22.5	26.9	22.0	25.5	29.0	29.5	27.7	30.8	31.2	32.3	32.2	27.7	23.4	32.6	30.9	23.2	21.9	19.9	19.0	19.0	32.6	26.8	24
17	14.6	16.3	15.1	16.3	15.8	18.0	12.2	15.3	14.3	20.5	17.5	20.9	22.0	26.6	30.2	30.4	33.2	31.9	31.0	23.2	21.7	16.7	14.8	14.8	12.2	33.2	20.6	24
18	17.3	12.3	11.4	5.8	4.7	8.2	8.6	8.2	16.3	19.5	24.9	25.1	29.9	30.1	28.7	25.5	25.1	24.9	27.0	15.8	15.0	18.1	25.6	21.3	4.7	30.1	18.7	24
19	20.1	17.2	16.5	19.4	21.6	24.1	26.4	31.9	34.0	36.7	38.0	33.0	39.5	43.9	35.4	34.6	36.4	36.0	27.5	26.2	31.8	27.3	23.6	23.3	16.5	43.9	29.4	24
20	25.3	27.8	26.7	27.9	30.3	17.2	20.3	16.2	30.9	33.8	32.9	33.8	35.7	36.0	40.4	30.4	25.3	22.6	19.7	18.3	10.4	11.4	9.8	12.2	9.8	40.4	24.8	24
21	11.5	8.6	9.7	8.4	6.1	8.5	9.9	7.2	11.3	19.2	19.5	18.6	20.6	20.3	21.5	22.0	20.5	24.6	26.6	26.9	21.2	32.5	26.9	33.7	6.1	33.7	18.2	24
22	26.3	17.9	22.1	21.1	26.3	30.9	30.1	26.6	32.9	34.0	33.9	34.0	27.4	32.5	37.9	32.4	37.5	28.2	24.3	19.0	13.5	10.1	14.1	11.5	10.1	37.9	26.0	24
23	8.6	8.2	8.8	8.0	9.6	8.3	14.0	21.2	21.3	22.3	25.5	28.0	31.4	35.9	37.5	37.0	31.3	24.4	23.9	19.5	14.3	16.4	14.2	16.5	8.0	37.5	20.3	24
24	20.9	27.9	23.0	21.1	18.2	25.0	26.9	25.9	34.9	28.8	28.0	40.7	41.2	35.9	45.0	31.7	32.6	28.4	28.4	24.7	21.0	14.7	17.0	11.7	11.7	45.0	27.2	24
25	9.5	7.9	7.9	6.1	3.8	2.9	4.3	11.6	15.0	18.3	21.1	29.5	34.7	36.1	34.4	38.7	33.4	35.0	27.1	16.2	11.9	17.8	21.3	22.6	2.9	38.7	19.5	24
26	17.7	14.4	5.7	5.0	4.0	4.5	3.8	9.4	12.9	16.7	16.7	16.7	18.2	19.6	19.9	21.1	22.8	16.7	13.3	10.0	5.6	3.8	7.1	8.2	3.8	22.8	12.2	24
27	7.8	10.1	10.4	10.8	9.6	10.9	17.5	21.1	24.2	25.1	20.2	25.8	26.5	29.3	27.7	27.5	29.1	28.6	21.5	19.2	13.1	11.8	8.2	9.7	7.8	29.3	18.6	24
28	12.8	16.5	18.4	15.0	8.8	11.3	15.5	15.9	22.4	21.5	21.6	24.0	29.8	43.5	32.0	26.5	22.3	29.5	31.9	29.6	29.5	42.6	35.3	33.4	8.8	43.5	24.6	24
29	34.3	32.0	34.7	23.0	21.3	21.9	14.4	18.8	17.6	15.8	19.6	23.8	16.3	18.2	17.4	19.6	23.0	23.0	20.5	22.4	16.1	14.7	13.7	6.4	6.4	34.7	20.4	24
30	6.0	10.9	10.6	11.9	13.9	17.6	20.8	25.8	25.2	30.0	32.7	32.7	38.7	36.6	32.5	23.2	24.2	24.2	14.6	49.5	35.7	35.0	21.5	10.5	6.0	49.5	24.3	24
HOURLY MAX	34.3	32.0	34.7	34.8	30.3	30.9	30.1	31.9	39.2	36.7	38.0	40.7	41.2	43.9	45.0	38.7	37.5	36.0	35.6	49.5	35.7	42.6	35.3	33.7				
HOURLY AVG	15.6	14.9	14.5	14.1	14.0	14.7	15.7	18.9	21.8	23.5	24.8	26.5	28.1	29.5	29.5	27.7	26.5	25.1	22.4	20.7	16.7	17.9	16.8	16.7				

