



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 #: 8449-2018-02-80-C

February 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **March 21, 2018**

Prepared by:

A handwritten signature in blue ink, appearing to read "Wunmi Adekanmbi".

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

Reviewed by:

A handwritten signature in black ink, appearing to read "Cheri Sinclair".

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

SUMMARY

In February 2018, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Three Creeks 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.

TRS: One hour of downtime was incurred on February 28, due to an additional zero-span check conducted to assess a biased high drift in span response.

THC/CH₄/NMHC: Twenty-two hours of downtime were recorded due to poor sample injections caused by a malfunction of the actuator.

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	3	5	13	11.1	SW	1	4	100.0
TRS (ppb)	-	-	-	-	0.20	0.42	8	1	2.5	NE	0.26	9	99.9
THC (ppm)	-	-	-	-	2.00	2.35	8	1	2.5	NE	2.10	7	96.7
CH ₄ (ppm)	-	-	-	-	2.00	2.35	8	1	2.5	NE	2.09	7	96.7
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	3.6	NNW	0.00	1	96.7
RELATIVE HUMIDITY (%)	-	-	-	-	75	96	13	20	12.0	WSW	85	25	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	944	963	8	12	5.7	WSW	961	8	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	-15.2	1.6	13	14	15.5	WSW	-1.0	13	100.0
STATION TEMPERATURE (°C)	-	-	-	-	20.9	22.2	8	12	5.7	WSW	21.4	24	100.0
VECTOR WS (kph)	-	-	-	-	4.3	27.1	26	23	-	SW	16.5	12	100.0
VECTOR WD (sec)	-	-	-	-	234 (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	February

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	0.003 ppm	0		0.001 ppm	0
TRS	99.9	0.000 ppm	-		0.000 ppm	-
THC	96.7	2.35 ppm	-		2.10 ppm	-
CH ₄	96.7	2.35 ppm	-		2.09 ppm	-
NMHC	96.7	0.00 ppm	-		0.00 ppm	-
RH	100.0	96 %	-		85 %	-
BP	100.0	963 mb	-		961 mb	-
Ambient TPX	100.0	1.6 °C	-		-1.0 °C	-
Station TPX	100.0	22.2 °C	-		21.4 °C	-
Wind Speed	100.0	27 kph	-		17 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	11
.....	
3.0 Plant Monthly Required AMD Summary	11
.....	
4.0 Calculations and Results	11
.....	
5.0 Methods and Procedures	12
.....	
Appendix I	
Continuous Monitoring Data Results	15
.....	
Sulphur Dioxide	16
Total Reduced Sulphur	22
Total Hydrocarbon	28
Methane	34
Non-Methane Hydrocarbon	40
Wind Speed	46
Wind Direction	51
Relative Humidity	54
Barometric Pressure	57
Ambient Temperature	60
Station Temperature	63
Appendix II	
Equipment Calibration Results	66
.....	
Sulphur Dioxide	67
Total Reduced Sulphur	70
Total Hydrocarbon	73
Wind System	77
Meteorological System Check	79

	Calibrators	81
	Calibration Gases	83
Appendix III	Maximum Instantaneous Data	87
Appendix IV	Report Certification Form	100
Appendix V	Data Validation Certification Form	102

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 February 8.

TOTAL REDUCED SULPHUR (TRS)

- Operational time for the monitoring period was 99.9%, equivalent to one hour of downtime. This was incurred due to an additional zero-span check conducted on February 28, to assess a biased high drift in span response.
- The routine monthly calibration was performed on February 8.

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

- Operational time for the monitoring period was 96.7%, equivalent to twenty-two hours of downtime.
- The routine monthly calibration was performed on February 8.
- Towards the end of the month, the analyzer started exhibiting poor sample injections, as demonstrated by sporadic minute data recorded at concentrations lower than 1.80 ppm. The actuator failed on February 28, causing the analyzer to span outside the lower acceptance limit. The actuator was replaced on March 1, following a successful shut-down calibration. Data was invalidated back to the identified point of failure, just before the failed zero-span check. THC minute concentrations < 1.80 ppm, along with the corresponding CH₄ and NMHC values, were excluded and the corresponding hourly averages were re-calculated. The following hourly averages were re-calculated: February 22 at hour 00:00, February 23 at hour 21:00 and February 27 at hour 21:00. Hourly averages with less than 45 minutes of valid data were discarded, impacting data collected on February 27 from hours 18:00-20:00. Altogether, twenty-two hours of downtime were recorded due to this event.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

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

RELATIVE HUMIDITY (RH)

- Operational time for the monitoring period was 100%.
- A humidity sensor audit was conducted on February 8. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.
- A pressure sensor audit was conducted on February 8. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on February 8. The result was satisfactory.

STATION TEMPERATURE (StnTPX)

- Operational time for the monitoring period was 100%.

2.0 Project Personnel

Kaerla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technician was Raja Ashraf.

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

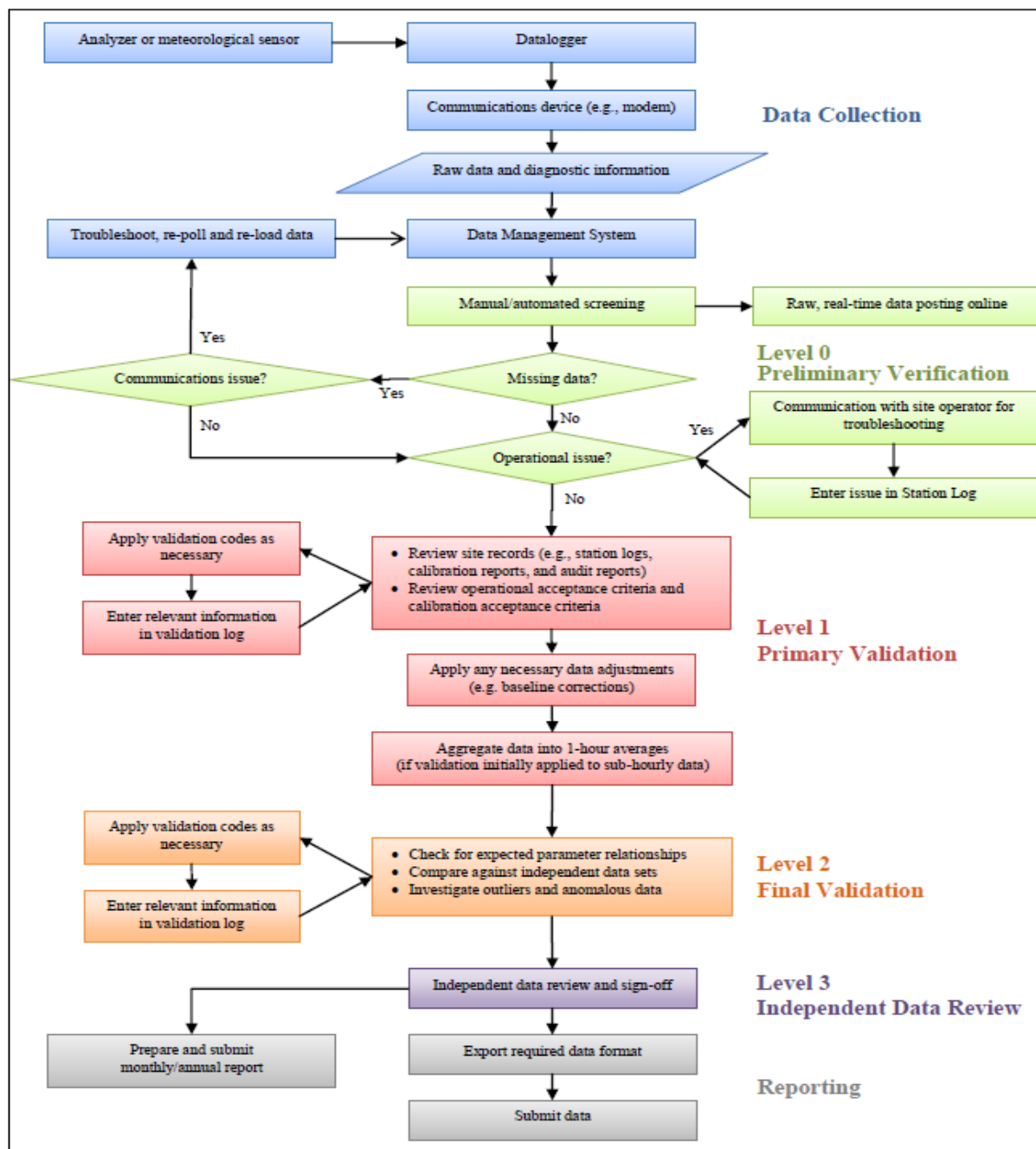
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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

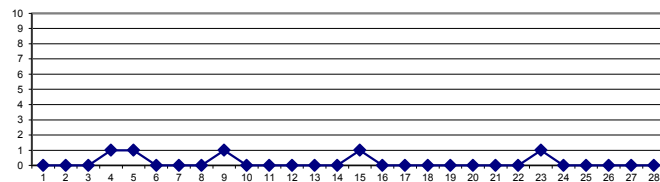
OBJECTIVE LIMIT:

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

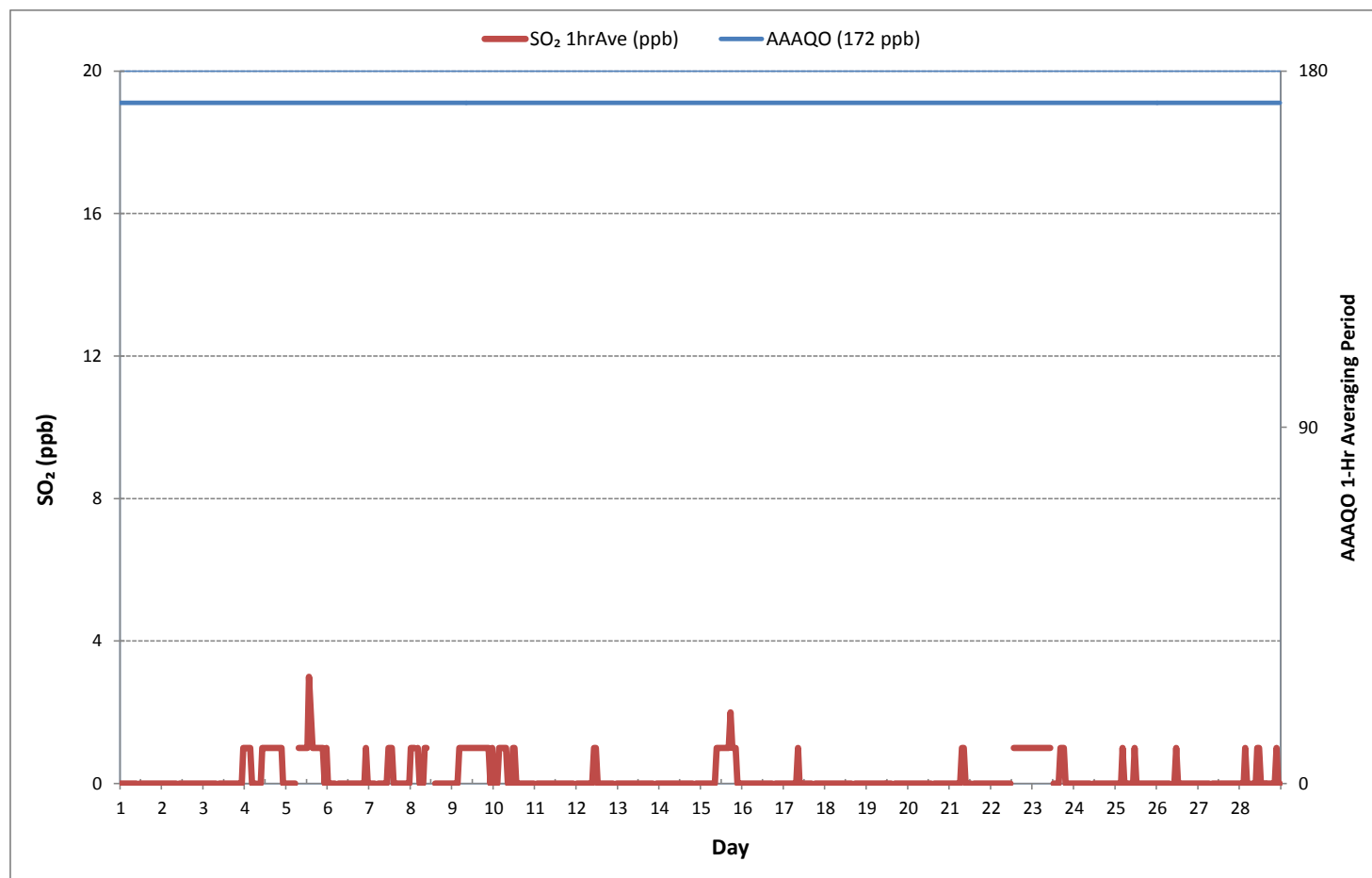
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	117
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	3 ppb @ HOUR 13 ON DAY 5
MAXIMUM 24-HR AVERAGE:	1 ppb ON DAY 4
IZS CALIBRATION TIME:	29 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	672 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

24 HR AVERAGES February 2018



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)



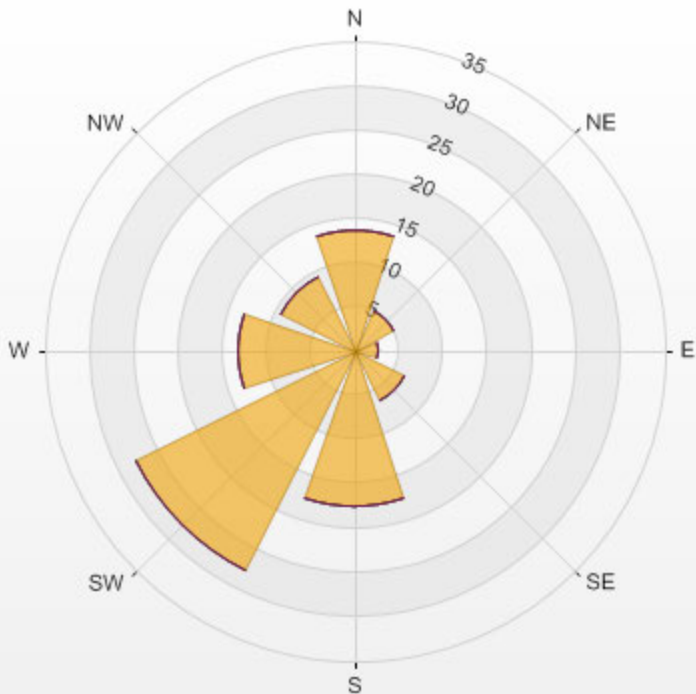
Wind: PRAMP_842
Poll.: PRAMP_842-SO₂[ppb]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 4.07%

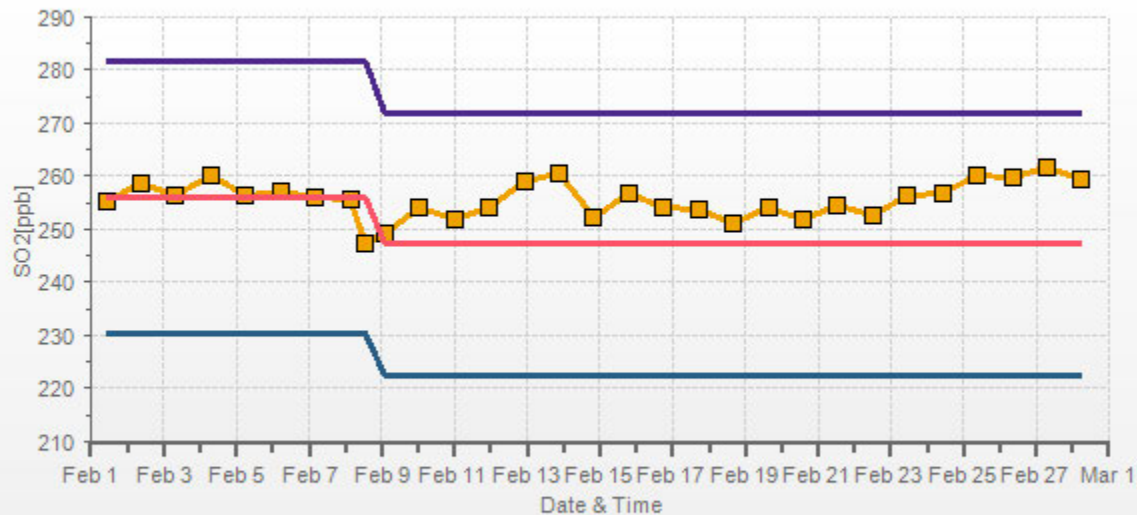
Calm Avg: 0.15 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	13.8	0.0	0.0	0.0	0.0	13.8
NE	5.0	0.0	0.0	0.0	0.0	5.0
E	2.8	0.0	0.0	0.0	0.0	2.8
SE	6.3	0.0	0.0	0.0	0.0	6.3
S	17.7	0.0	0.0	0.0	0.0	17.7
SW	27.7	0.0	0.0	0.0	0.0	27.7
W	13.3	0.0	0.0	0.0	0.0	13.3
NW	9.4	0.0	0.0	0.0	0.0	9.4
Summary	95.9	0.0	0.0	0.0	0.0	95.9

PRAMP_842 Poll.: PRAMP_842-SO2[ppb] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.07% Calm Poll Avg: 0.15[ppb]



SO2[ppb] Calibration: PRAMP_842 Monthly: 18/02 Type: Span



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

TOTAL REDUCED SULPHUR

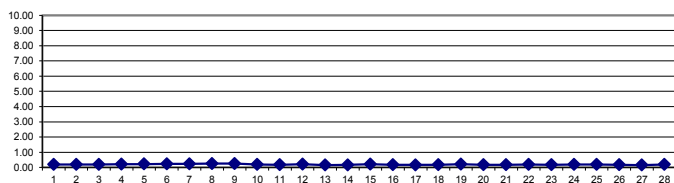
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.19	0.21	0.21	0.22	0.20	0.20	0.20	0.20	0.19	0.20	S	0.22	0.21	0.20	0.21	0.20	0.20	0.21	0.20	0.18	0.19	0.19	0.20	0.20	0.18	0.22	0.20	24
2	0.19	0.18	0.19	0.19	0.19	0.19	0.21	0.19	0.18	S	0.22	0.20	0.20	0.19	0.19	0.20	0.19	0.18	0.20	0.20	0.21	0.21	0.19	0.20	0.18	0.22	0.20	24
3	0.18	0.19	0.20	0.18	0.19	0.18	0.18	0.17	S	0.22	0.21	0.19	0.21	0.21	0.19	0.21	0.24	0.21	0.21	0.19	0.19	0.19	0.21	0.21	0.17	0.24	0.20	24
4	0.19	0.19	0.18	0.18	0.19	0.19	0.22	S	0.24	0.22	0.22	0.23	0.23	0.23	0.23	0.22	0.23	0.24	0.23	0.21	0.23	0.22	0.23	0.23	0.18	0.24	0.22	24
5	0.23	0.23	0.21	0.21	0.22	0.25	S	0.31	0.27	0.26	0.22	0.23	0.23	0.17	0.17	0.18	0.18	0.18	0.17	0.19	0.24	0.25	0.25	0.24	0.17	0.31	0.22	24
6	0.25	0.23	0.22	0.21	0.20	S	0.25	0.23	0.22	0.22	0.20	0.20	0.19	0.23	0.25	0.28	0.22	0.23	0.20	0.20	0.23	0.28	0.33	0.35	0.19	0.35	0.24	24
7	0.32	0.28	0.34	0.24	S	0.24	0.22	0.22	0.23	0.27	0.33	0.27	0.27	0.21	0.20	0.21	0.18	0.18	0.19	0.18	0.19	0.19	0.18	0.24	0.18	0.34	0.23	24
8	0.32	0.42	0.39	S	0.37	0.21	0.19	0.21	0.20	0.21	C	C	C	C	C	0.23	0.21	0.22	0.19	0.21	0.21	0.22	0.23	0.26	0.19	0.42	0.25	24
9	0.27	0.27	S	0.29	0.27	0.25	0.26	0.25	0.25	0.24	0.26	0.26	0.26	0.24	0.26	0.25	0.26	0.26	0.26	0.25	0.25	0.25	0.24	0.24	0.24	0.29	0.26	24
10	0.24	S	0.26	0.23	0.22	0.21	0.21	0.20	0.20	0.21	0.19	0.20	0.19	0.18	0.17	0.16	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.16	0.15	0.26	0.19	24
11	S	0.19	0.17	0.18	0.16	0.19	0.16	0.17	0.15	0.16	0.23	0.19	0.18	0.18	0.17	0.19	0.18	0.18	0.19	0.17	0.18	0.19	0.18	S	0.15	0.23	0.18	24
12	0.21	0.19	0.18	0.18	0.18	0.19	0.19	0.18	0.20	0.21	0.22	0.22	0.20	0.21	0.21	0.21	0.21	0.23	0.21	0.22	0.23	0.22	S	0.22	0.18	0.23	0.21	24
13	0.19	0.19	0.20	0.18	0.19	0.17	0.16	0.16	0.17	0.16	0.16	0.16	0.15	0.15	0.15	0.14	0.16	0.15	0.14	0.12	0.14	S	0.13	0.10	0.10	0.20	0.16	24
14	0.09	0.12	0.15	0.13	0.13	0.14	0.13	0.14	0.15	0.15	0.16	0.18	0.18	0.19	0.20	0.21	0.21	0.20	0.20	0.20	S	0.21	0.19	0.19	0.09	0.21	0.16	24
15	0.19	0.20	0.19	0.21	0.21	0.21	0.21	0.22	0.23	0.22	0.22	0.21	0.21	0.22	0.20	0.19	0.19	0.19	0.21	S	0.25	0.22	0.22	0.20	0.19	0.25	0.21	24
16	0.19	0.19	0.17	0.21	0.19	0.19	0.18	0.18	0.19	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.18	0.20	S	0.21	0.16	0.17	0.17	0.17	0.16	0.21	0.18	24
17	0.17	0.18	0.17	0.17	0.16	0.17	0.17	0.19	0.20	0.17	0.18	0.16	0.18	0.17	0.16	0.16	0.15	S	0.16	0.14	0.17	0.15	0.15	0.16	0.14	0.20	0.17	24
18	0.15	0.19	0.17	0.15	0.17	0.15	0.16	0.22	0.25	0.20	0.17	0.15	0.16	0.17	0.16	0.14	S	0.17	0.18	0.16	0.17	0.16	0.19	0.17	0.14	0.25	0.17	24
19	0.17	0.18	0.20	0.20	0.21	0.20	0.21	0.23	0.23	0.24	0.23	0.24	0.24	0.22	0.24	S	0.24	0.23	0.21	0.21	0.20	0.20	0.20	0.22	0.17	0.24	0.22	24
20	0.19	0.20	0.17	0.18	0.18	0.18	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.17	S	0.21	0.18	0.17	0.17	0.17	0.17	0.18	0.17	0.18	0.16	0.21	0.17	24
21	0.18	0.16	0.19	0.17	0.19	0.18	0.18	0.17	0.19	0.19	0.19	0.19	0.17	S	0.17	0.17	0.19	0.17	0.17	0.16	0.17	0.17	0.19	0.21	0.16	0.21	0.18	24
22	0.23	0.26	0.19	0.18	0.17	0.17	0.17	0.19	0.19	0.20	0.20	0.21	S	0.22	0.20	0.20	0.19	0.18	0.19	0.17	0.18	0.17	0.20	0.18	0.17	0.26	0.19	24
23	0.16	0.17	0.17	0.17	0.15	0.16	0.16	0.17	0.15	0.17	0.17	S	0.19	0.18	0.17	0.15	0.17	0.19	0.17	0.18	0.17	0.17	0.18	0.19	0.15	0.29	0.17	24
24	0.19	0.17	0.18	0.20	0.19	0.21	0.21	0.21	0.21	0.21	S	0.24	0.23	0.20	0.21	0.20	0.21	0.21	0.19	0.20	0.21	0.20	0.20	0.19	0.17	0.24	0.20	24
25	0.20	0.20	0.18	0.20	0.18	0.19	0.19	0.19	0.21	S	0.25	0.21	0.20	0.18	0.18	0.19	0.19	0.17	0.16	0.17	0.16	0.15	0.17	0.17	0.15	0.25	0.19	24
26	0.18	0.18	0.19	0.18	0.18	0.17	0.18	0.18	S	0.20	0.21	0.21	0.19	0.20	0.19	0.18	0.18	0.17	0.17	0.17	0.18	0.17	0.16	0.16	0.16	0.21	0.18	24
27	0.17	0.19	0.16	0.14	0.16	0.15	0.14	S	0.17	0.16	0.16	0.17	0.15	0.17	0.15	0.16	0.16	0.15	0.16	0.16	0.17	0.18	0.16	0.16	0.14	0.19	0.16	24
28	0.15	0.17	0.17	0.18	0.16	0.16	S	S1	0.25	0.23	0.26	0.21	0.20	0.19	0.17	0.18	0.18	0.17	0.15	0.15	0.17	0.22	0.19	0.19	0.15	0.26	0.19	23
HOURLY MAX	0.32	0.42	0.39	0.29	0.37	0.25	0.26	0.31	0.27	0.27	0.33	0.27	0.27	0.24	0.26	0.28	0.26	0.26	0.26	0.25	0.25	0.28	0.33	0.35				
HOURLY AVG	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.20	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.19	0.20	0.20	0.20				

STATUS FLAG CODES

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

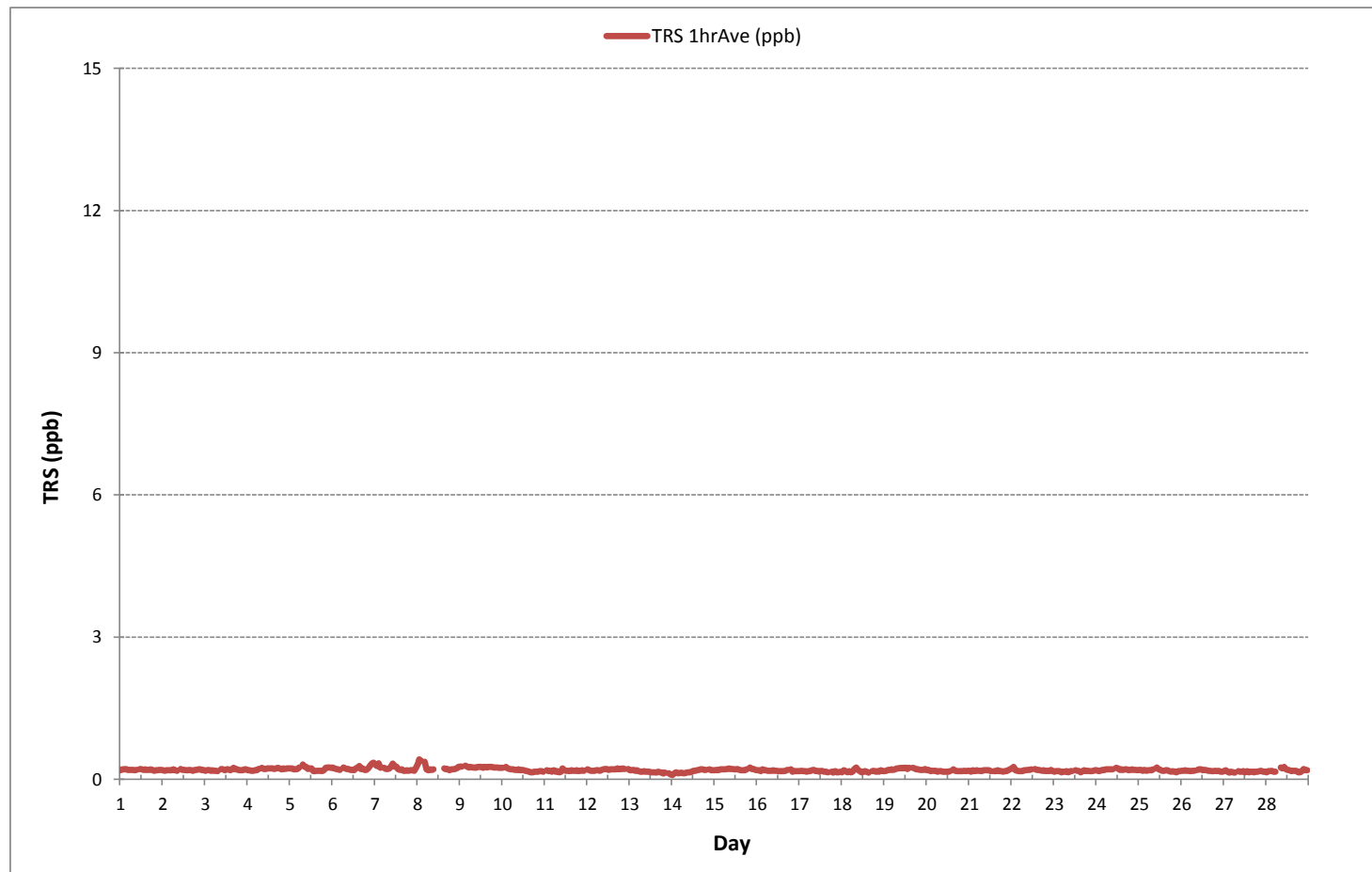
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	637			
MINIMUM 1-HR AVERAGE:	0.09	ppb @ HOUR	0	ON DAY 14
MAXIMUM 1-HR AVERAGE:	0.42	ppb @ HOUR	1	ON DAY 8
MAXIMUM 24-HR AVERAGE:	0.26	ppb		ON DAY 9
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:	671 hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.20 ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



Wind: PRAMP_842
Poll.: PRAMP_842-TRS[ppb]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

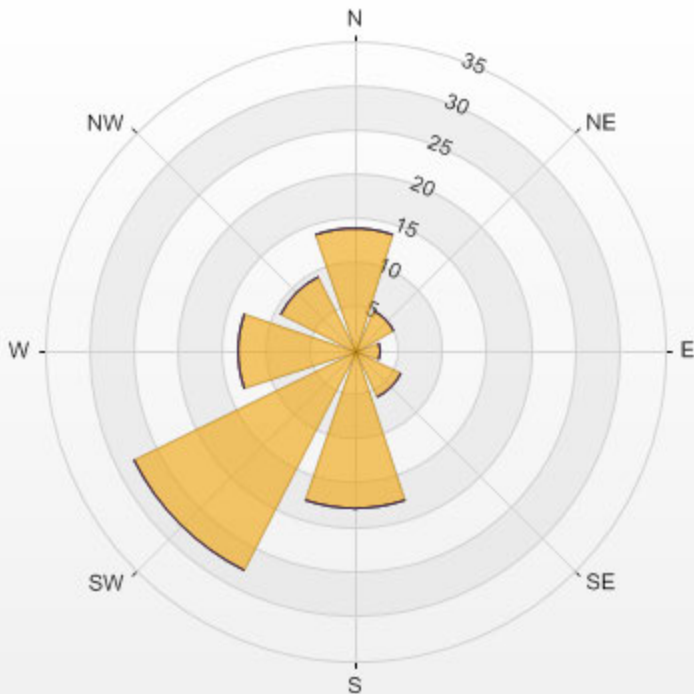
Calm: 4.09%

Calm Avg: 0.23 [ppb]

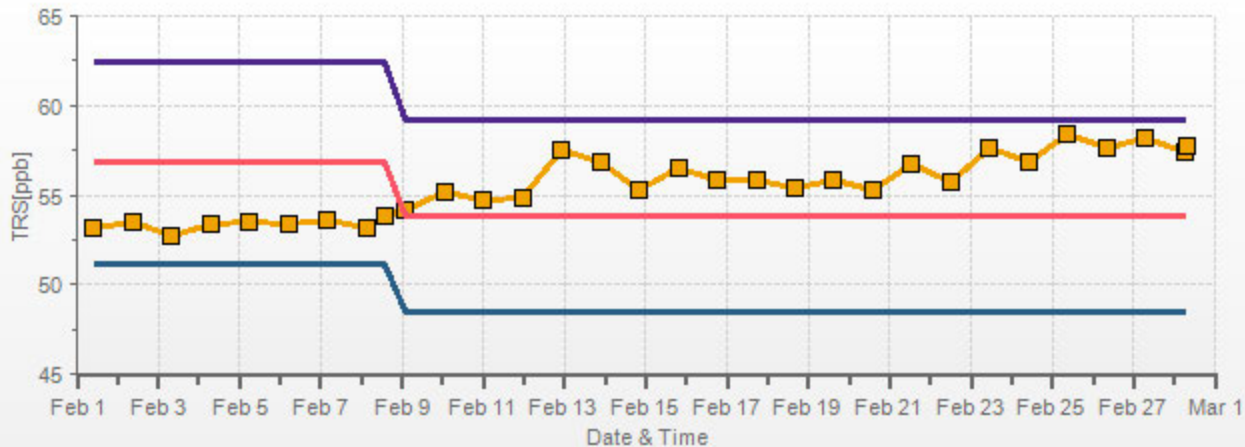
Direction	0-1	1-3	3-10	>10.0	Total
N	13.8	0.0	0.0	0.0	13.8
NE	5.0	0.0	0.0	0.0	5.0
E	2.8	0.0	0.0	0.0	2.8
SE	6.0	0.0	0.0	0.0	6.0
S	17.8	0.0	0.0	0.0	17.8
SW	27.8	0.0	0.0	0.0	27.8
W	13.2	0.0	0.0	0.0	13.2
NW	9.4	0.0	0.0	0.0	9.4
Summary	95.9	0.0	0.0	0.0	95.9

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

PRAMP_842 Poll.: PRAMP_842-TRS[ppb] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.09% Calm Poll Avg: 0.23[ppb]



TRS[ppb] Calibration: PRAMP_842 Monthly: 18/02 Type: Span



TOTAL HYDROCARBON



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

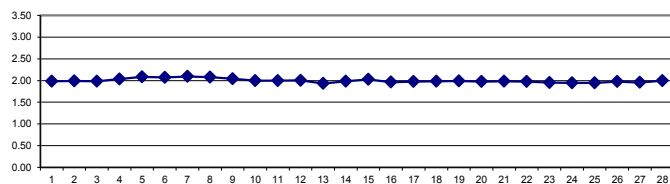
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.98	1.98	S	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.99	1.98	24	
2	1.97	1.97	1.97	1.97	1.97	1.98	2.01	2.01	1.99	S	1.99	2.00	2.00	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.97	2.01	1.99	24	
3	1.98	1.97	1.97	1.96	1.96	1.97	1.97	1.97	S	1.99	2.02	2.01	2.01	1.99	1.98	1.99	1.99	1.99	1.99	1.98	1.99	1.99	1.99	2.00	1.96	2.02	1.99	24	
4	1.99	2.00	2.00	2.00	2.01	2.01	2.01	S	2.02	2.03	2.03	2.02	2.03	2.02	2.01	2.01	2.05	2.09	2.05	2.06	2.06	2.07	2.07	2.07	1.99	2.09	2.03	24	
5	2.08	2.07	2.08	2.07	2.09	2.11	S	2.13	2.14	2.15	2.11	2.07	2.04	2.02	2.03	2.10	2.06	2.05	2.05	2.07	2.10	2.10	2.10	2.12	2.02	2.15	2.08	24	
6	2.11	2.07	2.07	2.06	2.05	S	2.06	2.06	2.06	2.05	2.02	2.01	2.00	2.03	2.02	2.01	2.00	2.00	2.02	2.02	2.08	2.15	2.29	2.32	2.00	2.32	2.07	24	
7	2.23	2.19	2.28	2.13	S	2.12	2.12	2.10	2.17	2.22	2.22	2.13	2.09	2.03	2.01	2.00	2.00	2.00	1.99	2.00	2.01	2.01	2.02	2.12	1.99	2.28	2.10	24	
8	2.23	2.35	2.34	S	2.29	2.01	1.99	1.99	2.05	2.03	2.01	2.00	2.02	C	C	C	C	2.02	2.00	2.01	2.03	2.03	2.02	2.02	1.99	2.35	2.08	24	
9	2.02	2.02	S	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.03	2.03	2.04	2.03	2.04	2.04	2.05	2.05	2.05	2.05	2.05	2.05	2.02	2.05	2.04	24	
10	2.05	S	2.03	2.02	2.00	2.02	2.02	2.00	2.01	2.02	1.99	2.02	2.03	1.98	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.96	2.05	2.00	24	
11	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2.04	2.11	2.01	2.03	2.00	1.99	1.98	1.97	1.98	1.98	1.99	1.98	1.99	1.98	S	1.97	2.11	1.99	24	
12	1.97	1.97	1.98	2.01	2.03	2.04	2.03	2.04	2.04	2.04	2.03	2.02	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.98	1.97	1.97	S	1.95	1.95	2.04	2.00	24	
13	1.94	1.94	1.96	1.95	1.93	1.92	1.92	1.94	1.93	1.94	1.92	1.92	1.94	1.96	1.91	1.91	1.92	1.92	1.92	1.93	1.92	S	1.92	1.93	1.91	1.96	1.93	24	
14	1.93	1.93	1.94	1.94	1.95	1.97	1.98	1.99	1.99	2.00	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	S	2.00	2.01	2.01	1.93	2.01	1.98	24	
15	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.04	2.04	2.02	2.03	2.03	2.01	2.01	2.01	2.00	2.00	2.02	S	2.05	2.05	2.03	2.02	2.00	2.05	2.02	24	
16	2.00	2.03	1.98	1.97	1.97	1.95	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.95	S	1.94	1.95	1.96	1.96	1.96	1.94	2.03	1.96	24
17	1.96	1.96	1.96	1.97	1.98	1.99	1.98	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.99	2.01	2.02	2.02	1.96	2.02	1.97	24	
18	2.00	1.98	1.97	1.98	1.97	1.98	1.98	1.98	1.99	1.98	2.00	1.98	1.99	1.98	1.97	1.98	S	1.98	1.97	1.97	1.97	2.00	1.97	1.98	1.97	2.00	1.98	24	
19	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	S	1.99	2.01	2.00	2.00	2.00	1.99	2.00	1.99	1.98	2.01	1.99	24	
20	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.96	1.99	1.98	24	
21	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.00	2.00	1.99	S	1.97	1.97	1.97	1.97	1.96	1.97	1.98	1.97	1.96	1.96	1.96	2.01	1.99	24	
22	1.95	1.96	1.99	2.00	2.00	1.99	1.98	1.98	1.97	1.98	1.97	1.97	S	1.97	1.98	1.98	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.96	1.95	2.00	1.97	24	
23	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.96	S	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.98	1.94	1.96	1.93	1.94	1.93	1.98	1.95	24
24	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.96	1.96	1.96	S	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	1.96	1.95	24
25	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.93	1.94	S	1.95	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	2.00	2.02	1.92	2.02	1.95	24
26	2.01	2.04	2.03	1.99	1.98	1.98	1.98	1.97	S	1.98	1.98	2.00	1.99	1.98	1.98	1.97	1.96	1.95	1.94	1.94	1.95	1.94	1.95	1.95	1.94	2.04	1.98	24	
27	1.94	1.95	1.95	1.95	1.95	1.95	1.97	S	1.95	1.96	1.95	1.95	1.96	1.95	1.95	1.96	1.97	1.95	X	X	X	1.96	1.96	1.97	1.94	1.97	1.96	21	
28	2.00	1.99	1.99	1.99	2.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.99	2.00	1.99	5	
HOURLY MAX	2.23	2.35	2.34	2.13	2.29	2.12	2.12	2.13	2.17	2.22	2.22	2.13	2.09	2.03	2.04	2.10	2.06	2.09	2.05	2.07	2.10	2.15	2.29	2.32					
HOURLY AVG	2.01	2.01	2.01	1.99	2.00	1.99	1.99	2.00	2.01	2.01	2.01	2.00	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.00	2.01					

STATUS FLAG CODES

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

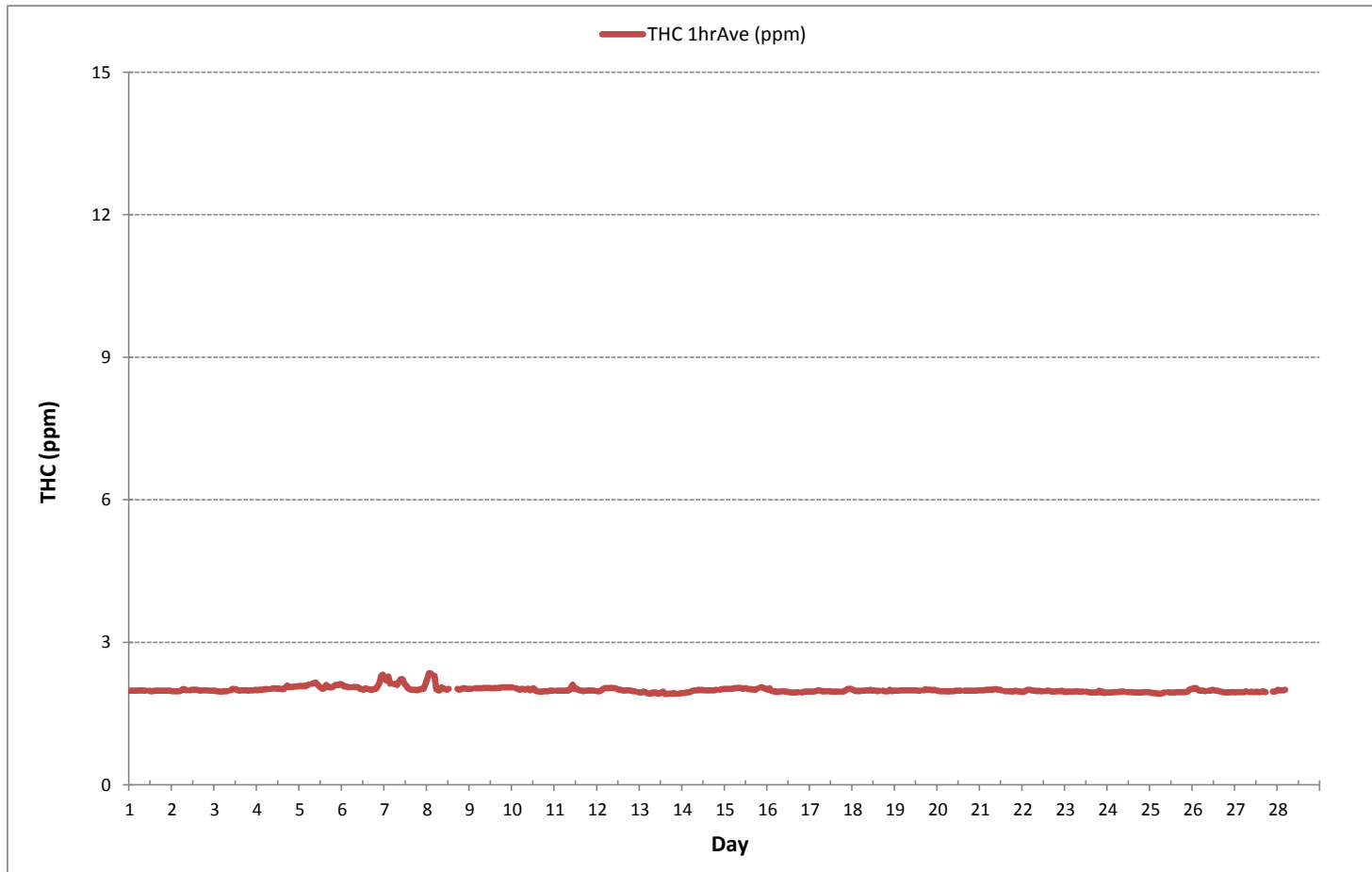
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	618			
MINIMUM 1-HR AVERAGE:	1.91	ppm	@ HOUR	14 ON DAY 13
MAXIMUM 1-HR AVERAGE:	2.35	ppm	@ HOUR	1 ON DAY 8
MAXIMUM 24-HR AVERAGE:	2.10	ppm		ON DAY 7
IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	650 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	96.7 %
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	2.00 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



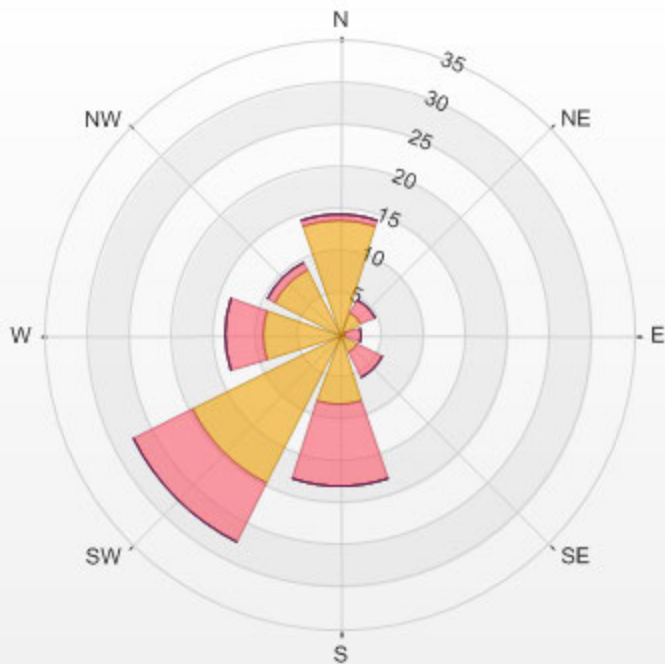
Wind: PRAMP_842
Poll.: PRAMP_842-THC55[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 4.21%

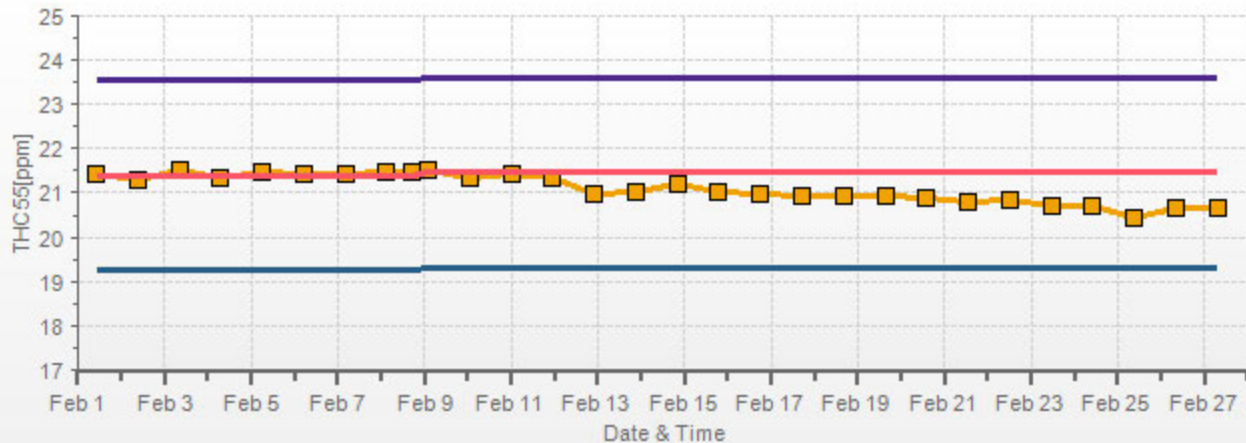
Calm Avg: 2.05 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	13.6	0.7	0.0	0.0	0.0	14.2
NE	2.9	1.8	0.0	0.0	0.0	4.7
E	0.8	1.8	0.0	0.0	0.0	2.6
SE	2.3	3.4	0.0	0.0	0.0	5.7
S	8.4	9.6	0.0	0.0	0.0	18.0
SW	19.6	7.9	0.0	0.0	0.0	27.5
W	9.2	4.4	0.0	0.0	0.0	13.6
NW	8.7	0.8	0.0	0.0	0.0	9.6
Summary	65.5	30.3	0.0	0.0	0.0	95.8

PRAMP_842 Poll.: PRAMP_842-THC55[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.21% Calm Poll Avg: 2.05 [ppm]



THC55[ppm] Calibration: PRAMP_842 Monthly: 18/02 Type: Span



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

METHANE



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

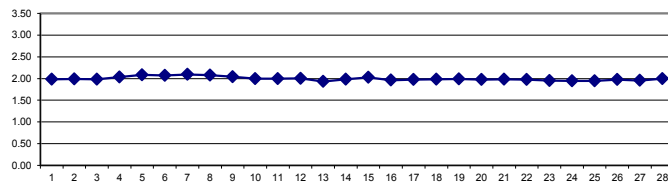
METHANE Hourly Averages (CH₄ ppm)