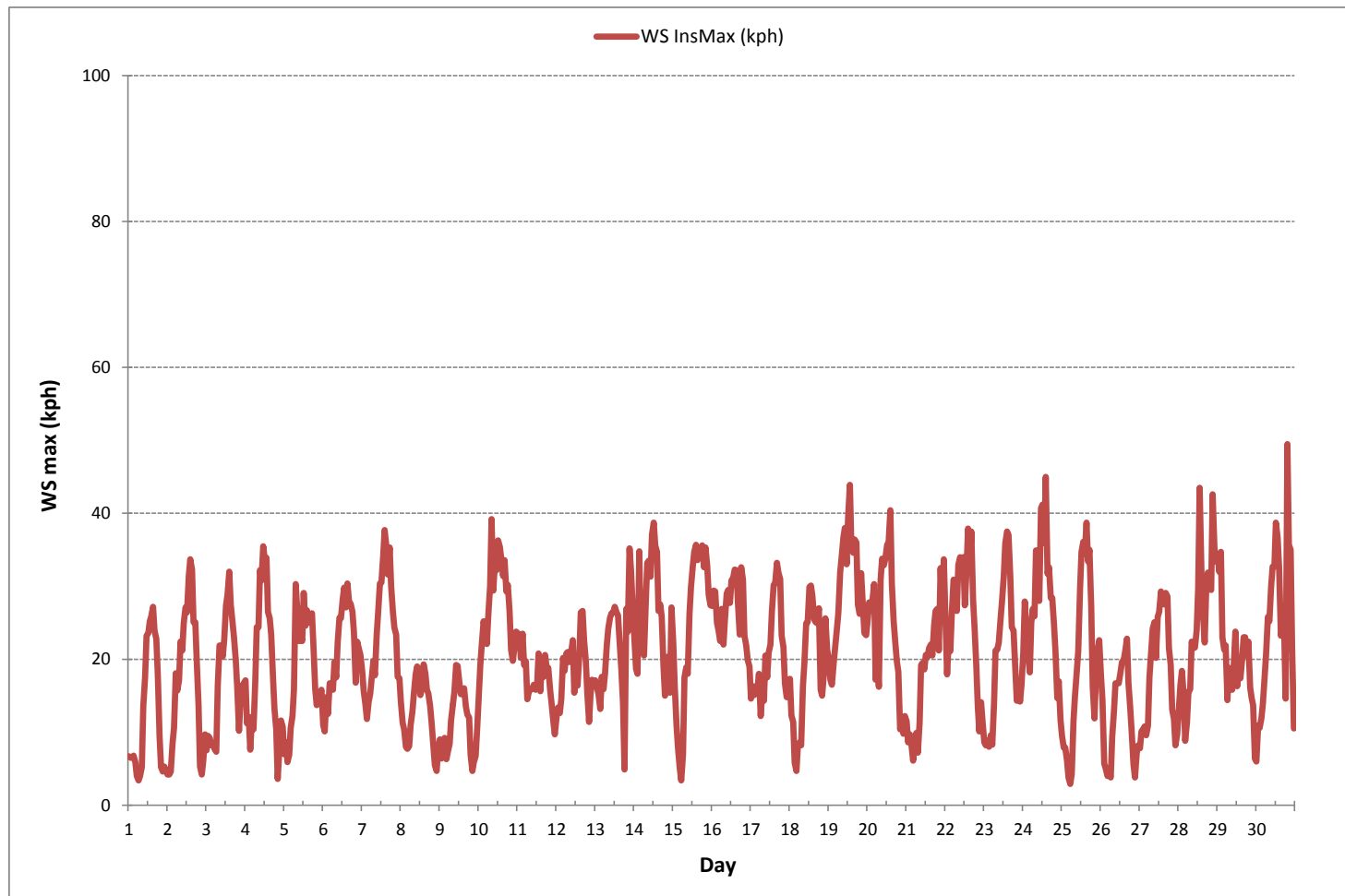
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	49.5	kph	@ HOUR	19	ON DAY	30
OPERATIONAL TIME:	720	hrs				

WIND SPEED Instantaneous Maximum (WS kph)

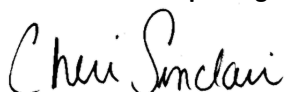


APPENDIX III
REPORT CERTIFICATION FORM

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
YES	NA
Company Name (if applicable)	Industrial Operation Name (if applicable)
Peace River Area Monitoring Program Committee	Three Creeks 842b 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.



Signature of the External Person Certifying the Report

18-May-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u>	Project #: <u>8449-2018-04-80-C</u>
Site: <u>Three Creeks 842b Station</u>	Contact: <u>Karla Reesor</u>

Level 0 Preliminary Verification



Date 08-May-2018

Level 1 Primary Validation



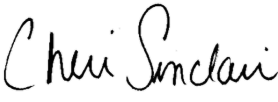
Date 08-May-2018

Level 2 Final Validation



Date 18-May-2018

Level 3 Independent Data Review



Date 18-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.