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	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.98	1.98	S	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.99	1.98	24
2	1.97	1.97	1.97	1.97	1.97	1.98	2.01	2.01	1.99	S	1.99	2.00	2.00	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.97	2.01	1.99	24
3	1.98	1.97	1.97	1.96	1.96	1.97	1.97	1.97	S	1.99	2.02	2.01	2.01	1.99	1.98	1.99	1.99	1.99	1.99	1.98	1.99	1.99	1.99	2.00	1.96	2.02	1.99	24
4	1.99	2.00	2.00	2.00	2.01	2.01	2.01	S	2.02	2.03	2.03	2.02	2.03	2.02	2.01	2.01	2.05	2.09	2.05	2.06	2.06	2.07	2.07	2.07	1.99	2.09	2.03	24
5	2.08	2.07	2.08	2.07	2.09	2.11	S	2.13	2.14	2.15	2.11	2.07	2.04	2.02	2.03	2.10	2.06	2.05	2.05	2.07	2.10	2.10	2.10	2.12	2.02	2.15	2.08	24
6	2.11	2.07	2.07	2.06	2.05	S	2.06	2.06	2.06	2.05	2.02	2.01	2.00	2.03	2.02	2.01	2.00	2.00	2.02	2.02	2.08	2.15	2.29	2.32	2.00	2.32	2.07	24
7	2.23	2.18	2.27	2.13	S	2.12	2.12	2.10	2.17	2.22	2.22	2.13	2.09	2.03	2.01	2.00	2.00	2.00	1.99	2.00	2.01	2.01	2.02	2.12	1.99	2.27	2.09	24
8	2.23	2.35	2.34	S	2.29	2.01	1.99	1.99	2.05	2.03	2.01	2.00	2.02	C	C	C	C	2.02	2.00	2.01	2.03	2.03	2.02	2.02	1.99	2.35	2.08	24
9	2.02	2.02	S	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.03	2.03	2.04	2.03	2.04	2.04	2.05	2.05	2.05	2.05	2.05	2.05	2.02	2.05	2.04	24
10	2.05	S	2.03	2.02	2.00	2.02	2.02	2.00	2.01	2.02	1.99	2.02	2.03	1.98	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.97	1.98	1.96	2.05	1.99	24
11	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2.04	2.11	2.01	2.03	2.00	1.98	1.98	1.97	1.98	1.98	1.99	1.98	1.98	1.98	S	1.97	2.11	1.99	24
12	1.97	1.97	1.98	2.01	2.03	2.04	2.03	2.04	2.04	2.04	2.03	2.02	2.00	2.00	1.99	1.98	1.99	1.99	1.99	1.98	1.97	1.97	S	1.95	1.95	2.04	2.00	24
13	1.94	1.94	1.96	1.95	1.93	1.92	1.92	1.94	1.93	1.94	1.92	1.92	1.94	1.96	1.91	1.91	1.92	1.92	1.92	1.93	1.92	S	1.92	1.93	1.91	1.96	1.93	24
14	1.93	1.93	1.94	1.94	1.95	1.97	1.98	1.99	1.99	2.00	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	S	2.00	2.01	2.01	1.93	2.01	1.98	24
15	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.04	2.04	2.02	2.03	2.03	2.01	2.01	2.01	2.00	2.00	2.02	S	2.05	2.05	2.03	2.02	2.00	2.05	2.02	24
16	2.00	2.03	1.98	1.97	1.97	1.95	1.96	1.96	1.97	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.94	S	1.94	1.95	1.96	1.96	1.96	1.94	2.03	1.96	24
17	1.96	1.96	1.96	1.97	1.98	1.99	1.98	1.96	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.99	2.01	2.02	2.02	1.96	2.02	1.97	24
18	2.00	1.98	1.97	1.98	1.97	1.98	1.98	1.98	1.99	1.98	2.00	1.98	1.99	1.98	1.97	1.98	S	1.98	1.97	1.97	1.97	2.00	1.97	1.98	1.97	2.00	1.98	24
19	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	S	1.99	2.01	2.00	2.00	2.00	1.99	2.00	1.99	1.98	2.01	1.99	24
20	1.98	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.96	1.99	1.98	24
21	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.00	2.01	2.01	2.00	1.99	S	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.98	1.97	1.96	1.96	1.96	2.01	1.99	24
22	1.95	1.96	1.99	2.00	2.00	1.99	1.98	1.98	1.97	1.98	1.97	S	1.97	1.97	1.98	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.96	1.95	2.00	1.97	24
23	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.96	1.96	S	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.96	1.96	1.93	1.94	1.93	1.98	1.95	24
24	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.96	1.96	S	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	1.96	1.95	24
25	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.93	1.94	S	1.95	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.96	2.00	2.02	1.92	2.02	1.95	24
26	2.01	2.04	2.03	1.99	1.98	1.98	1.98	1.97	S	1.98	1.98	2.00	1.99	1.98	1.98	1.97	1.96	1.95	1.94	1.94	1.95	1.94	1.95	1.95	1.94	2.04	1.98	24
27	1.94	1.95	1.95	1.95	1.95	1.95	1.97	S	1.95	1.96	1.95	1.95	1.96	1.95	1.95	1.96	1.97	1.95	X	X	X	1.96	1.96	1.97	1.94	1.97	1.96	21
28	2.00	1.99	1.99	1.99	2.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.99	2.00	1.99	5
HOURLY MAX	2.23	2.35	2.34	2.13	2.29	2.12	2.12	2.13	2.17	2.22	2.22	2.13	2.09	2.03	2.04	2.10	2.06	2.09	2.05	2.07	2.10	2.15	2.29	2.32				
HOURLY AVG	2.01	2.00	2.01	1.99	2.00	1.99	1.99	2.00	2.01	2.01	2.01	2.00	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.00	2.01				

STATUS FLAG CODES

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

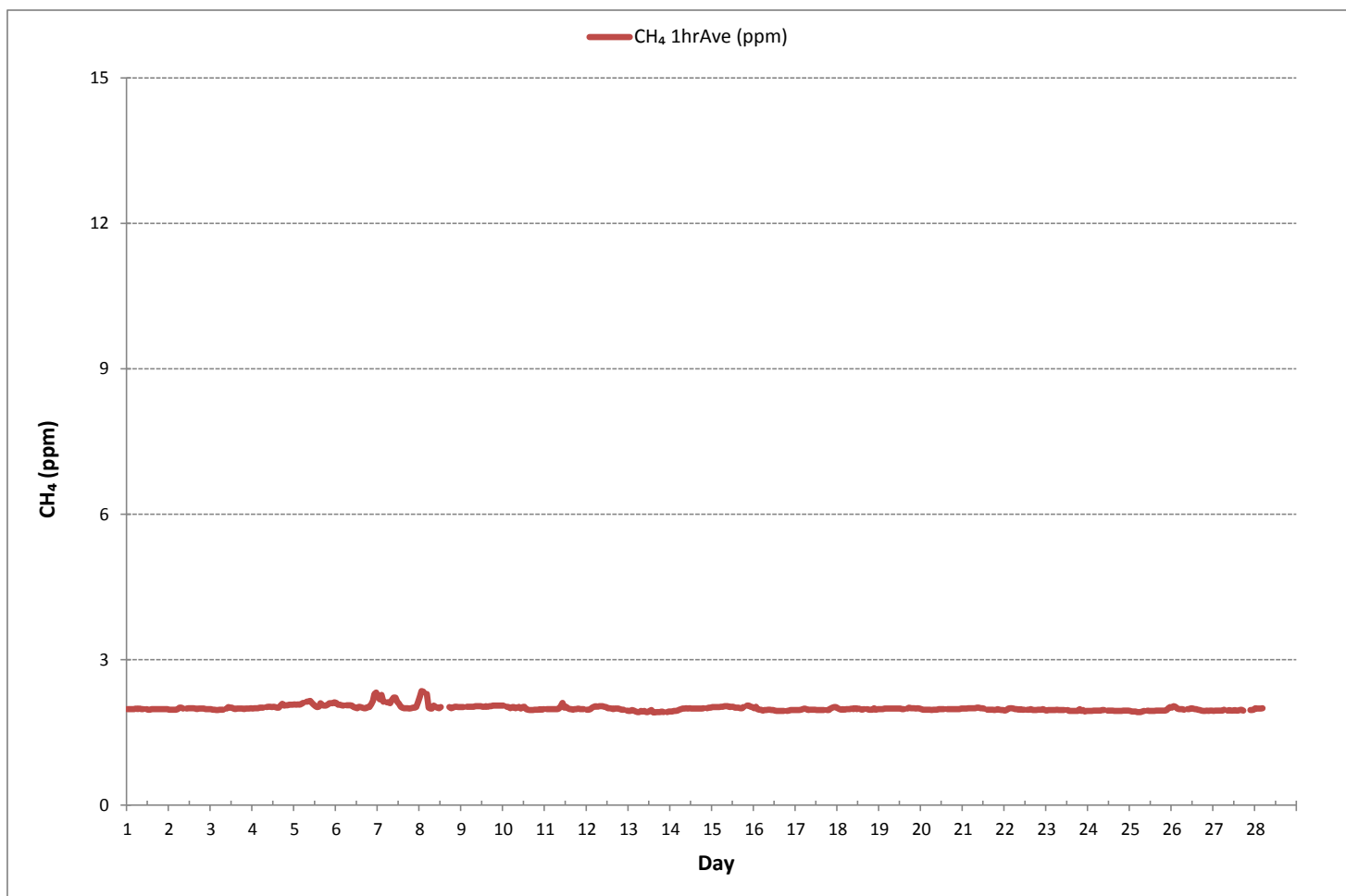
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	618			
MINIMUM 1-HR AVERAGE:	1.91	ppm	@ HOUR	14 ON DAY 13
MAXIMUM 1-HR AVERAGE:	2.35	ppm	@ HOUR	1 ON DAY 8
MAXIMUM 24-HR AVERAGE:	2.09	ppm		ON DAY 7
IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	650 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	96.7 %
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	2.00 ppm

METHANE Hourly Averages (CH₄ ppm)



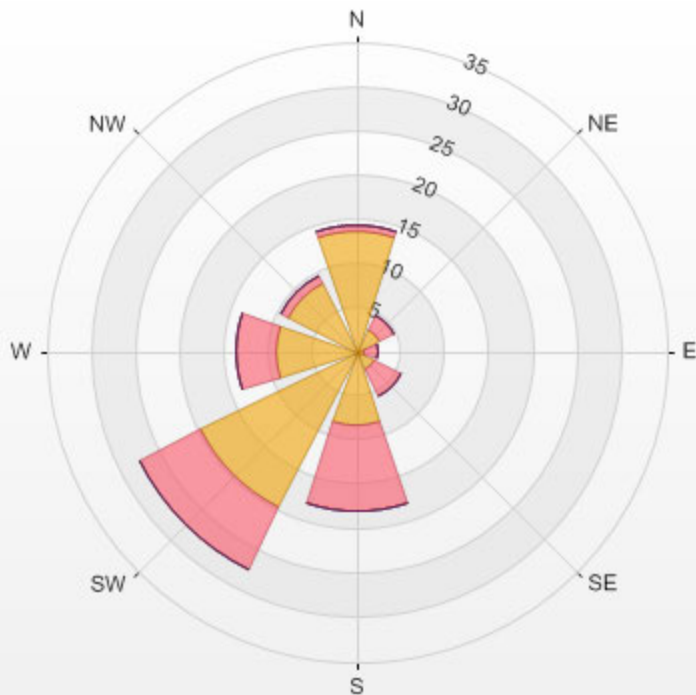
Wind: PRAMP_842
Poll.: PRAMP_842-CH₄[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 4.21%

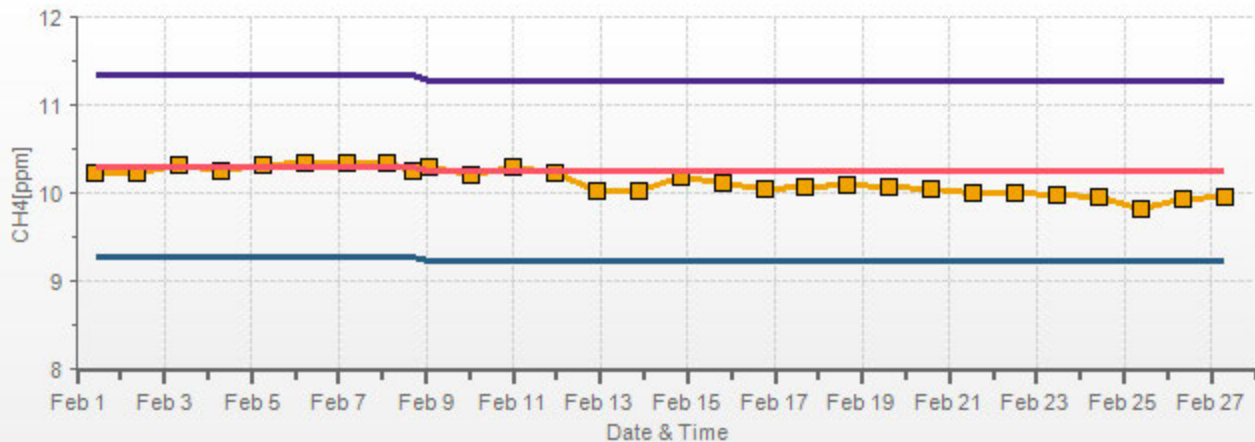
Calm Avg: 2.05 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	13.6	0.7	0.0	0.0	0.0	14.2
NE	2.9	1.8	0.0	0.0	0.0	4.7
E	0.8	1.8	0.0	0.0	0.0	2.6
SE	2.3	3.4	0.0	0.0	0.0	5.7
S	8.4	9.6	0.0	0.0	0.0	18.0
SW	19.7	7.8	0.0	0.0	0.0	27.5
W	9.2	4.4	0.0	0.0	0.0	13.6
NW	8.7	0.8	0.0	0.0	0.0	9.6
Summary	65.7	30.1	0.0	0.0	0.0	95.8

PRAMP_842 Poll.: PRAMP_842-CH4[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.21% Calm Poll Avg: 2.05[ppm]



CH4[ppm] Calibration: PRAMP_842 Monthly: 18/02 Type: Span



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

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 2018

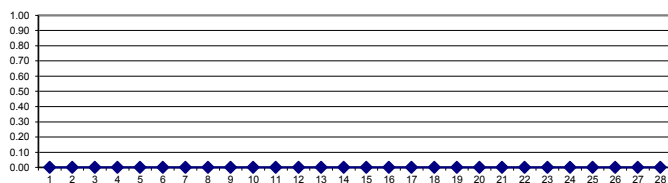
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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

STATUS FLAG CODES

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

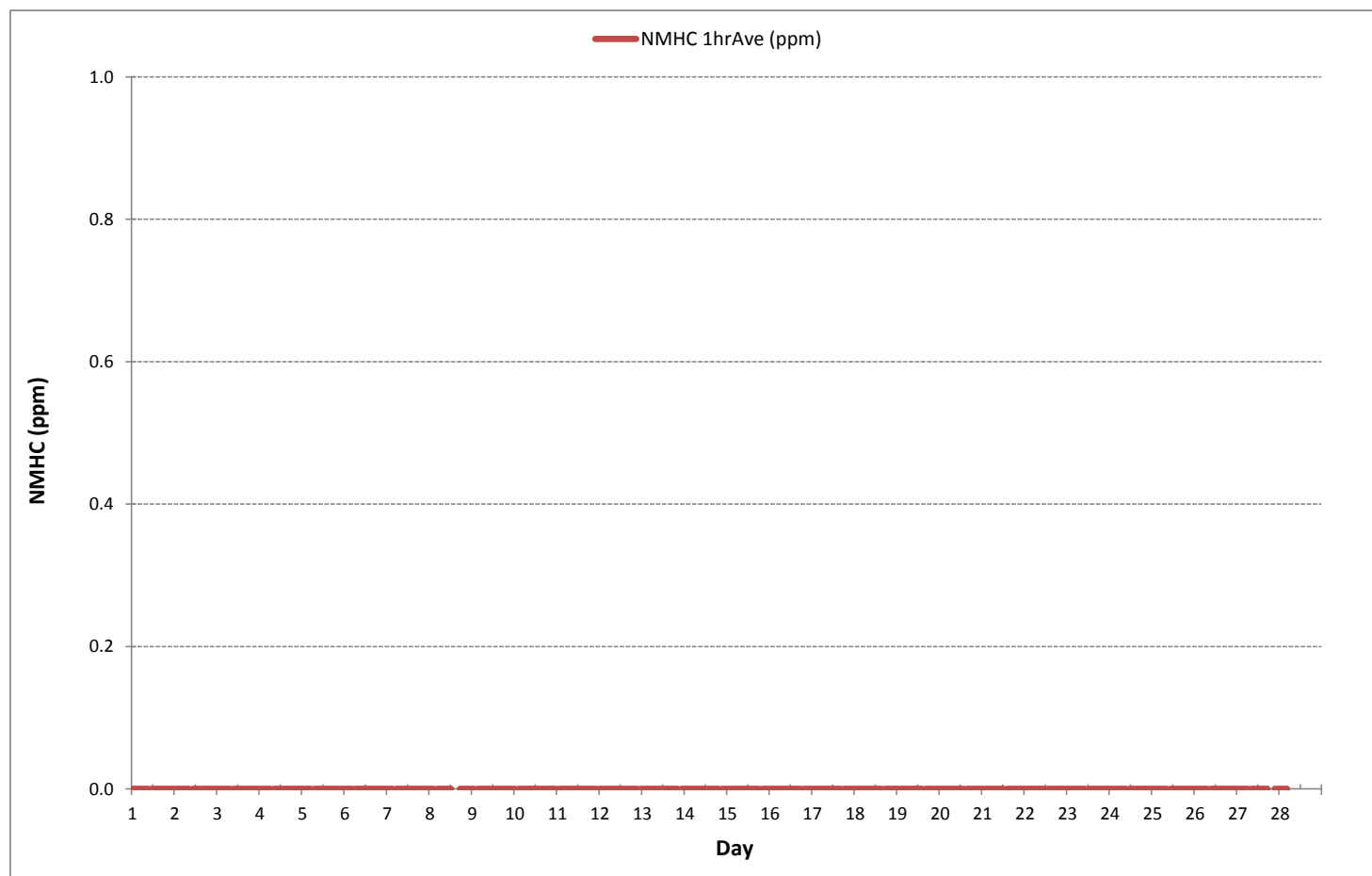
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY 1
IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	650	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	96.7	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



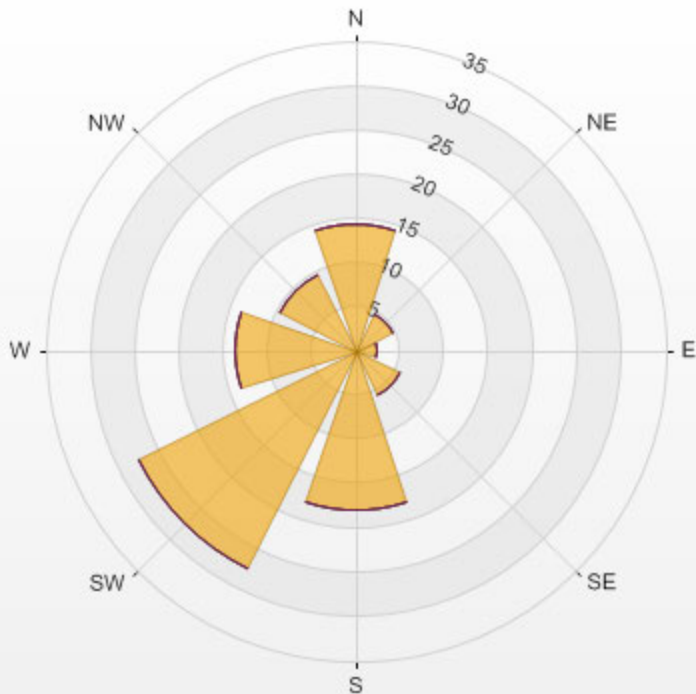
Wind: PRAMP_842
Poll.: PRAMP_842-NMHC[ppm]
Monthly: 18/02
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 4.21%

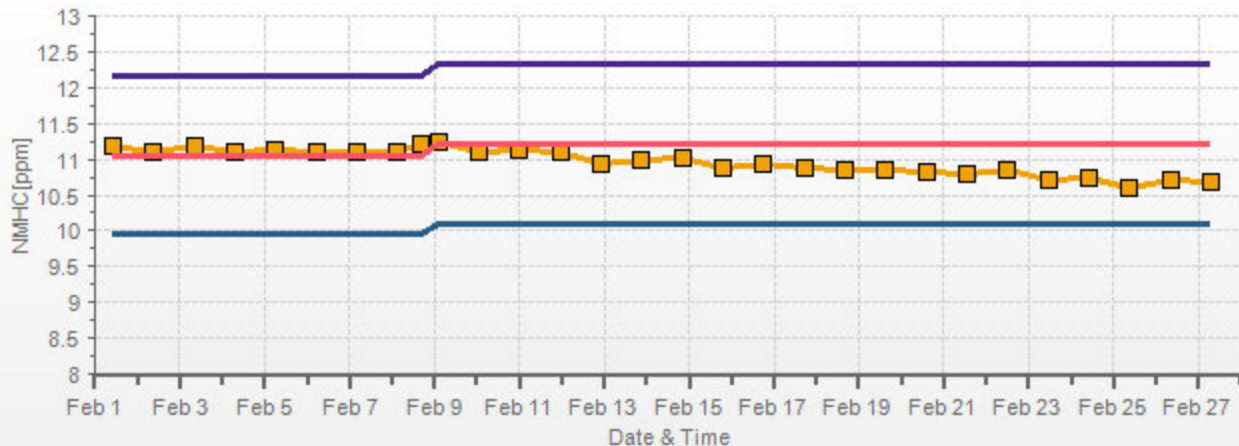
Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	14.2	0.0	0.0	0.0	0.0	14.2
NE	4.7	0.0	0.0	0.0	0.0	4.7
E	2.6	0.0	0.0	0.0	0.0	2.6
SE	5.7	0.0	0.0	0.0	0.0	5.7
S	18.0	0.0	0.0	0.0	0.0	18.0
SW	27.5	0.0	0.0	0.0	0.0	27.5
W	13.6	0.0	0.0	0.0	0.0	13.6
NW	9.6	0.0	0.0	0.0	0.0	9.6
Summary	95.8	0.0	0.0	0.0	0.0	95.8

PRAMP_842 Poll.: PRAMP_842-NMHC[ppm] 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.21% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_842 Monthly: 18/02 Type: Span



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

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

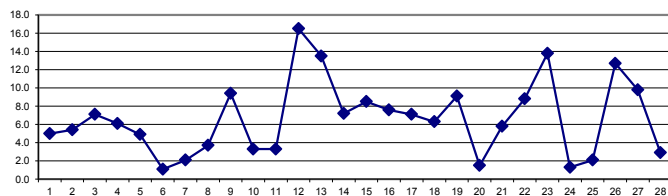
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	3.6	4.5	4.2	5.5	5.0	5.9	5.0	5.1	5.5	5.4	6.4	4.6	8.7	8.4	6.4	6.1	6.2	5.3	4.3	6.0	4.3	2.7	3.2	3.2	2.7	8.7	5.0	24
2	3.3	3.6	3.8	3.8	3.9	3.7	3.7	3.7	5.3	6.7	7.6	7.2	8.2	8.5	8.6	8.2	6.7	7.7	6.5	6.6	6.8	6.4	6.4	6.8	3.3	8.6	5.4	24
3	7.0	7.7	7.6	6.7	5.7	2.9	0.8	1.9	3.4	4.6	6.9	8.4	10.0	11.1	11.7	14.9	14.9	14.4	16.1	16.4	17.2	15.4	13.5	13.6	0.8	17.2	7.1	24
4	14.8	15.5	11.3	10.4	7.9	8.6	6.5	7.6	6.9	6.5	6.3	6.3	11.9	8.7	4.3	3.7	5.3	5.7	4.1	3.6	4.1	3.7	3.1	1.9	1.9	15.5	6.1	24
5	3.0	3.2	3.2	4.6	5.5	5.6	4.1	6.9	7.2	10.3	12.1	10.8	9.9	11.1	8.4	7.6	6.9	5.4	7.0	5.3	5.5	1.1	2.1	4.3	1.1	12.1	4.9	24
6	3.1	3.6	3.6	3.3	2.6	2.9	0.6	1.1	1.9	2.9	4.9	5.3	7.0	8.9	7.0	2.0	1.5	0.9	0.1	2.5	5.0	5.0	6.3	5.0	0.1	8.9	1.1	24
7	3.5	2.8	1.7	5.1	0.5	1.4	0.5	2.9	1.1	2.2	3.1	3.0	2.1	2.3	4.1	8.0	3.8	3.2	3.3	4.4	3.4	4.3	4.3	3.5	0.5	8.0	2.1	24
8	1.8	2.5	1.1	0.8	1.5	4.7	4.9	3.1	1.4	0.9	3.4	4.3	5.7	5.6	5.5	5.9	6.3	9.3	9.0	10.5	12.7	11.7	9.1	8.9	0.8	12.7	3.7	24
9	11.5	11.4	6.7	10.4	10.3	10.4	9.1	8.8	9.0	9.0	13.0	12.4	13.3	13.8	12.6	12.7	12.9	8.3	8.7	9.5	6.0	5.3	5.3	3.6	3.6	13.8	9.4	24
10	3.9	4.2	2.9	4.9	10.2	10.1	8.4	7.6	7.4	5.9	5.9	6.5	5.4	7.0	9.1	8.6	8.0	9.0	9.6	13.7	14.0	15.3	12.3	2.9	15.3	3.3	24	
11	8.9	6.8	6.3	2.9	1.8	1.7	0.9	1.5	2.1	3.7	2.1	5.0	8.7	9.5	10.9	10.8	11.0	9.2	10.1	10.4	10.4	11.0	9.3	11.6	0.9	11.6	3.3	24
12	13.5	19.1	16.1	14.6	16.9	13.2	14.1	14.9	15.6	17.9	20.9	17.3	18.0	17.5	16.6	17.7	18.3	19.9	18.0	17.7	16.1	18.4	16.8	17.4	13.2	20.9	16.5	24
13	20.0	22.9	21.0	19.0	16.2	20.8	20.2	19.0	18.6	15.4	18.5	14.9	5.8	12.2	15.5	18.3	18.7	14.4	13.3	10.8	12.0	10.5	17.1	17.3	5.8	22.9	13.5	24
14	19.9	18.9	20.4	18.1	14.7	15.0	15.4	13.3	10.6	9.6	10.0	11.0	9.7	8.8	8.5	4.9	2.9	4.3	5.0	5.2	6.6	4.7	3.8	3.0	2.9	20.4	7.2	24
15	4.5	4.3	7.2	6.9	5.9	5.1	5.6	4.9	6.2	9.8	14.1	15.7	14.4	15.2	14.3	13.2	12.2	13.6	12.1	12.3	10.1	8.5	8.5	8.8	4.3	15.7	8.5	24
16	8.3	9.9	8.0	5.6	4.4	5.2	9.9	8.7	9.8	10.2	10.8	12.5	14.8	12.9	12.5	10.7	10.1	7.7	8.8	9.8	11.5	10.3	7.3	6.9	4.4	14.8	7.6	24
17	6.0	7.5	5.1	5.0	2.3	5.2	5.1	11.5	10.0	10.3	11.2	11.1	13.2	13.8	17.0	17.0	12.2	7.9	2.6	3.0	5.3	5.1	3.5	4.5	2.3	17.0	7.1	24
18	6.0	4.6	6.2	6.2	8.7	7.2	6.4	5.1	4.1	4.9	7.5	7.6	9.3	10.7	9.8	12.4	10.6	8.8	4.4	3.2	6.3	8.1	6.8	5.7	3.2	12.4	6.3	24
19	10.3	12.0	11.8	11.6	12.3	9.5	10.8	7.5	9.9	11.3	13.2	12.8	12.6	15.0	14.5	16.2	12.6	8.5	3.0	1.6	1.7	1.5	0.9	0.9	0.9	16.2	9.1	24
20	4.0	9.4	7.4	7.1	4.8	4.7	4.9	6.7	6.8	8.2	9.8	10.3	11.0	10.9	7.1	10.3	10.1	10.1	8.9	9.3	5.1	8.8	11.1	10.9	4.0	11.1	1.5	24
21	9.7	10.2	11.6	11.6	11.7	11.7	9.0	11.1	10.5	9.6	9.8	8.4	8.1	6.0	10.2	9.0	6.0	5.8	5.4	6.7	7.4	6.3	5.8	1.1	1.1	11.7	5.8	24
22	2.6	4.6	4.9	2.3	3.3	7.4	7.5	4.7	4.2	6.8	7.1	9.7	13.6	14.8	15.0	15.3	14.2	13.8	10.6	6.7	11.1	13.2	14.7	17.7	2.3	17.7	8.8	24
23	16.5	17.2	14.1	16.4	18.8	14.6	18.1	23.0	20.0	16.9	16.5	19.0	19.2	21.2	20.6	17.1	13.2	15.1	7.0	7.8	11.2	7.2	9.7	8.4	7.0	23.0	13.8	24
24	12.3	12.1	11.5	10.9	8.5	9.1	10.8	7.6	5.4	5.7	4.9	2.7	6.1	7.2	6.3	7.4	7.1	5.2	3.2	4.1	5.7	7.2	8.4	7.8	2.7	12.3	1.3	24
25	9.8	7.3	6.7	7.6	7.3	2.2	2.1	2.9	5.1	7.7	9.1	10.1	8.9	10.5	10.3	10.5	7.0	6.1	2.8	1.9	1.5	3.0	4.3	5.8	1.5	10.5	2.1	24
26	4.6	4.8	5.5	11.2	9.7	8.1	10.2	8.5	7.7	12.7	12.1	13.0	14.3	17.6	16.5	17.1	14.4	18.3	19.7	20.9	19.2	23.2	26.8	27.1	4.6	27.1	12.7	24
27	22.8	20.2	18.3	11.4	17.0	17.0	17.1	12.0	11.4	12.0	13.6	8.7	11.8	15.8	17.8	15.1	10.9	4.0	3.8	7.5	2.9	2.7	2.6	1.8	1.8	22.8	9.8	24
28	4.1	5.0	6.7	4.9	5.0	5.3	4.0	3.5	5.1	5.3	10.1	9.3	9.5	9.3	12.5	10.5	8.9	4.8	1.8	2.9	6.2	5.1	5.9	6.6	1.8	12.5	2.9	24
HOURLY MAX	22.8	22.9	21.0	19.0	18.8	20.8	20.2	23.0	20.0	17.9	20.9	19.0	19.2	21.2	20.6	18.3	18.7	19.9	19.7	20.9	19.2	23.2	26.8	27.1				
HOURLY AVG	3.1	3.2	2.7	3.2	3.7	3.5	2.9	2.9	3.0	3.6	5.2	5.8	6.8	7.7	7.7	7.4	6.6	5.6	4.7	4.6	4.2	3.5	2.8	2.9				

STATUS FLAG CODES

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

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

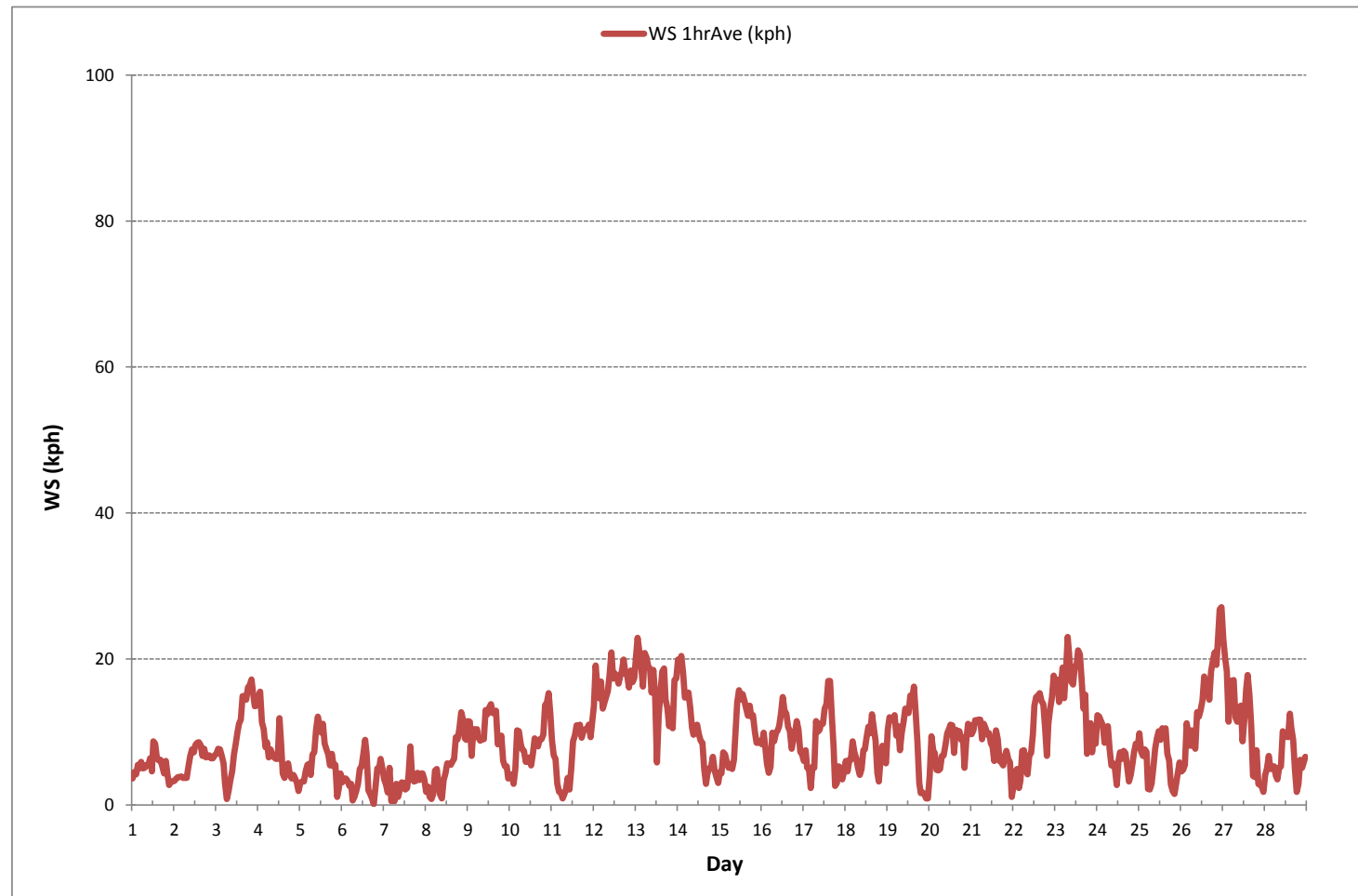
24 HR AVERAGES February 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	672				
MINIMUM 1-HR AVERAGE	0.1 kph	@ HOUR	18	ON DAY	6
MAXIMUM 1-HR AVERAGE:	27.1 kph	@ HOUR	23	ON DAY	26
MAXIMUM 24-HR AVERAGE:	16.5 kph			ON DAY	12
MONTHLY CALIBRATION TIME:	0 hrs	OPERATIONAL TIME:	672 hrs		
		AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	5.0	MONTHLY AVERAGE:	4.3 kph		

WIND SPEED Hourly Averages (WS kph)



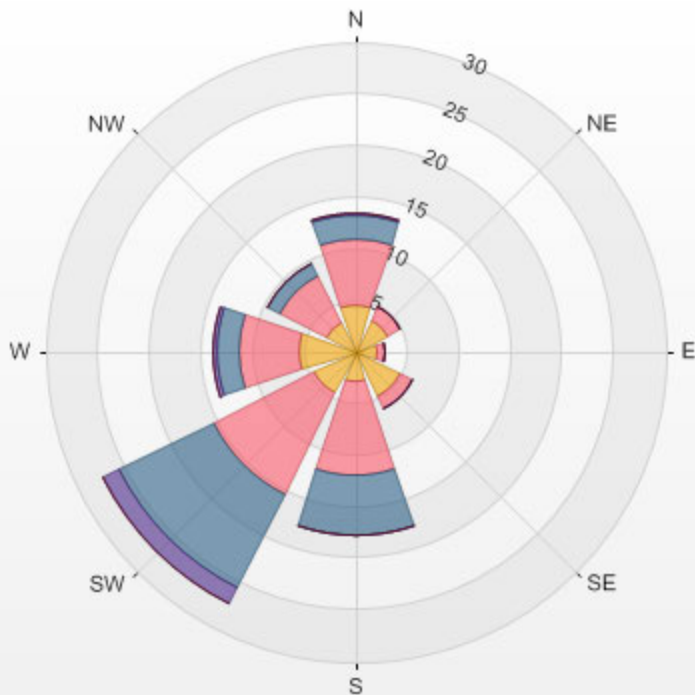
Wind: PRAMP_842
 Monitor: WSP [kph]
 Monthly: 18/02
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 4.17%

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	4.5	6.6	2.2	0.2	0.0	0.0	13.4
NE	3.4	1.5	0.0	0.0	0.0	0.0	4.9
E	2.1	0.7	0.0	0.0	0.0	0.0	2.8
SE	4.9	1.3	0.0	0.0	0.0	0.0	6.3
S	3.0	9.1	5.7	0.0	0.0	0.0	17.7
SW	4.5	11.0	10.1	1.8	0.0	0.0	27.4
W	5.5	5.8	2.1	0.5	0.0	0.0	13.8
NW	3.3	4.9	1.3	0.0	0.0	0.0	9.5
Summary	31.1	40.9	21.4	2.4	0.0	0.0	95.8

%	Icon	Classes (kph)
31		1.8-6.0
41		6.0-12.0
21		12.0-20.0
2		20.0-29.0
0		29.0-39.0
0		>39.0

PRAMP_842 2018/02/01 00:00 - 2018/02/28 23:00 Calm: 4.17% Calm Wind Avg Speed: 1.14(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

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

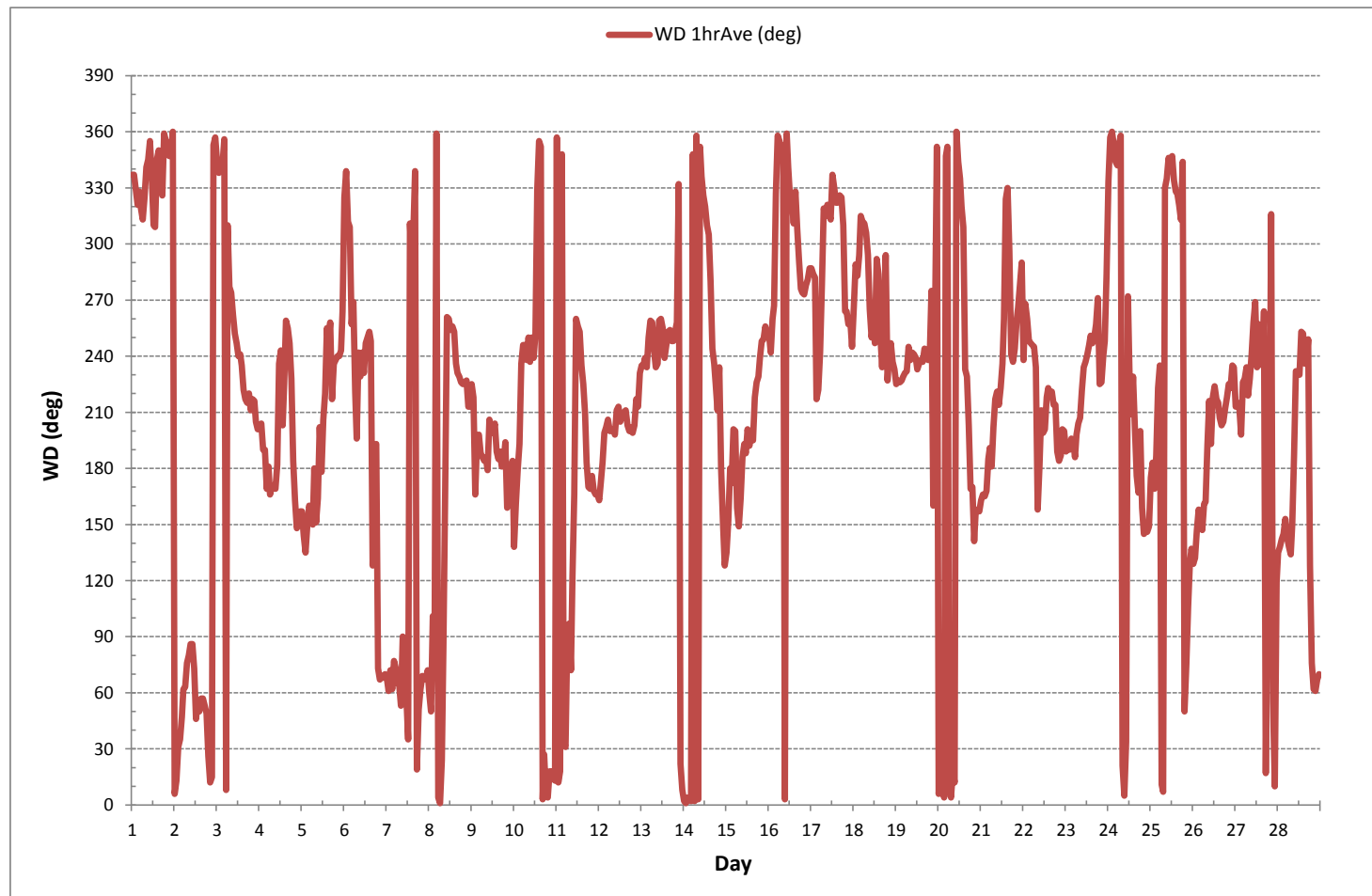
STATUS FLAG CODES

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:	672	hrs
STANDARD DEVIATION:	91		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	234 (SW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



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

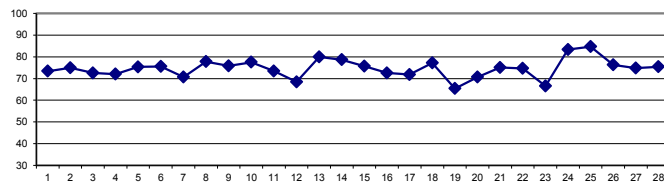
RELATIVE HUMIDITY Hourly Averages (RH %)

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	78	78	78	78	78	78	78	78	78	76	71	69	70	69	64	64	68	72	72	73	72	73	73	73	64	78	73	24
2	74	74	73	73	74	75	75	75	75	74	73	72	70	71	73	75	77	77	78	78	78	78	78	78	70	78	75	24
3	78	78	77	76	76	73	72	72	71	73	71	71	69	67	66	66	66	71	74	75	75	75	75	75	66	78	73	24
4	75	75	74	76	74	75	74	74	74	74	72	65	71	67	62	61	65	71	74	76	75	75	75	75	61	76	72	24
5	76	77	77	78	79	79	77	79	78	78	76	73	71	68	69	69	68	73	77	77	75	76	78	80	68	80	75	24
6	78	80	81	80	80	78	78	74	77	79	78	73	64	66	67	67	67	74	80	79	79	78	79	77	64	81	76	24
7	76	76	77	77	77	77	77	77	77	75	63	46	43	49	56	59	68	74	80	81	80	79	77	76	43	81	71	24
8	75	75	75	77	78	81	80	79	79	80	79	78	77	77	77	75	75	73	74	78	80	81	82	82	73	82	78	24
9	82	81	79	80	80	79	79	79	79	77	77	75	71	70	67	68	67	70	75	74	77	78	77	78	67	82	76	24
10	79	79	80	79	73	73	75	76	75	75	76	80	83	77	74	78	81	84	84	86	77	74	69	73	69	86	78	24
11	74	77	79	80	78	76	74	72	71	70	55	64	70	71	70	68	69	72	78	81	79	78	79	78	55	81	73	24
12	78	76	75	75	75	76	76	74	72	70	65	63	62	63	64	62	64	65	64	63	63	63	66	69	62	78	68	24
13	70	71	72	72	70	69	69	72	75	74	72	75	82	79	81	86	85	83	85	94	96	96	96	94	69	96	80	24
14	91	90	87	86	85	84	82	81	81	80	77	74	71	68	67	70	70	73	77	80	80	80	79	75	67	91	79	24
15	77	76	80	81	81	81	79	79	79	80	79	75	71	66	66	66	66	69	71	74	76	77	78	88	66	88	76	24
16	91	92	92	91	91	90	88	85	85	83	76	66	61	60	57	54	57	59	59	59	59	61	62	63	54	92	73	24
17	68	68	72	78	81	83	81	74	77	71	69	69	60	58	58	56	55	62	73	80	83	80	83	85	55	85	72	24
18	84	84	83	83	83	82	80	82	82	79	78	73	74	67	70	74	80	80	73	79	73	67	70	73	67	84	77	24
19	73	70	70	68	68	68	70	70	69	68	62	57	56	52	52	51	52	54	61	70	76	80	76	76	51	80	65	24
20	81	81	81	79	80	80	80	77	75	68	59	50	49	51	48	61	64	65	71	75	77	81	82	82	48	82	71	24
21	81	78	76	77	75	73	72	70	69	74	79	83	83	78	62	54	59	71	76	77	79	84	86	86	54	86	75	24
22	88	91	91	89	88	90	90	88	87	87	81	69	66	63	60	61	61	61	64	68	66	64	61	59	59	91	75	24
23	59	57	57	57	58	60	59	57	60	64	68	70	70	71	68	79	79	73	73	70	69	71	69	78	57	79	67	24
24	91	91	89	89	89	89	87	86	85	77	72	75	73	71	72	72	76	81	84	86	90	92	91	92	71	92	83	24
25	91	92	93	93	92	92	92	92	91	88	82	76	67	72	72	72	71	79	83	87	89	88	88	89	67	93	85	24
26	87	87	89	90	90	90	89	89	90	92	92	82	74	66	62	58	58	58	56	58	63	64	68	79	56	92	76	24
27	86	81	70	68	66	67	68	71	73	71	67	74	70	72	64	58	56	81	91	89	79	90	91	92	56	92	75	24
28	91	89	85	83	86	88	88	89	88	77	72	65	59	58	57	53	50	51	66	80	79	83	85	87	50	91	75	24
HOURLY MAX	91	92	93	93	92	92	92	92	91	92	92	83	83	79	81	86	85	84	91	94	96	96	96	94				
HOURLY AVG	80	79	79	79	79	79	78	78	78	76	73	70	68	67	65	66	67	71	74	77	77	77	78	79				

STATUS FLAG CODES

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

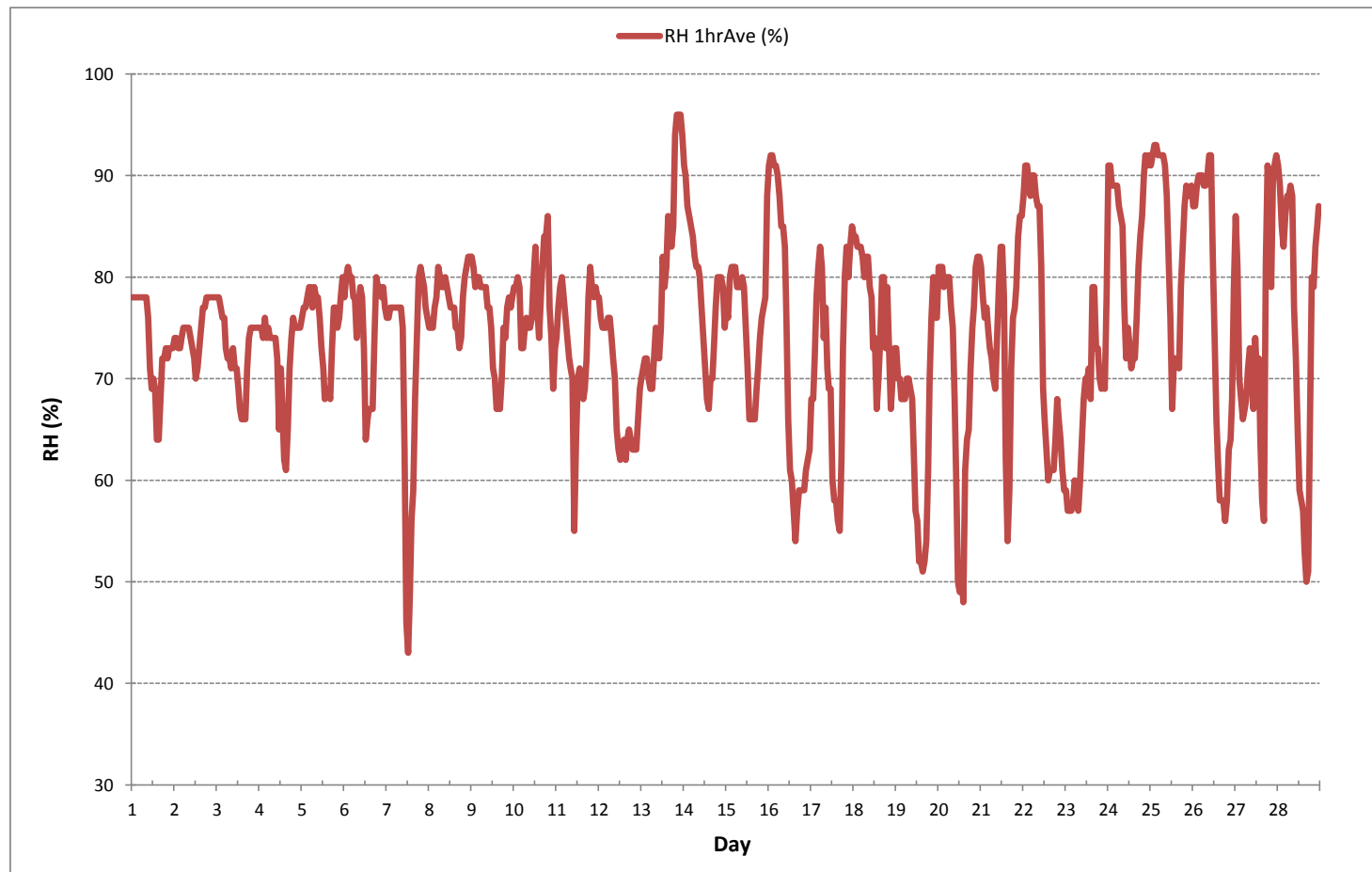
24 HR AVERAGES February 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	43	%	@ HOUR	12	ON DAY	7
MAXIMUM 1-HR AVERAGE:	96	%	@ HOUR	20	ON DAY	13
MAXIMUM 24-HR AVERAGE:	85	%			ON DAY	25
OPERATIONAL TIME:						672 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	9		MONTHLY AVERAGE:			75 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



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

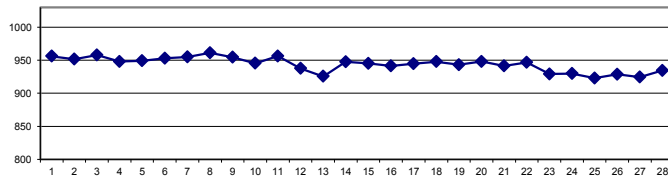
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	24
2	955	955	955	954	954	953	952	952	951	951	950	950	950	949	949	949	949	950	950	950	951	952	953	954	949	955	952	24	
3	955	956	956	957	958	959	960	960	961	961	961	961	961	960	960	959	959	958	957	956	955	954	953	952	952	945	952	948	24
4	951	950	950	949	949	949	948	948	947	947	946	945	946	946	945	945	946	947	948	949	950	951	952	952	945	952	948	24	
5	953	953	953	953	953	953	952	952	951	950	949	948	947	946	945	944	944	945	946	946	947	948	949	951	944	953	949	24	
6	952	952	953	954	954	955	955	956	956	955	955	954	953	953	952	952	951	951	952	951	951	950	950	950	950	950	956	953	24
7	951	951	952	952	952	953	954	954	955	955	955	955	955	955	955	955	956	957	957	957	957	958	958	958	958	951	958	955	24
8	959	959	959	959	960	960	960	961	961	962	962	962	963	962	962	962	962	962	962	962	962	961	961	960	959	963	961	24	
9	960	959	959	959	958	958	958	957	957	957	956	956	955	954	953	953	952	952	951	950	949	948	947	947	947	947	960	954	24
10	946	946	945	945	944	944	944	945	945	944	944	944	943	943	943	943	944	944	945	946	948	949	951	952	943	952	945	24	
11	954	955	956	957	957	958	959	959	959	959	958	958	957	957	957	957	956	955	955	954	953	952	951	951	951	959	956	24	
12	949	948	946	945	944	943	942	941	940	939	939	938	937	937	936	935	934	933	932	931	930	929	928	927	927	949	938	24	
13	927	927	927	927	927	927	927	926	926	926	925	925	925	924	924	924	924	924	924	924	924	924	925	927	924	929	926	24	
14	931	934	937	940	942	944	946	948	949	950	951	951	951	951	951	951	951	952	952	952	952	952	953	953	931	953	948	24	
15	953	953	952	951	951	951	951	950	949	948	947	946	944	943	942	941	940	939	939	938	938	938	938	938	938	938	953	945	24
16	938	937	937	937	937	937	938	939	940	941	942	942	943	943	943	944	944	945	945	945	945	945	945	946	937	946	942	24	
17	946	946	946	945	945	945	945	945	945	945	945	945	944	944	943	943	943	943	943	944	944	944	944	945	945	943	946	945	24
18	945	946	946	947	947	948	948	949	950	950	949	949	949	949	948	948	948	948	948	948	948	947	947	947	945	950	948	24	
19	946	946	945	945	944	944	943	943	943	943	942	942	942	942	941	941	941	941	942	943	944	944	944	945	941	946	943	24	
20	945	946	947	947	947	948	949	950	950	951	950	950	950	949	949	949	949	949	949	948	947	946	945	944	944	951	948	24	
21	943	942	941	941	940	939	939	939	939	939	939	939	939	940	941	942	942	942	943	944	945	945	946	946	939	946	941	24	
22	947	948	948	949	949	950	950	950	950	949	949	949	949	948	947	946	945	944	944	943	942	941	940	939	939	950	947	24	
23	938	936	935	934	933	932	931	929	928	928	928	927	927	927	927	926	926	926	926	927	926	926	926	926	926	938	929	24	
24	927	928	929	930	931	932	933	933	934	933	933	933	933	932	931	930	929	929	928	927	926	925	924	923	923	934	930	24	
25	922	921	920	919	918	918	918	918	919	919	920	921	922	923	923	924	925	926	927	928	929	929	930	930	918	930	923	24	
26	931	931	931	931	931	931	931	931	931	931	931	931	930	930	929	929	927	927	927	927	925	924	923	923	923	931	929	24	
27	923	922	922	921	921	921	921	921	922	923	923	924	925	926	926	926	926	927	927	927	927	928	928	929	929	921	929	925	24
28	929	930	930	930	931	931	932	932	933	933	934	934	935	935	935	936	936	937	938	938	939	940	940	941	929	941	935	24	
HOURLY MAX	960	959	959	959	960	960	960	961	961	962	962	962	963	962	962	962	962	962	962	962	962	961	961	960					
HOURLY AVG	944	944	944	944	944	944	944	944	945	945	944	944	944	944	943	943	943	943	943	943	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

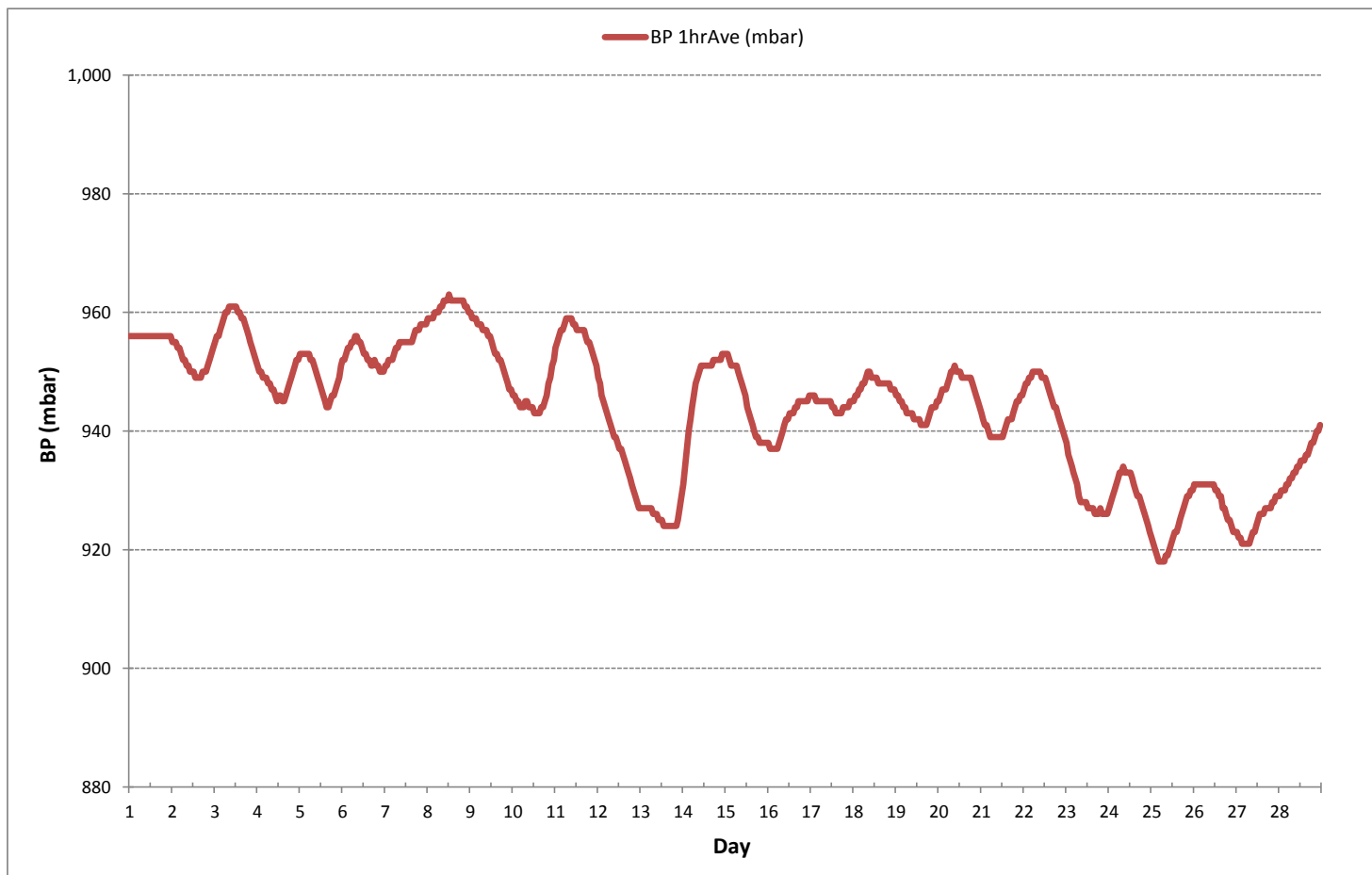
24 HR AVERAGES February 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	918	mbar	@ HOUR	4	ON DAY	25
MAXIMUM 1-HR AVERAGE:	963	mbar	@ HOUR	12	ON DAY	8
MAXIMUM 24-HR AVERAGE:	961	mbar			ON DAY	8
OPERATIONAL TIME:						672 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	11				MONTHLY AVERAGE:	944 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



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

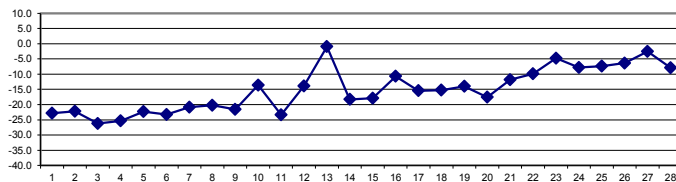
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	-21.7	-22.0	-22.2	-22.5	-23.0	-23.3	-24.3	-24.5	-24.3	-23.7	-22.6	-21.8	-22.0	-21.8	-21.1	-21.3	-22.1	-22.9	-23.0	-23.3	-23.6	-23.7	-23.7	-23.8	-24.5	-21.1	-22.8	24
2	-23.7	-23.7	-23.7	-23.7	-23.7	-23.6	-23.3	-23.2	-23.2	-22.9	-22.3	-21.4	-20.4	-20.3	-20.4	-20.8	-21.0	-21.4	-21.5	-21.6	-21.6	-21.6	-22.0	-22.2	-23.7	-20.3	-22.2	24
3	-22.6	-23.0	-23.4	-24.2	-25.6	-27.5	-30.7	-32.3	-33.0	-30.0	-26.8	-25.9	-24.8	-24.0	-23.4	-23.6	-24.4	-25.9	-26.7	-26.4	-26.5	-26.2	-26.1	-26.0	-33.0	-22.6	-26.2	24
4	-26.3	-25.7	-26.8	-27.8	-28.6	-28.3	-28.9	-29.2	-29.2	-28.4	-25.5	-22.5	-24.2	-22.4	-20.2	-19.4	-21.6	-24.0	-25.1	-26.2	-25.8	-25.1	-24.4	-23.6	-29.2	-19.4	-25.4	24
5	-23.4	-23.8	-24.2	-24.4	-25.5	-26.3	-27.1	-26.7	-26.9	-25.2	-21.7	-18.9	-18.1	-17.8	-18.0	-18.2	-18.3	-19.9	-21.2	-21.4	-21.2	-22.0	-23.0	-22.9	-27.1	-17.8	-22.3	24
6	-24.8	-25.2	-25.9	-25.3	-25.7	-27.4	-27.2	-29.5	-28.7	-24.2	-20.7	-19.6	-17.9	-18.7	-18.8	-18.5	-18.3	-19.5	-21.8	-23.3	-23.8	-24.5	-24.4	-25.2	-29.5	-17.9	-23.3	24
7	-25.0	-25.9	-24.4	-22.5	-22.9	-23.1	-23.4	-23.5	-23.8	-23.5	-18.8	-13.2	-11.9	-12.0	-12.9	-14.2	-16.8	-18.7	-20.8	-21.8	-23.3	-24.6	-25.9	-27.4	-27.4	-11.9	-20.8	24
8	-27.4	-27.0	-26.5	-24.9	-23.2	-20.3	-19.1	-18.8	-19.6	-19.2	-18.1	-17.4	-17.4	-17.3	-17.0	-16.5	-16.6	-17.0	-18.2	-19.5	-20.4	-21.0	-21.4	-21.6	-27.4	-16.5	-20.2	24
9	-22.0	-22.5	-24.9	-23.6	-23.2	-23.5	-24.5	-24.8	-24.6	-23.9	-22.1	-20.9	-19.4	-18.9	-18.0	-18.5	-18.5	-19.3	-20.3	-19.7	-21.2	-21.9	-21.0	-21.3	-24.9	-18.0	-21.6	24
10	-21.7	-22.0	-21.0	-19.4	-15.6	-15.0	-15.6	-15.3	-14.2	-12.7	-11.6	-10.9	-10.4	-8.2	-7.6	-8.2	-8.6	-9.6	-10.3	-10.8	-12.2	-13.5	-15.0	-17.3	-22.0	-7.6	-13.6	24
11	-18.9	-20.4	-21.4	-24.0	-26.1	-28.6	-29.9	-31.1	-31.9	-28.5	-20.0	-19.6	-21.0	-20.8	-20.0	-19.7	-19.9	-20.9	-22.9	-23.7	-23.1	-23.3	-22.8	-22.3	-31.9	-18.9	-23.4	24
12	-21.8	-20.2	-19.9	-19.6	-19.8	-20.3	-20.3	-19.7	-19.4	-18.6	-16.1	-14.6	-12.8	-11.5	-10.5	-9.0	-9.2	-9.1	-8.6	-7.7	-7.2	-6.6	-6.2	-5.0	-21.8	-5.0	-13.9	24
13	-4.1	-3.5	-3.2	-2.8	-1.8	-1.3	-0.9	-1.3	-1.6	-1.1	0.0	0.2	0.2	1.2	1.6	1.2	1.1	1.0	0.5	-0.2	-0.5	-1.0	-2.6	-4.1	-4.1	1.6	-1.0	24
14	-7.5	-9.9	-12.3	-13.6	-15.2	-16.6	-18.5	-19.7	-20.4	-20.4	-19.5	-19.8	-17.5	-16.1	-15.8	-14.3	-14.7	-18.6	-23.1	-23.8	-22.9	-24.7	-26.2	-28.2	-28.2	-7.5	-18.3	24
15	-28.1	-28.3	-26.3	-24.6	-24.3	-23.2	-25.2	-25.8	-25.1	-21.3	-17.9	-16.9	-15.4	-13.8	-13.1	-11.9	-10.9	-11.1	-10.8	-11.1	-11.7	-11.3	-10.8	-10.5	-28.3	-10.5	-17.9	24
16	-9.4	-8.5	-8.3	-8.5	-8.9	-9.6	-10.0	-11.0	-12.2	-12.2	-11.2	-9.7	-9.7	-9.4	-8.4	-7.8	-9.5	-11.1	-12.4	-13.0	-13.4	-13.8	-14.5	-14.9	-14.9	-7.8	-10.7	24
17	-15.9	-15.0	-15.3	-17.7	-20.3	-20.2	-18.8	-15.7	-16.4	-14.5	-13.8	-13.2	-12.0	-11.8	-11.9	-11.6	-11.6	-13.1	-16.3	-18.0	-17.5	-16.6	-16.8	-16.8	-20.3	-11.6	-15.5	24
18	-15.7	-15.0	-14.9	-14.5	-14.9	-16.3	-16.6	-18.0	-19.6	-17.4	-16.4	-15.0	-14.4	-13.0	-12.7	-12.8	-13.0	-12.8	-13.6	-15.9	-15.4	-14.9	-16.1	-16.8	-19.6	-12.7	-15.2	24
19	-16.6	-15.5	-15.4	-15.0	-14.9	-14.6	-14.5	-14.8	-14.8	-14.4	-13.5	-12.6	-11.8	-10.7	-10.3	-9.7	-9.9	-10.9	-13.6	-16.4	-17.9	-17.6	-16.2	-15.3	-17.9	-9.7	-14.0	24
20	-14.0	-13.4	-14.7	-16.2	-17.8	-18.1	-18.6	-19.2	-19.6	-19.2	-17.7	-15.5	-14.9	-14.9	-13.9	-17.6	-17.5	-18.0	-19.6	-20.5	-20.9	-21.1	-19.8	-19.2	-21.1	-13.4	-17.6	24
21	-18.7	-18.0	-17.5	-17.5	-16.8	-16.3	-16.2	-15.5	-14.8	-13.5	-12.4	-11.4	-10.4	-8.9	-5.6	-4.3	-6.2	-8.5	-9.5	-9.6	-8.6	-8.5	-7.7	-7.2	-18.7	-4.3	-11.8	24
22	-8.7	-10.9	-12.3	-14.1	-15.7	-14.2	-13.7	-13.1	-15.1	-13.5	-9.1	-7.5	-6.6	-5.9	-5.2	-5.3	-5.8	-6.1	-7.7	-9.6	-9.4	-9.4	-9.2	-9.1	-15.7	-5.2	-9.9	24
23	-9.9	-9.7	-9.9	-9.6	-9.4	-9.9	-8.3	-6.5	-5.9	-5.4	-4.5	-3.6	-2.3	-1.8	-1.5	-1.9	-1.8	-1.3	-1.4	-1.7	-1.8	-2.0	-1.8	-2.3	-9.9	-1.3	-4.8	24
24	-3.7	-5.0	-6.4	-7.1	-7.7	-8.3	-8.8	-10.1	-9.8	-8.1	-6.8	-7.6	-7.2	-7.3	-7.3	-7.1	-7.3	-7.6	-8.2	-8.7	-10.8	-9.7	-9.0	-8.7	-10.8	-3.7	-7.8	24
25	-7.2	-6.2	-6.1	-5.4	-4.7	-5.4	-7.0	-6.8	-6.2	-7.2	-6.2	-5.4	-2.9	-4.4	-4.3	-4.8	-4.9	-6.9	-8.2	-10.8	-13.2	-14.6	-14.8	-14.0	-14.8	-2.9	-7.4	24
26	-15.8	-17.0	-14.1	-11.7	-10.7	-9.6	-8.7	-8.2	-7.9	-7.8	-8.1	-6.3	-5.6	-3.7	-2.5	-1.8	-1.5	-1.5	-1.9	-1.8	-1.8	-1.6	-1.5	-1.8	-17.0	-1.5	-6.4	24
27	-2.1	-1.9	-1.3	-2.4	-2.5	-2.3	-2.1	-3.2	-3.7	-3.0	-1.7	-1.6	-0.9	-0.7	0.3	0.2	0.4	-0.9	-2.8	-3.5	-3.3	-4.4	-7.4	-9.6	-9.6	0.4	-2.5	24
28	-10.4	-9.5	-9.9	-10.3	-12.5	-12.1	-12.8	-13.5	-11.9	-6.7	-5.4	-4.4	-3.0	-2.6	-2.3	-1.5	-1.4	-2.2	-6.5	-9.8	-9.5	-10.9	-11.3	-10.5	-13.5	-1.4	-8.0	24
HOURLY MAX	-2.1	-1.9	-1.3	-2.4	-1.8	-1.3	-0.9	-1.3	-1.6	-1.1	0.0	0.2	0.2	1.2	1.6	1.2	1.1	1.0	0.5	-0.2	-0.5	-1.0	-1.5	-1.8				
HOURLY AVG	-16.7	-16.7	-16.9	-16.9	-17.2	-17.3	-17.7	-17.9	-18.0	-16.7	-14.7	-13.5	-12.7	-12.1	-11.5	-11.4	-11.8	-12.8	-14.1	-15.0	-15.3	-15.6	-15.8	-16.0				

STATUS FLAG CODES

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

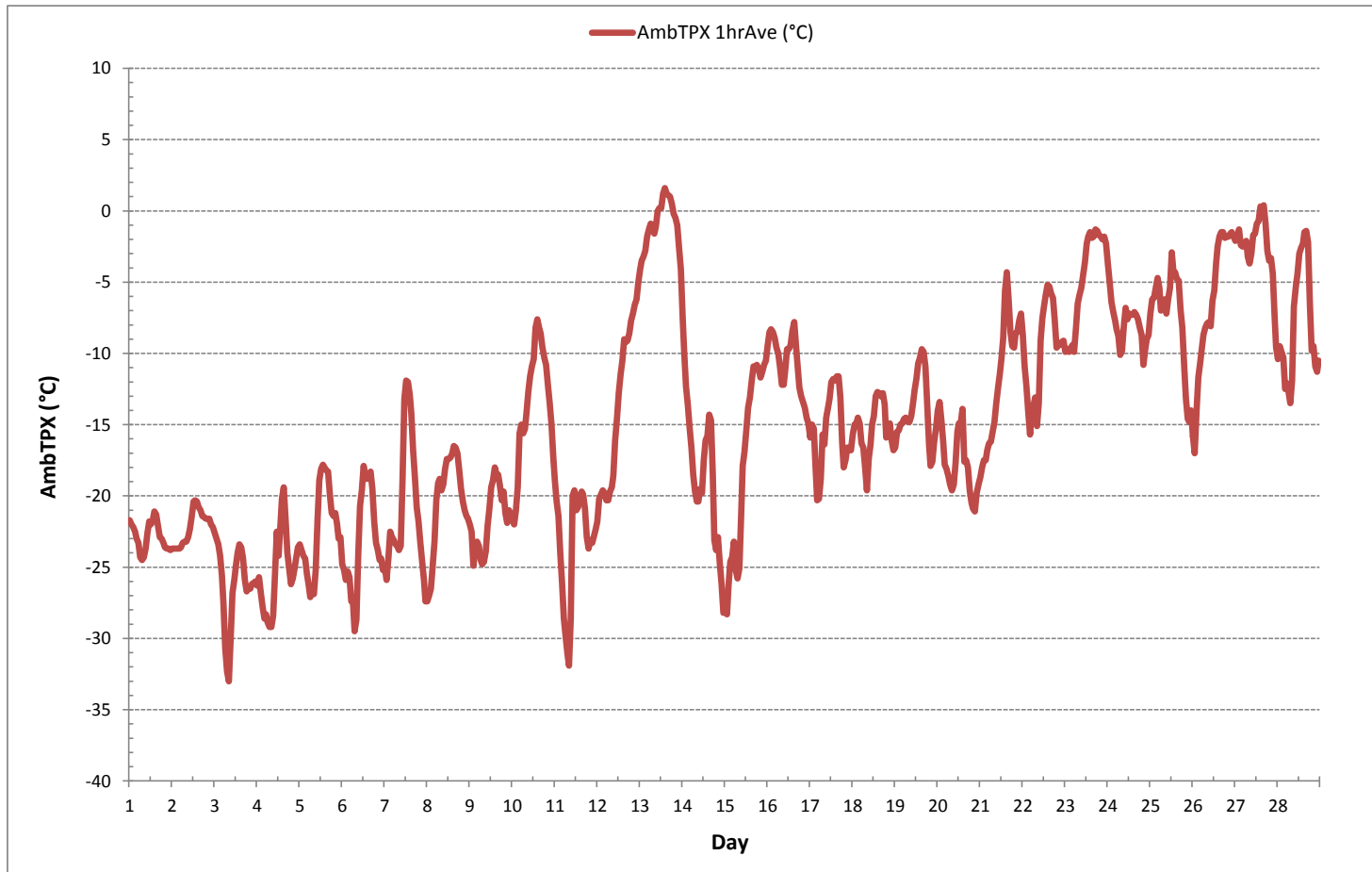
24 HR AVERAGES February 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-33.0	°C	@ HOUR	8	ON DAY	3
MAXIMUM 1-HR AVERAGE:	1.6	°C	@ HOUR	14	ON DAY	13
MAXIMUM 24-HR AVERAGE:	-1.0	°C			ON DAY	13
OPERATIONAL TIME:					672	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	7.9				MONTHLY AVERAGE:	-15.2 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE



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

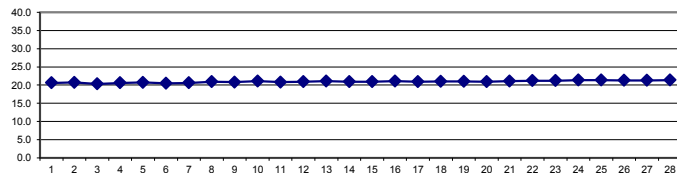
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	20.7	20.6	20.5	20.7	20.6	20.6	20.5	20.6	20.4	20.7	20.6	20.5	20.6	20.5	20.7	20.6	20.6	20.6	20.6	20.6	20.5	20.6	20.7	20.6	20.4	20.7	20.6	24
2	20.7	20.5	20.6	20.7	20.7	20.6	20.7	20.8	20.7	20.7	20.7	20.7	20.7	20.9	20.9	21.0	20.8	20.8	20.8	20.8	20.7	20.7	20.5	20.6	20.5	21.0	20.7	24
3	20.6	20.4	20.4	20.6	20.5	20.4	20.5	20.6	20.3	20.3	20.3	20.4	20.5	20.3	20.6	20.3	20.3	20.2	20.3	20.0	20.3	19.9	20.0	20.3	19.9	20.6	20.3	24
4	20.0	20.3	20.2	20.5	20.5	20.4	20.5	20.4	20.6	20.5	20.5	20.4	20.7	20.7	20.7	21.1	20.8	20.8	20.7	20.6	20.5	20.7	20.7	20.7	20.0	21.1	20.6	24
5	20.7	20.7	20.7	20.6	20.7	20.5	20.6	20.6	20.4	20.6	20.5	20.6	20.8	20.7	20.9	20.9	21.1	20.9	20.9	20.8	20.8	20.7	20.7	20.8	20.4	21.1	20.7	24
6	20.8	20.5	20.6	20.6	20.6	20.5	20.6	20.4	20.4	20.5	20.5	20.5	20.7	20.7	20.7	20.8	21.0	20.8	19.5	20.2	20.3	20.4	20.4	20.4	19.5	21.0	20.5	24
7	20.4	20.4	20.4	20.5	20.5	20.5	20.6	20.5	20.6	20.5	20.5	20.6	20.7	20.6	21.0	20.9	20.8	21.0	20.9	20.3	20.4	20.5	20.4	20.5	20.3	21.0	20.6	24
8	20.5	20.4	20.4	20.4	20.5	20.5	20.5	20.5	20.6	20.7	20.9	22.0	22.2	21.6	21.2	21.1	20.8	21.1	20.9	20.9	20.8	20.7	20.7	20.9	20.4	22.2	20.9	24
9	20.6	20.7	20.7	20.7	20.8	20.5	20.7	20.8	20.8	20.8	20.4	20.7	20.8	20.6	20.9	21.1	21.0	20.9	21.0	21.0	20.9	20.9	21.0	21.0	20.4	21.1	20.8	24
10	21.0	20.9	20.8	21.0	20.7	21.0	20.9	21.1	21.1	21.1	21.1	21.1	21.3	21.0	21.3	21.0	21.4	21.0	21.2	21.3	21.0	21.2	20.9	21.0	20.7	21.4	21.1	24
11	21.0	20.9	20.9	20.9	20.8	20.7	20.7	20.6	20.5	20.5	20.8	20.7	20.6	20.9	20.8	20.9	21.0	21.0	21.0	20.9	20.9	20.7	20.9	20.9	20.5	21.0	20.8	24
12	20.9	20.9	20.9	20.9	20.4	20.7	20.9	20.4	20.8	20.4	20.8	20.6	20.8	21.0	20.9	21.0	21.1	21.2	21.1	21.1	21.1	21.1	21.1	21.0	20.4	21.2	20.9	24
13	20.8	21.0	20.9	21.0	21.0	21.1	20.8	21.3	21.0	21.0	21.1	21.3	20.7	21.2	21.0	21.1	21.0	21.1	21.0	21.1	21.4	21.1	21.1	21.3	20.7	21.4	21.1	24
14	21.1	21.0	21.0	20.9	20.8	20.8	20.9	20.7	20.8	20.8	20.8	20.7	20.8	20.8	20.9	20.9	21.2	21.1	21.0	20.9	20.9	20.7	20.8	20.7	20.7	21.2	20.9	24
15	20.7	20.7	20.6	20.7	20.8	20.7	20.7	20.6	20.6	20.8	20.7	20.6	20.9	21.1	20.8	21.2	21.1	20.9	21.2	21.0	21.0	21.2	21.1	21.0	20.6	21.2	20.9	24
16	21.2	21.2	21.1	21.3	21.2	21.1	21.1	21.1	21.2	21.1	21.0	21.1	20.8	20.9	21.0	21.1	21.1	21.3	21.2	21.0	21.1	20.8	21.0	20.9	20.8	21.3	21.1	24
17	21.1	20.9	20.8	21.0	21.1	20.6	20.8	20.8	20.7	20.8	20.8	20.7	20.7	20.8	20.7	20.7	20.9	21.1	21.1	21.2	20.9	21.0	21.0	21.1	20.6	21.2	20.9	24
18	20.9	21.2	20.9	21.1	20.9	21.0	20.8	21.0	20.9	20.8	20.9	21.0	21.0	20.8	21.0	21.0	20.9	21.1	21.2	20.9	21.1	21.1	20.9	20.9	20.8	21.2	21.0	24
19	20.9	20.8	20.9	20.9	20.8	20.8	20.9	21.1	20.9	20.8	21.0	21.0	20.9	21.0	21.1	21.1	21.4	21.3	21.4	21.2	21.2	21.0	21.2	21.1	20.8	21.4	21.0	24
20	21.1	21.1	21.1	21.0	20.9	21.0	20.9	20.9	20.9	20.8	20.8	20.7	20.6	20.6	20.8	21.0	21.2	20.9	21.1	20.8	21.0	21.0	20.8	20.9	20.6	21.2	20.9	24
21	20.9	20.9	21.0	21.0	20.8	20.8	20.9	20.9	21.0	20.9	21.0	21.1	21.2	21.1	21.4	21.1	21.4	21.2	21.6	21.2	21.4	21.2	21.5	21.2	20.8	21.6	21.1	24
22	21.4	21.2	21.2	21.3	21.0	21.1	21.0	21.1	21.1	21.0	21.2	21.2	21.3	21.3	21.3	21.4	21.3	21.5	21.4	21.2	21.4	21.5	21.2	21.1	21.0	21.5	21.2	24
23	21.1	21.2	21.1	21.0	21.2	21.1	21.0	21.1	21.0	21.0	21.2	21.2	21.1	21.1	21.0	21.3	21.4	21.4	21.2	21.5	21.2	21.7	21.4	21.4	21.0	21.7	21.2	24
24	21.3	21.5	21.3	21.3	21.3	21.1	21.4	21.2	21.2	21.5	21.3	21.3	21.4	21.2	21.5	21.3	21.5	21.5	21.5	21.5	21.2	21.5	21.3	21.6	21.1	21.6	21.4	24
25	21.3	21.6	21.3	21.5	21.4	21.4	21.4	21.4	21.4	21.5	21.4	21.3	21.4	21.3	21.1	21.3	21.4	21.2	21.5	21.5	21.4	21.3	21.2	21.2	21.1	21.6	21.4	24
26	21.2	21.1	21.3	21.1	21.3	21.4	21.4	21.4	21.4	21.5	21.2	21.5	21.3	21.4	21.2	21.4	21.6	21.3	21.3	21.5	21.2	21.1	21.4	21.1	21.1	21.6	21.3	24
27	21.3	21.3	21.3	21.3	21.4	21.2	21.3	21.4	21.4	21.4	21.2	21.3	21.4	21.2	21.2	21.0	21.2	21.3	21.4	21.5	21.3	21.5	21.6	21.3	21.0	21.6	21.3	24
28	21.4	21.3	21.4	21.5	21.2	21.3	21.2	21.3	21.3	21.1	21.3	21.0	21.1	21.3	21.2	21.5	21.7	21.9	21.5	21.4	21.5	21.3	21.5	21.3	21.0	21.9	21.4	24
HOURLY MAX	21.4	21.6	21.4	21.5	21.4	21.4	21.4	21.4	21.5	21.5	21.5	22.0	22.2	21.6	21.5	21.6	21.7	21.9	21.6	21.5	21.5	21.7	21.6	21.6				
HOURLY AVG	20.9	20.9	20.9	20.9	20.9	20.8	20.9	20.9	20.9	20.9	20.9	20.9	21.0	20.9	21.0	21.0	21.1	21.1	21.1	21.0	21.0	21.0	21.0	21.0				

STATUS FLAG CODES

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

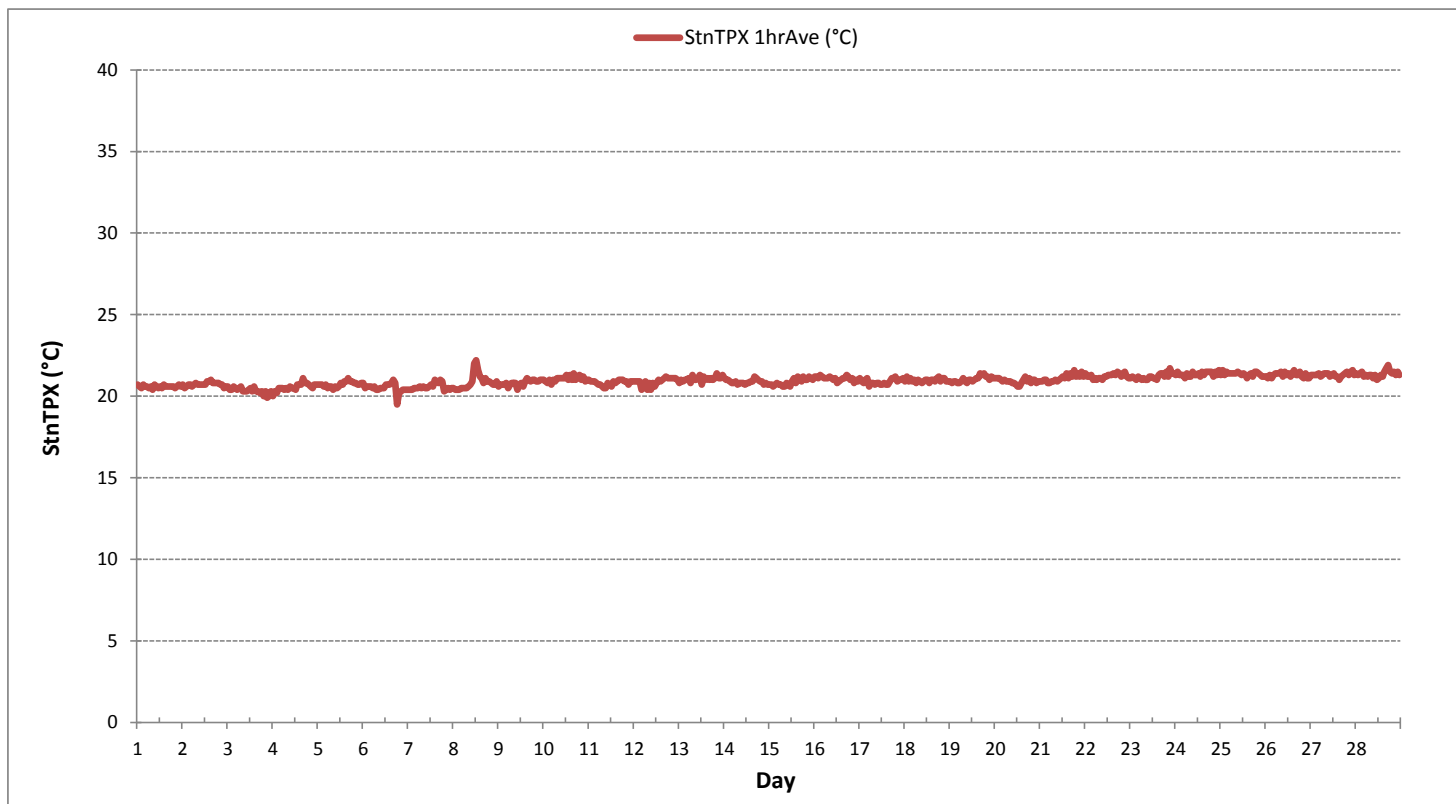
24 HR AVERAGES February 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.5	°C	@ HOUR	18	ON DAY	6
MAXIMUM 1-HR AVERAGE:	22.2	°C	@ HOUR	12	ON DAY	8
MAXIMUM 24-HR AVERAGE:	21.4	°C			ON DAY	24
OPERATIONAL TIME:						672 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	0.3					
MONTHLY AVERAGE:						20.9 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



Thermo 43i Sulphur Dioxide Analyzer Calibration

Date:	February 8, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	28.34	inHg
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):	10:09	Performed By/Reviewer:	Raja Abid	Rob Fisher	
End Time 24 hr. (mst):	13:55	Cal Gas Expiry Date:	March 23, 2019		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		

Analyzer:	ID# or Serial Number:	835033373	Range ppb:	500
	Last Calibration Date:	January 4, 2018	As Found C.F.:	0.991
	Previous C.F.:	0.999	New C.F.:	1.000

Calibration Standards:	Standard Calibration Points for Ranges
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# 627 expires January 31, 2019	
Cal Gas Cylinder I.D. #: LL 119513	
Cal Gas Conc. (ppm): 50.6	

Point	ppb
High	380
Mid	180
Low	90

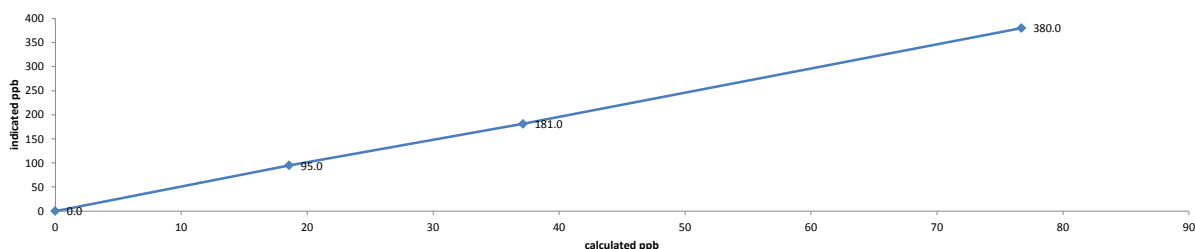
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	6132	0.00	6132	0.0	0.5	n/a
as found high	6074	45.98	6120	380.2	384.0	0.991
adjusted zero	6132	0.00	6132	0.0	0.0	n/a
adjusted high	6074	45.98	6120	380.2	380.0	1.000
mid	6068	21.66	6090	180.0	181.0	0.994
low	6084	11.21	6095	93.1	95.0	0.980
calibrator zero	6132	0.00	6132	0.0	0.0	n/a
Average C.F. =						0.992

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	1.002		0.95-1.05
b (Intercept as % of full scale) =	-0.20%		± 3% F.S.
% change in C.F. from last cal =	0.77%		± 10%

Thermo 43i Sulphur Dioxide Analyzer Calibration

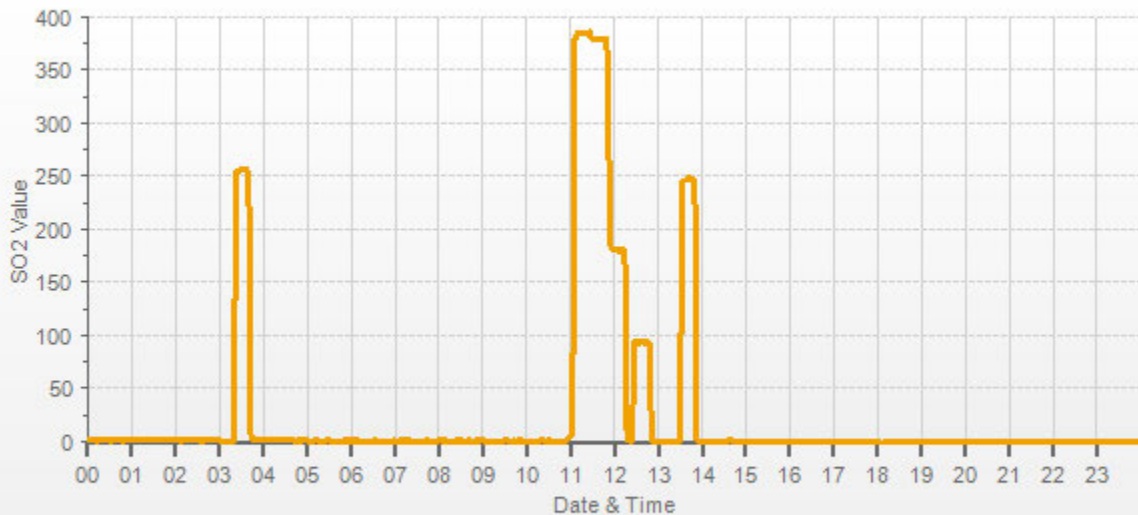


As found:		As left:	
Bkg:	14.0	Bkg:	14.5
Coef:	1.043	Coef:	1.028
Pmt:	-621.2	Pmt:	-621.2
Flash:	884	Flash:	884
Internal:	24.9	Internal:	24.8
Chamber:	45.2	Chamber:	45.1
Perm Oven Gas:	45.00	Perm Oven Gas:	45.01
Perm Oven Heater:	44.14	Perm Oven Heater:	44.13
Pressure:	691.1	Pressure:	691.7
Sample Flow:	0.448	Sample Flow:	0.448
Lamp Intensity:	82	Lamp Intensity:	82
Converter:	n/a	Converter:	850
Converter Set:	n/a	Converter Set:	850
Averaging Time:	120	Averaging Time:	120
Expected Value:	256.0	Expected Value:	247.3

Comments:

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

SO2[ppb] Station: PRAMP_842 Daily: 18/02/08 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	February 8, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	28.34	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	842b	Weather Conditions:	Light snow		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	10:09	Performed By/Reviewer:	Raja Abid	Rob Fisher	
End Time 24 hr. (mst):	14:17	Cal Gas Expiry Date:	May 16, 2020		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA CDN-101#553		

Analyzer:	ID# or Serial Number:	11623460023	Range ppb:	100
	Last Calibration Date:	January 5, 2018	As Found C.F.:	1.027
	Previous C.F.:	0.999	New C.F.:	1.000

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.:	10:54/11:04
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018	SO2 Analyzer Range:	500
Calibrator ID/Expiry Date:	API id# 627 expires January 31, 2019	Target Concentration (ppb):	380
Cal Gas Cylinder I.D. # :	LL119420	As Found Zero:	0.0
Cal Gas Conc. (ppm):	10.2	Analyzer Response: (ppb):	0.1
		Zero Corrected Result (ppb):	0.1

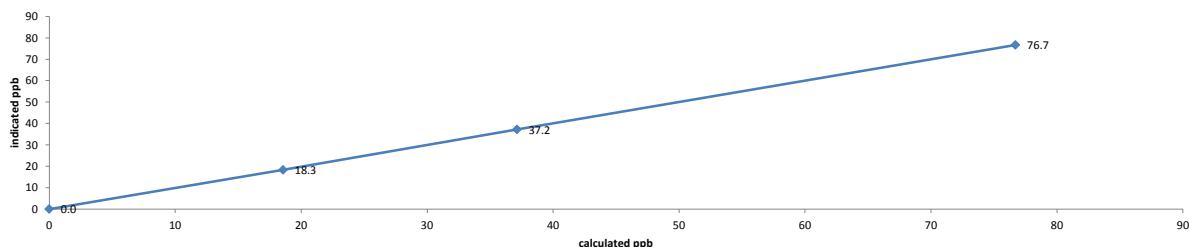
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7590	0.00	7590	0.0	0.3	n/a
as found high	7555	57.25	7612	76.7	75.0	1.027
adjusted zero	7590	0.00	7590	0.0	0.0	n/a
adjusted high	7555	57.25	7612	76.7	76.7	1.000
mid	7576	27.69	7604	37.1	37.2	0.998
low	7598	13.86	7612	18.6	18.3	1.015
calibrator zero	7590	0.00	7590	0.0	0.0	n/a
Average C.F. =						1.004

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) =	0.09%		± 3% F.S.
% change in C.F. from last cal =	-2.80%		± 10%

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	2.79	Bkg:	2.86
Coef:	0.883	Coef:	0.889
Pmt:	-720.4	Pmt:	-720.4
Flash:	998	Flash:	997
Internal:	30.4	Internal:	29.5
Chamber:	45.0	Chamber:	45.0
Perm Oven Gas:	45.00	Perm Oven Gas:	45.00
Perm Oven Heater:	44.10	Perm Oven Heater:	44.10
Pressure:	680.6	Pressure:	681.2
Sample Flow:	0.416	Sample Flow:	0.415
Lamp Intensity:	89	Lamp Intensity:	88
Converter:	850	Converter:	850
Converter Set:	850	Converter Set:	850
Averaging Time:	120	Averaging Time:	120
Expected Value:	56.8	Expected Value:	53.8

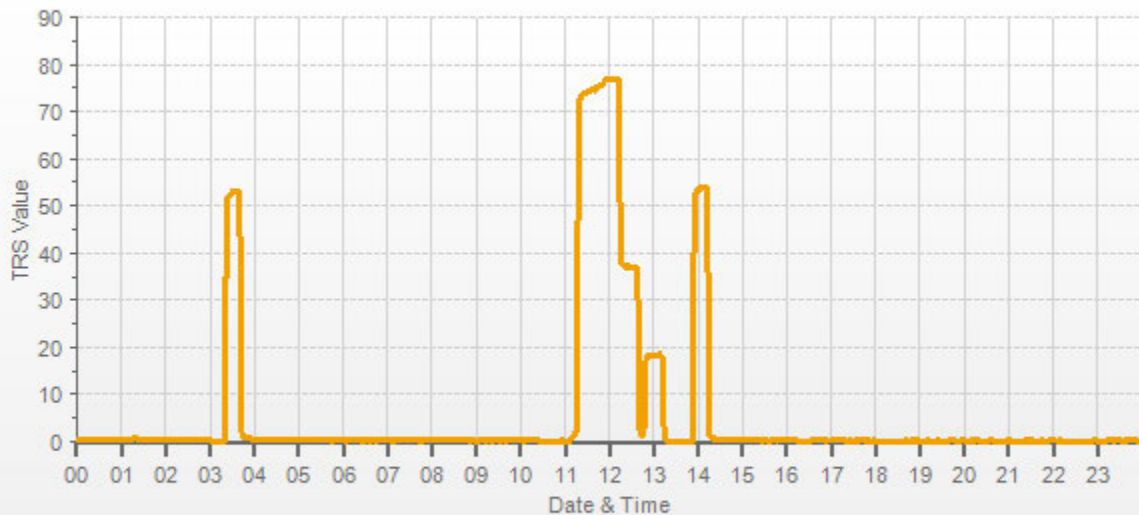
Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

TRS[ppb] Station: PRAMP_842 Daily: 18/02/08 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	February 8, 2018	Barometer/B.P./units:	Brunton 05490 expires December 11, 2018	28.34	
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	23	°C
Location/Station Name:	842b	Weather Conditions:	Light snow		
Parameter:	CH ₄ / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	13:35/17:12	Performed By/Reviewer:	Raja Abid	Rob Fisher	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	October 18, 2025		

Analyzer:	Correction Factors:			
	ID# or Serial Number:	1505664392	Previous C.F.:	As Found C.F.:
	Measured Flow:	1255.7	CH ₄ = 0.999	0.999
	Last Calibration Date:	January 4, 2018	NMHC = 0.999	1.003
	Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC = 0.999	1.001
				New C.F.:
				1.000
				1.000
				1.000

Calibration Standards:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018	Point	CH ₄	NMHC	THC
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018	High	13.00	13.00	26.00
Calibrator ID/Expiry Date:	API id# 627 expires January 31, 2019	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL119471	Low	3.00	3.00	6.00
CH ₄ Cylinder Conc.:	599.0				
	207.0				
	=C ₃ H ₈ Cylinder Conc.				
CH ₄ expressed as C ₃ H ₈ =	569.3				
	1168.3				
	=total CH ₄ equivalent				

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015												
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
as found zero	2546	0.00	2546	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2485	61.74	2547	14.52	13.80	28.32	14.53	13.75	28.30	0.999	1.003	1.001
adjusted zero	2546	0.00	2546	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2485	61.74	2547	14.52	13.80	28.32	14.52	13.80	28.32	1.000	1.000	1.000
mid	2498	30.48	2528	7.22	6.86	14.08	7.32	6.95	14.27	0.986	0.987	0.987
low	2512	15.70	2528	3.72	3.54	7.26	3.76	3.55	7.32	0.989	0.996	0.991
calibrator zero	2546	0.00	2546	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F.=									0.992	0.994	0.993	

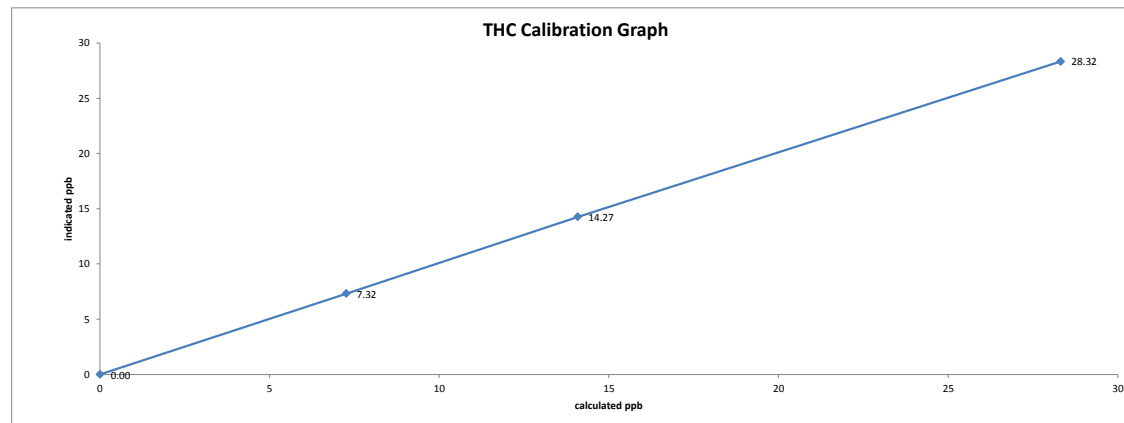
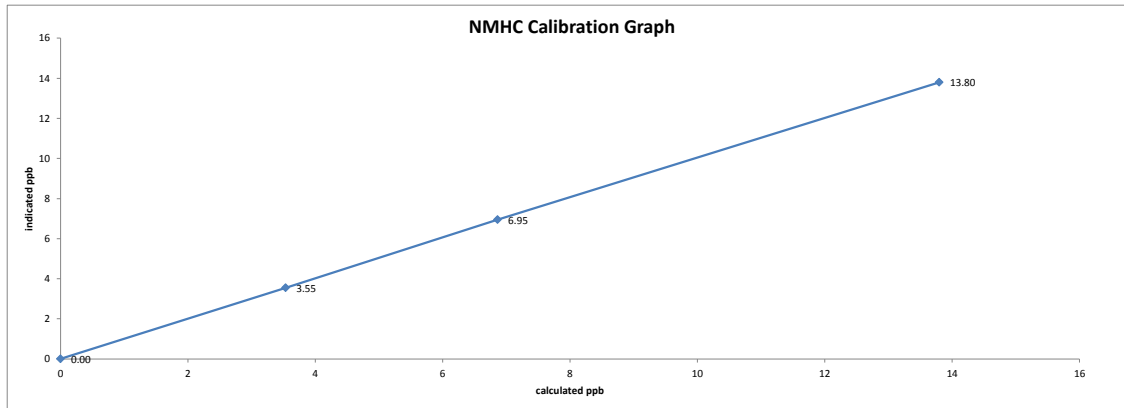
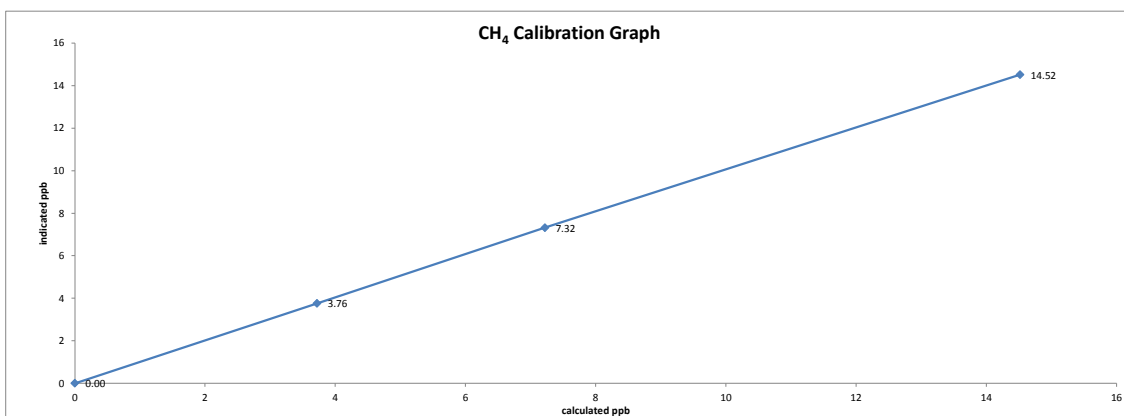
Linear Regression/Calibration Results:				LIMITS	
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995	
Slope =	1.000	1.000	1.000	0.95-1.05	
b (Intercept as % of full scale) =	0.18%	0.12%	0.16%	± 3% F.S.	
% change in C.F. from last cal =	-0.02%	-0.44%	-0.15%	± 10%	

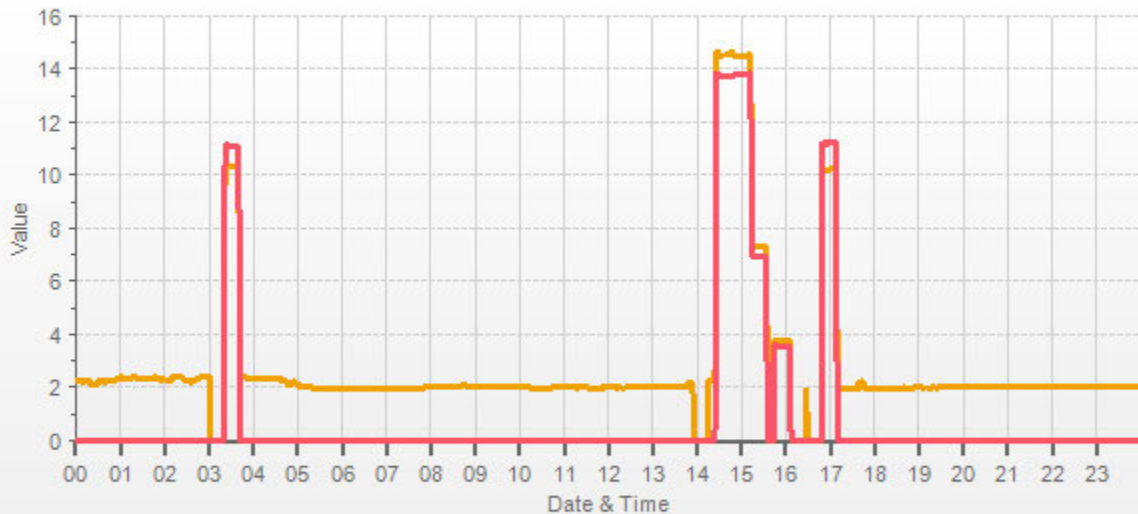
As Left Instrument Diagnostics:											
Interface Board Voltages:	Bias Supply:	-293.1	Calibration History cnt'd:	NM Peak Area:	n/a						
Temperatures:	Detector Oven:	175.0	Crucial Settings:	Methane Start:	n/a						
	Filter:	175.0		Methane End:	n/a						
	Column Oven:	75.0		Backflush:	n/a						
	Internal:	31.9		NMHV Start:	n/a						
Cylinder Pressures/reg.:	Carrier:	1000	50	NMHC End:	n/a						
	Fuel:	1100	50	Date:	08Feb2018						
	Span Gas:	1600	15	Time:	14:00						
	Zero Air Generator:	50		CH ₄ PK HT:	0						
Internal Pressures:	Carrier:	31.1		CH ₄ RT:	8.0						
	Fuel:	47.3		CH ₄ Baseline:	-122						
	Air:	23.7		CH ₄ LOD:	13						
FID Status:	Status:	LIT		CH ₄ SD:	4						
	Counts:	37825		CH ₄ CONC:	0.00						
	Flame:	390.1		NM PK HT:	0						
	Det Base:	175.0		NM Peak Area:	0						
Flame and Power Stats:	Last Power On:	12Jan2018@11:45		NM CONC:	0.00						
	Flameouts:	1		NM Base Start:	-125						
	Det Oven at Start:	168.9		NM Base End:	-129						
	Col Oven at Start:	74.3		NM LOD:	15						
Calibration History:	Time:	n/a		NM Start IDX:	30						
	Type:	n/a		NM End IDX:	33						
	Status:	n/a		NM Max Slope:	7.9e-01						
	Check/Adjust:	n/a		NM Min Slope:	-3.4e-01						
	CH ₄ Span Conc:	n/a		NM PT Count:	0						
	CH ₄ SP Ratio:	n/a		Expected Values:							
	CH ₄ RT:	n/a		Previous CH ₄ :	10.3						
	CH ₄ PK IDX:	n/a		Previous NMHC:	11.05						
	CH ₄ PK HT:	n/a		Previous THC:	21.4						
	NM Span Conc:	n/a		New CH ₄ :	10.24						
	NM SP Ratio:	n/a		New NMHC:	11.22						
				New THC:	21.47						

Comments:		
The analyzer sample inlet filter was changed.	A new nitrogen cylinder was installed.	
	No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.	
The manifold blower was found to be working normally.		

Date: **February 8, 2018**
Company/Airshed: **PRAMP**
Location/Station Name: **842b**

Start/End Time 24 hr. (mst): **13:35/17:12**
Calibration Purpose: **routine monthly**
Calibration Method: **Gas Dilution**





— CH4[ppm] — NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP
Audit Location: 986b
Audit Date: April 5, 2017

Performed By: Limin Li
Reviewed By: Trina Whitsitt
Start /EndTime (mst): 13:30/15:30

Wind Sensor Information

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

Wind Calibrator Information

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

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

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

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

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

Comments: Adjust wind speed gain before calibration.

METEOROLOGICAL SYSTEMS CHECK



Meteorological System Checklist

Date:	January 8, 2018	
Technician:	Raja Abid	
Reviewer:	Rob Fisher	
Station:	PRAMP 842b	
AMBIENT TEMPERATURE SENSOR CHECK		
Parameter:	Temperature @ 2 metres (1 C tolerance)	
Reference Thermometer ID:	F.S. 160459244 expires May 18, 2018	
Reference Temperature (°C):	-16.1	
Station - Ambient Temperature (°C):	-16.5	
Temperature Difference (°C):	0.4	
BAROMETRIC PRESSURE SENSOR CHECK		
Reference Barometer ID:	Brunton 05490 expires December 11, 2018	
Reference Pressure - Units/Reading:	kPa	960.7000
Station Pressure - Units/Reading:	kPa	962.2000
Pressure Tolerance +/- 1.5% of reading:	946.3 - 975.1	-0.16%
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK		
Reference Hygrometer ID:	F.S. id# 160459244 expires May 18, 2018	
Reference Hygrometer % RH- Reading:	74.67	
Station Hygrometer % RH- Reading:	75.12	
Pressure Tolerance +/- 1.5% of reading:	73.55 - 75.79	-0.6%

CALIBRATORS

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-521A

Company: Maxxam		Operator: Christopher	
Calibrator:		Flow Measurement Device:	
Make/Model	API 700	Make/Model	Mesa 530+
Serial Number	627	Serial Number	H-156312 L-156151
Last Verification Date	January 2017	Temperature (°C)	N/A
NO Cylinder S/N	EY0000715	Barometric Pressure	N/A
NO [PPM]	50.7	NOx [PPM]	50.8
Expiry Date	May 2020		

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4972	77.0	0.785	0.787	0.782	-0.001	0.781	0%	-1%
4979	37.4	0.381	0.382	0.377	0.000	0.377	-1%	-1%
4970	18.7	0.191	0.191	0.188	0.000		-2%	-100%
Absolute Average Percent Difference							1%	34%

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)= 0.9969	0.90-1.10	m (Slope)= 0.9924
b (Intercept % of FS)= -0.1435	± 3% F.S.	b (Intercept % of FS)= -0.0716

Flow	O ₂ Conc	NO Decrease	NO	NO ₂	NOx	% Diff. Vs Audit gas	
4972	0.000	0.000	0.778	-0.001	0.777	NO ₂	% Diff. Limit
4972	0.500	0.492	0.286	0.488	0.774	-1%	± 10%
4972	0.280	0.278	0.500	0.276	0.776	0%	± 10%
4972	0.095	0.092	0.686	0.091	0.777	0%	± 10%
Absolute Average Percent Difference						0%	± 10%

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

NO₂	LIMITS	
Correlation= 1.0000	≥ 0.995	
m (Slope)= 0.9937	0.90-1.10	
b (Intercept % of FS)= -0.0647	± 3% F.S.	

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

COMMENTS:

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: January 31, 2018
Location: McIntyre Center Edmonton

CALIBRATION GASES



Praxair
 5700 South Alameda Street
 Los Angeles, CA 90058
 Tel:(323)585-2154 Fax:(714)542-6689
 PGVP ID: F22016

DocNumber: 000094205

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

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

Praxair Order Number: 34279285
 Customer PO Number:
 Customer Reference Number:

Fill Date: 5/10/2016
 Part Number: NI NO50MS2E-AO
 Lot Number: 109613103
 Cylinder Style and Outlet: AO CGA 660
 Cylinder Pressure and Volume: 2000 psig 82 cu. ft.

Certified Concentration:

Expiration Date:	05/23/2019	NIST Traceable
Cylinder Number:	LL119513	Expanded Uncertainty:
50.2 ppm	NITRIC OXIDE	± 0.7 %
50.6 ppm	SULFUR DIOXIDE	± 1.0 %
Balance	NITROGEN	

NOx ppm = 50.4 ppm

NOX for Reference Only

Certification Information: Certification Date : 5/23/2016 Term : 36 Months Expiration Date : 05/23/2019

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

Analytical Data:

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

1. Component: NITRIC OXIDE

Requested Concentration: 50 ppm
 Certified Concentration: 50.2 ppm
 Instrument Used: Thermo Electron 42i-LS S/N 1030645077
 Analytical Method: Chemiluminescence
 Last Multipoint Calibration: 05/04/2016

First Analysis Data:				Date:	05/16/2016
Z:	0	R:	51	C:	50.3
R:	51	Z:	0	C:	50.2
Z:	0	C:	50.2	R:	51
UOM:	ppm	Mean Test Assay:	50.2	ppm	

Reference Standard Type: GMIS
 Ref. Std. Cylinder #: CC37023
 Ref. Std. Conc: 50.96
 Ref. Std. traceable to SRM #: VS. 1635b
 SRM Sample #: 45-V-42
 SRM Cylinder #: CAL017897

Second Analysis Data:				Date:	05/23/2016
Z:	0	R:	51	C:	50.2
R:	51	Z:	0	C:	50.3
Z:	0	C:	50.3	R:	51
UOM:	ppm	Mean Test Assay:	50.2	ppm	

2. Component: SULFUR DIOXIDE

Requested Concentration: 50 ppm
 Certified Concentration: 50.6 ppm
 Instrument Used: Ametek 921CE S/N AW-921-S321
 Analytical Method: Ultraviolet Absorption
 Last Multipoint Calibration: 05/12/2016

First Analysis Data:				Date:	05/16/2016
Z:	0	R:	483.3	C:	503.7
R:	483.6	Z:	0	C:	503.1
Z:	0	C:	503.1	R:	483.6
UOM:	ppm	Mean Test Assay:	50.6	ppm	

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

Second Analysis Data:				Date:	05/23/2016
Z:	0	R:	482.4	C:	502.7
R:	482.9	Z:	0	C:	503.4
Z:	0	C:	503.4	R:	482.9
UOM:	ppm	Mean Test Assay:	50.6	ppm	

Analyzed by:

Matthew Angerer

Certified by:

Henry Koung

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specified analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.



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

DocNumber: 000109341

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

MAXXAM ANALYTICS INC *NA*

9372 49TH ST

EDMONTON

AB T6B 2L7

Praxair Order Number: 28946198

Customer PO Number: 35-68215

Customer Reference Number:

Fill Date: 4/27/2017

Part Number: NI HS10ME-AO

Lot Number: 70086711701

Cylinder Style and Outlet: AO CGA 330

Cylinder Pressure and Volume: 2000 psig 75 cu. ft.

Certified Concentration:

Expiration Date:	05/16/2020	NIST Traceable
Cylinder Number:	LL119420	Expanded Uncertainty:
10.2 ppm	HYDROGEN SULFIDE	± 1.4 %
Balance	NITROGEN	

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

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.

Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

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

1. Component:

HYDROGEN SULFIDE

Requested Concentration: 10 ppm
Certified Concentration: 10.2 ppm
Instrument Used: INTERSCAN RM-17 S/N 715726
Analytical Method: ELECTROLYTIC CELL
Last Multipoint Calibration: 04/25/2017

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

First Analysis Data:		Date: 05/08/2017	
Z:	0	R:	40.89
R:	40.86	Z:	0
Z:	0	C:	20.73
UOM:	mV	R:	40.86
		Conc:	10.2
		Conc:	10.2
		Conc:	10.3
		Mean Test Assay:	10.2 ppm

Second Analysis Data:		Date: 05/16/2017	
Z:	0	R:	40.64
R:	40.63	Z:	0
Z:	0	C:	20.7
UOM:	mV	R:	40.63
		Conc:	10.3
		Conc:	10.3
		Conc:	10.3
		Mean Test Assay:	10.3 ppm

Analyzed by:

Ying Yu

Certified by:

Nassim Haddad



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

DocNumber: 000116089

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

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

Praxair Order Number: 44723832
Customer P. O. Number: PO0000001677
Customer Reference Number:

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

Certified Concentration:

Expiration Date:	10/18/2025	NIST Traceable
Cylinder Number:	LL119471	Analytical Uncertainty:
207 ppm	PROPANE	± 0.6 %
599 ppm	METHANE	± 0.3 %
Balance	NITROGEN	

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

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

Analytical Data:

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

1. Component: PROPANE

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

Reference Standard Type: GMIS
Ref. Std. Cylinder #: CCY18142
Ref. Std. Conc: 255.6 ppm
Ref. Std. Traceable to SRM #: 2644a
SRM Sample #: 101-C-45
SRM Cylinder #: XF003829B

First Analysis Data: Date: 10/18/2017
Z: 0 R: 246.85 C: 199.66 Conc: 206.7
R: 246.89 Z: 0 C: 199.69 Conc: 206.72
Z: 0 C: 199.66 R: 246.96 Conc: 206.7
UOM: ppm Mean Test Assay: 206.71 ppm

Second Analysis Data: Date:
Z: 0 R: 0 C: 0 Conc: 0
R: 0 Z: 0 C: 0 Conc: 0
Z: 0 C: 0 R: 0 Conc: 0
UOM: ppm Mean Test Assay: 0 ppm

2. Component: METHANE

Requested Concentration: 600 ppm
Certified Concentration: 599 ppm
Instrument Used: MKS Multigas 2031 FTIR
Analytical Method: Fourier Transform Infrared
Last Multipoint Calibration: 9/27/2017

Reference Standard Type: GMIS
Ref. Std. Cylinder #: DT0010335
Ref. Std. Conc: 990 ppm
Ref. Std. Traceable to SRM #: RGM#DT00
SRM Sample #: N/A
SRM Cylinder #: DT0007710

First Analysis Data: Date: 10/17/2017
Z: 0 R: 934.60 C: 566.69 Conc: 600.97
R: 934.66 Z: 0 C: 563.95 Conc: 598.06
Z: 0 C: 564.19 R: 931.33 Conc: 598.32
UOM: ppm Mean Test Assay: 599.12 ppm

Second Analysis Data: Date:
Z: 0 R: 0 C: 0 Conc: 0
R: 0 Z: 0 C: 0 Conc: 0
Z: 0 C: 0 R: 0 Conc: 0
UOM: ppm Mean Test Assay: 0 ppm

Analyzed by:

Jenna Lockman

Certified by:

Jose Vasquez

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

APPENDIX III
MAXIMUM INSTANTANEOUS DATA



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 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 MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY																												
1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
2	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
3	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
4	1	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	24
5	1	1	1	1	1	1	S	1	1	2	2	2	2	4	3	2	2	2	1	2	2	2	1	2	1	4	2	24
6	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	24
7	2	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
8	1	2	2	S	1	1	1	1	1	1	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0	2	1	24
9	1	1	S	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	1	0	2	1	24
10	0	S	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24
11	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	24
12	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0	0	0	S	0	0	1	0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	S	0	0	0	0	1	0	24
15	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	S	1	1	0	0	0	2	1	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	1	0	24
17	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	24
18	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
19	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
20	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
21	0	0	0	0	0	0	0	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	1	0	0	0	0	0	0	0	1	0	24
23	0	1	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
24	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
25	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
26	0	0	0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
27	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
28	0	0	0	1	1	0	S	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	0	1	0	24
HOURLY MAX	2	2	2	1	1	1	1	1	1	2	2	2	2	4	3	2	2	2	2	2	2	2	2	2	2			
HOURLY AVG	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0				

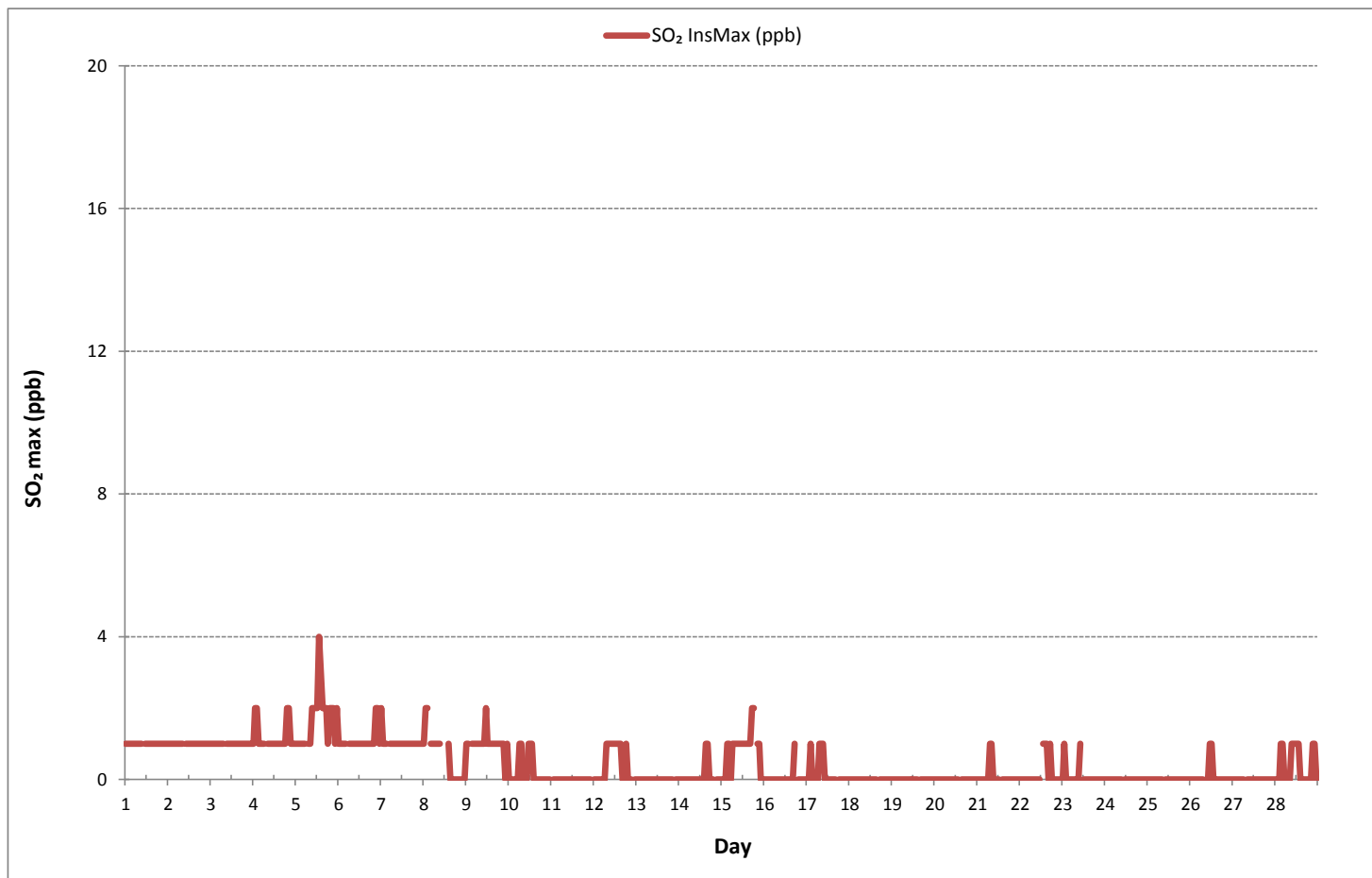
STATUS FLAG CODES

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:	251
MAXIMUM INSTANTANEOUS VALUE:	4 ppb @ HOUR 13 ON DAY 5
IZS CALIBRATION TIME:	29 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	672 hrs
STANDARD DEVIATION:	1

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 2018

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	0.28	0.28	0.28	0.33	0.28	0.25	0.25	0.30	0.25	0.25	S	0.30	0.28	0.23	0.28	0.28	0.28	0.30	0.28	0.25	0.28	0.25	0.28	0.28	0.23	0.33	0.27	24	
2	0.25	0.25	0.28	0.28	0.25	0.25	0.30	0.28	0.28	S	0.33	0.30	0.28	0.28	0.28	0.28	0.28	0.25	0.28	0.30	0.30	0.25	0.28	0.30	0.25	0.33	0.28	24	
3	0.28	0.28	0.28	0.25	0.28	0.25	0.25	0.25	S	0.33	0.28	0.28	0.43	0.28	0.25	0.33	0.36	0.30	0.28	0.30	0.28	0.28	0.30	0.30	0.25	0.43	0.29	24	
4	0.28	0.30	0.28	0.30	0.28	0.28	0.33	S	0.39	0.36	0.30	0.33	0.36	0.33	0.36	0.33	0.38	0.38	0.36	0.33	0.33	0.36	0.36	0.36	0.28	0.39	0.33	24	
5	0.36	0.39	0.36	0.36	0.36	0.41	S	0.47	0.41	0.38	0.39	0.38	0.39	0.36	0.30	0.30	0.31	0.31	0.30	0.33	0.38	0.41	0.39	0.39	0.30	0.47	0.37	24	
6	0.39	0.36	0.36	0.39	0.39	S	0.41	0.36	0.36	0.36	0.36	0.33	0.36	0.36	0.38	0.44	0.38	0.38	0.33	0.33	0.38	0.43	0.51	0.54	0.33	0.54	0.39	24	
7	0.49	0.57	0.51	0.39	S	0.38	0.38	0.38	0.38	0.41	0.49	0.43	0.41	0.33	0.36	0.36	0.33	0.33	0.33	0.30	0.38	0.36	0.33	0.51	0.30	0.57	0.40	24	
8	0.54	0.72	0.64	S	0.59	0.36	0.33	0.36	0.36	0.36	C	C	C	C	C	0.36	0.33	0.41	0.28	0.30	0.28	0.30	0.28	0.36	0.28	0.72	0.40	24	
9	0.30	0.30	S	0.36	0.30	0.30	0.30	0.28	0.33	0.30	0.33	0.30	0.33	0.33	0.36	0.36	0.33	0.33	0.33	0.36	0.33	0.33	0.33	0.33	0.28	0.36	0.32	24	
10	0.33	S	0.41	0.33	0.33	0.28	0.30	0.30	0.28	0.30	0.28	0.30	0.30	0.30	0.28	0.25	0.22	0.25	0.25	0.22	0.25	0.25	0.25	0.25	0.22	0.41	0.28	24	
11	S	0.25	0.22	0.25	0.23	0.28	0.25	0.23	0.23	0.25	0.33	0.28	0.25	0.25	0.25	0.28	0.28	0.28	0.33	0.30	0.25	0.28	0.28	S	0.22	0.33	0.27	24	
12	0.33	0.28	0.28	0.25	0.25	0.25	0.25	0.25	0.25	0.28	0.28	0.28	0.28	0.28	0.25	0.25	0.26	0.28	0.25	0.26	0.28	0.28	S	0.30	0.25	0.33	0.27	24	
13	0.22	0.25	0.25	0.22	0.25	0.23	0.25	0.20	0.22	0.22	0.20	0.20	0.22	0.22	0.20	0.22	0.22	0.20	0.22	0.18	0.23	S	0.20	0.17	0.17	0.25	0.22	24	
14	0.17	0.18	0.22	0.20	0.22	0.17	0.18	0.22	0.20	0.23	0.20	0.25	0.22	0.23	0.25	0.28	0.26	0.28	0.28	0.28	S	0.30	0.25	0.23	0.17	0.30	0.23	24	
15	0.22	0.25	0.23	0.28	0.25	0.25	0.23	0.28	0.25	0.28	0.30	0.25	0.25	0.25	0.22	0.22	0.23	0.25	0.22	S	0.33	0.25	0.25	0.22	0.22	0.33	0.25	24	
16	0.20	0.22	0.17	0.25	0.20	0.22	0.20	0.22	0.20	0.20	0.20	0.22	0.20	0.20	0.17	0.17	0.17	0.23	S	0.28	0.20	0.20	0.20	0.20	0.17	0.28	0.21	24	
17	0.22	0.22	0.20	0.22	0.20	0.20	0.22	0.25	0.25	0.22	0.22	0.20	0.23	0.22	0.20	0.23	0.20	S	0.23	0.17	0.23	0.23	0.20	0.22	0.17	0.25	0.22	24	
18	0.23	0.26	0.23	0.20	0.23	0.23	0.25	0.28	0.33	0.25	0.28	0.25	0.25	0.22	0.23	0.20	S	0.25	0.28	0.22	0.22	0.23	0.28	0.22	0.20	0.33	0.24	24	
19	0.23	0.23	0.25	0.28	0.28	0.25	0.23	0.30	0.28	0.30	0.30	0.30	0.25	0.28	0.28	S	0.28	0.28	0.25	0.25	0.28	0.25	0.25	0.25	0.23	0.30	0.27	24	
20	0.25	0.25	0.28	0.23	0.25	0.22	0.20	0.25	0.22	0.22	0.25	0.25	0.22	0.22	S	0.30	0.25	0.22	0.25	0.25	0.25	0.28	0.28	0.22	0.20	0.30	0.24	24	
21	0.28	0.25	0.28	0.25	0.28	0.25	0.26	0.25	0.28	0.28	0.28	0.28	0.28	S	0.28	0.25	0.30	0.22	0.30	0.28	0.25	0.28	0.30	0.30	0.22	0.30	0.27	24	
22	0.30	0.36	0.30	0.25	0.28	0.22	0.25	0.28	0.30	0.30	0.30	0.30	S	0.30	0.28	0.28	0.30	0.30	0.28	0.26	0.25	0.25	0.28	0.28	0.22	0.36	0.28	24	
23	0.22	0.30	0.28	0.22	0.22	0.22	0.28	0.25	0.22	0.28	0.22	S	0.28	0.23	0.22	0.20	0.26	0.22	0.20	0.20	0.22	0.20	0.20	0.23	0.20	0.30	0.23	24	
24	0.28	0.17	0.20	0.25	0.20	0.22	0.23	0.22	0.20	0.22	S	0.22	0.23	0.18	0.22	0.22	0.22	0.20	0.20	0.20	0.18	0.20	0.17	0.17	0.17	0.28	0.21	24	
25	0.20	0.20	0.17	0.18	0.17	0.17	0.17	0.17	0.20	S	0.22	0.17	0.17	0.17	0.18	0.17	0.20	0.20	0.18	0.15	0.15	0.15	0.20	0.20	0.15	0.22	0.18	24	
26	0.18	0.18	0.20	0.20	0.20	0.17	0.22	0.17	S	0.20	0.23	0.23	0.20	0.25	0.18	0.20	0.17	0.17	0.20	0.18	0.15	0.17	0.15	0.17	0.15	0.25	0.19	24	
27	0.17	0.20	0.17	0.12	0.17	0.17	0.15	S	0.17	0.15	0.17	0.20	0.15	0.17	0.17	0.15	0.20	0.15	0.15	0.15	0.15	0.15	0.20	0.15	0.15	0.12	0.20	0.16	24
28	0.17	0.20	0.17	0.15	0.15	0.17	S	S1	S1	0.25	0.25	0.20	0.17	0.20	0.17	0.23	0.17	0.15	0.17	0.17	0.22	0.28	0.20	0.20	0.15	0.28	0.19	22	
HOURLY MAX	0.54	0.72	0.64	0.39	0.59	0.41	0.41	0.47	0.41	0.41	0.49	0.43	0.43	0.36	0.38	0.44	0.38	0.41	0.36	0.36	0.38	0.43	0.51	0.54					
HOURLY AVG	0.27	0.29	0.28	0.26	0.26	0.25	0.26	0.27	0.27	0.28	0.28	0.27	0.27	0.26	0.25	0.26	0.27	0.26	0.26	0.25	0.26	0.27	0.26	0.27					

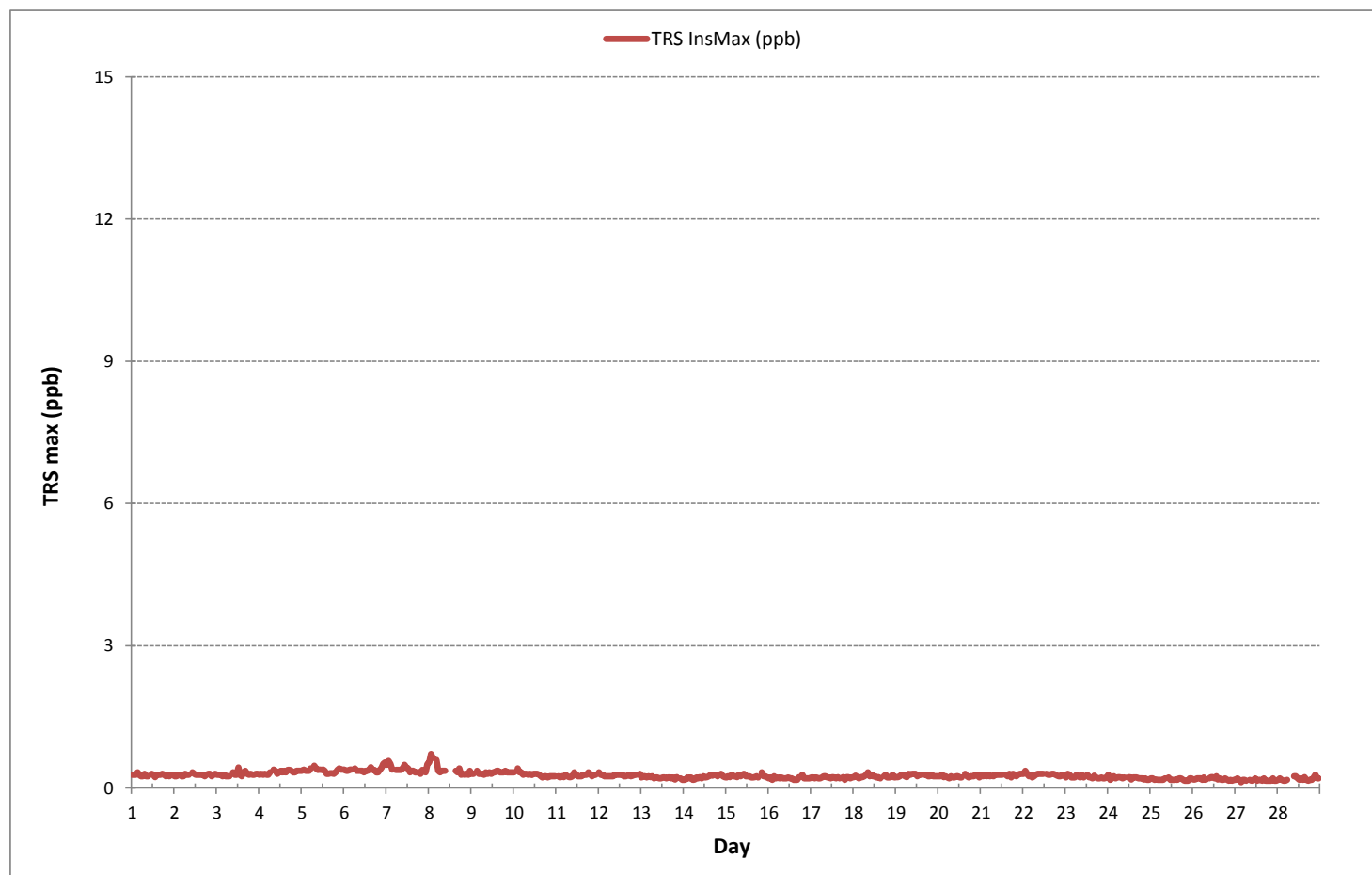
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	636				
MAXIMUM INSTANTANEOUS VALUE:	0.72	ppb	@ HOUR	1	ON DAY 8
IZS CALIBRATION TIME:	29	hrs	OPERATIONAL TIME:	670	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.07				

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - February 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	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	2.01	2.02	2.01	2.02	2.00	2.02	2.01	2.03	2.00	2.02	S	2.01	2.03	2.00	2.01	2.00	2.01	2.01	2.01	2.01	2.02	2.01	2.02	2.01	2.03	2.00	2.03	2.01	24
2	2.00	2.01	2.00	2.01	2.00	2.02	2.06	2.06	2.03	S	2.04	2.03	2.03	2.03	2.02	2.02	2.01	2.02	2.01	2.01	2.01	2.02	2.01	2.00	2.01	2.00	2.06	2.02	24
3	2.01	2.01	2.00	2.00	1.99	2.00	2.02	2.01	S	2.04	2.08	2.07	2.05	2.04	2.03	2.04	2.01	2.02	2.02	2.01	2.02	2.01	2.02	2.03	2.04	1.99	2.08	2.02	24
4	2.05	2.03	2.04	2.03	2.05	2.04	2.05	S	2.05	2.06	2.07	2.06	2.06	2.06	2.04	2.06	2.12	2.27	2.08	2.10	2.11	2.11	2.11	2.11	2.11	2.03	2.27	2.08	24
5	2.12	2.11	2.13	2.11	2.13	2.16	S	2.17	2.17	2.19	2.16	2.12	2.07	2.07	2.07	2.15	2.11	2.09	2.09	2.11	2.14	2.14	2.15	2.17	2.07	2.19	2.13	24	
6	2.15	2.13	2.13	2.11	2.08	S	2.09	2.12	2.09	2.08	2.06	2.04	2.03	2.09	2.05	2.05	2.04	2.03	2.06	2.06	2.17	2.29	2.40	2.45	2.03	2.45	2.12	24	
7	2.37	2.37	2.38	2.19	S	2.20	2.16	2.23	2.23	2.27	2.34	2.19	2.16	2.08	2.04	2.03	2.04	2.03	2.02	2.03	2.04	2.04	2.06	2.29	2.02	2.38	2.16	24	
8	2.41	2.49	2.46	S	2.40	2.15	2.02	2.05	2.11	2.07	2.07	2.05	2.08	C	C	C	C	C	2.03	2.05	2.06	2.05	2.05	2.05	2.02	2.49	2.15	24	
9	2.05	2.05	S	2.06	2.06	2.06	2.06	2.06	2.06	2.07	2.07	2.07	2.07	2.06	2.06	2.08	2.07	2.09	2.08	2.08	2.08	2.08	2.09	2.09	2.05	2.09	2.07	24	
10	2.08	S	2.09	2.06	2.04	2.08	2.08	2.04	2.08	2.09	2.02	2.11	2.10	2.02	2.00	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.00	2.00	1.99	2.11	2.04	24	
11	S	2.00	2.00	2.01	2.01	2.01	2.01	2.01	2.04	2.23	2.26	2.07	2.11	2.04	2.01	2.01	2.00	2.01	2.01	2.01	2.01	2.01	2.01	S	2.00	2.26	2.04	24	
12	2.00	2.02	2.02	2.06	2.06	2.07	2.06	2.06	2.06	2.07	2.06	2.07	2.03	2.03	2.02	2.01	2.03	2.02	2.02	2.01	2.02	2.00	S	2.00	2.00	2.07	2.03	24	
13	1.97	2.00	2.00	2.00	1.96	1.96	1.94	2.00	1.98	1.99	1.97	1.94	2.02	2.06	1.96	1.94	1.95	1.95	1.96	1.97	1.94	S	1.94	1.96	1.94	2.06	1.97	24	
14	1.98	1.97	1.97	1.98	1.98	2.00	2.01	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.03	S	2.03	2.03	2.04	1.97	2.04	2.01	24	
15	2.05	2.05	2.05	2.05	2.05	2.06	2.06	2.06	2.06	2.06	2.05	2.06	2.05	2.04	2.04	2.04	2.02	2.03	2.05	S	2.11	2.14	2.11	2.11	2.02	2.14	2.06	24	
16	2.11	2.12	2.01	2.00	2.00	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.98	S	1.97	1.98	1.99	1.99	1.99	1.97	2.12	2.00	24	
17	1.99	1.99	1.99	2.00	2.01	2.03	2.01	1.99	1.99	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	S	1.99	1.99	2.05	2.06	2.07	2.15	1.99	2.15	2.01	24	
18	2.14	2.01	2.00	2.00	2.00	2.01	2.02	2.02	2.02	2.00	2.04	2.01	2.03	2.02	2.00	2.03	S	2.04	2.00	2.00	2.01	2.05	2.00	2.01	2.00	2.14	2.02	24	
19	2.01	2.01	2.01	2.01	2.03	2.02	2.01	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.01	S	2.04	2.05	2.05	2.03	2.02	2.02	2.04	2.03	2.01	2.05	2.02	24	
20	2.01	2.00	2.00	2.00	2.00	2.00	1.99	2.00	2.00	2.00	2.01	2.00	2.00	2.01	S	2.01	2.01	2.00	2.01	2.01	2.01	2.01	2.01	2.01	1.99	2.01	2.00	24	
21	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	S	2.00	2.00	2.00	2.05	1.99	2.00	2.02	2.00	1.99	1.98	1.98	2.05	2.02	24	
22	1.98	2.01	2.04	2.05	2.05	2.03	2.01	2.01	2.01	2.00	1.99	2.00	S	2.01	2.01	2.02	1.99	2.01	1.99	1.99	2.00	2.00	2.00	2.01	1.98	2.05	2.01	24	
23	1.99	1.98	1.99	1.99	1.99	2.00	2.00	1.99	2.00	1.99	1.99	S	2.02	1.99	1.97	1.98	1.97	1.98	1.97	2.11	1.98	2.04	1.98	1.97	1.97	2.11	1.99	24	
24	1.98	1.98	1.97	1.98	1.98	1.98	1.98	1.98	1.99	1.99	S	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.99	1.98	24	
25	1.97	1.97	1.96	1.97	1.94	1.97	1.98	1.98	1.99	S	1.98	1.97	2.00	1.97	1.99	1.98	1.98	1.99	1.98	1.99	1.98	2.00	2.12	2.08	1.94	2.12	1.99	24	
26	2.05	2.13	2.11	2.02	2.01	2.00	2.01	2.00	S	2.01	2.01	2.02	2.02	2.01	2.01	2.00	1.99	1.99	1.97	1.97	2.00	1.97	2.00	1.99	1.97	2.13	2.01	24	
27	1.97	1.97	1.99	1.98	1.98	1.97	2.01	S	1.98	2.01	1.98	1.98	2.02	2.00	1.99	2.01	2.02	1.98	X	X	X	1.99	2.00	1.99	1.97	2.02	1.99	21	
28	2.07	2.05	2.02	2.02	2.04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.02	2.07	2.04	5	
HOURLY MAX	2.41	2.49	2.46	2.19	2.40	2.20	2.16	2.23	2.23	2.27	2.34	2.19	2.16	2.09	2.07	2.15	2.12	2.27	2.09	2.11	2.17	2.29	2.40	2.45					
HOURLY AVG	2.06	2.06	2.05	2.03	2.03	2.03	2.03	2.04	2.04	2.05	2.05	2.04	2.04	2.02	2.01	2.02	2.01	2.02	2.01	2.02	2.02	2.03	2.04	2.05	2.06				

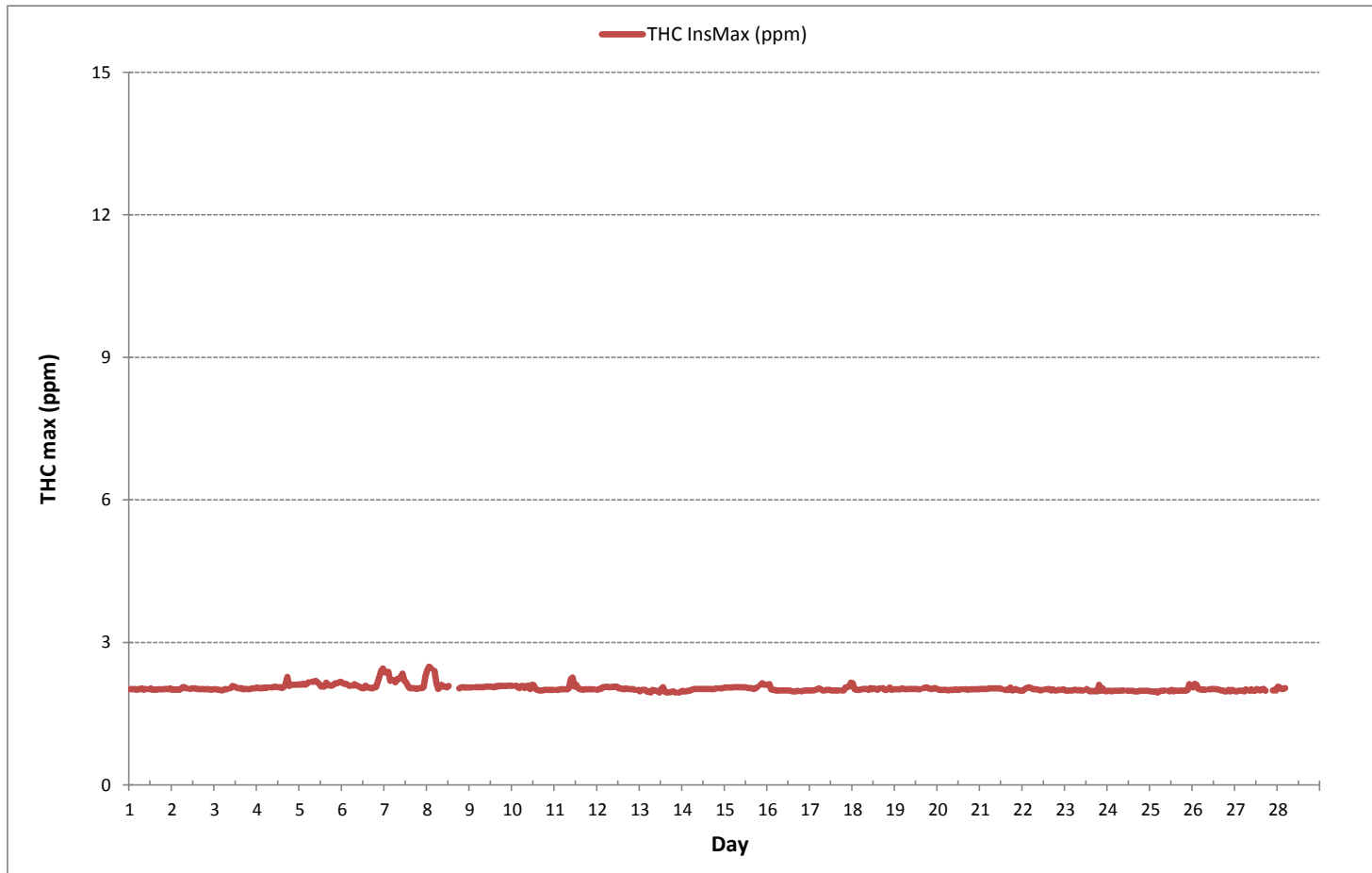
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	617				
MAXIMUM INSTANTANEOUS VALUE:	2.49	ppm	@ HOUR	1	ON DAY 8
IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	650	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.07				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 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	1.99	2.01	1.99	2.01	1.99	2.01	2.00	2.02	1.99	2.01	S	1.99	2.01	1.99	2.00	1.99	2.00	1.99	2.00	1.99	2.01	2.01	2.00	2.01	1.99	2.02	2.00	24	
2	1.99	2.00	1.98	2.00	1.98	2.01	2.05	2.05	2.01	S	2.01	2.02	2.02	2.02	2.01	2.00	2.00	2.00	1.99	2.00	2.01	2.00	1.99	2.00	1.98	2.05	2.01	24	
3	1.99	2.00	1.99	1.98	1.98	1.99	2.01	1.99	S	2.02	2.07	2.05	2.04	2.03	2.02	2.02	2.00	2.01	2.00	2.00	2.00	2.01	2.01	2.03	1.98	2.07	2.01	24	
4	2.03	2.01	2.03	2.02	2.04	2.02	2.04	S	2.04	2.05	2.05	2.04	2.04	2.05	2.03	2.05	2.09	2.26	2.06	2.08	2.08	2.08	2.08	2.09	2.01	2.26	2.06	24	
5	2.10	2.09	2.11	2.09	2.11	2.14	S	2.15	2.15	2.17	2.14	2.10	2.06	2.05	2.05	2.13	2.09	2.07	2.08	2.09	2.12	2.12	2.13	2.15	2.05	2.17	2.11	24	
6	2.13	2.12	2.11	2.09	2.07	S	2.07	2.10	2.08	2.06	2.05	2.02	2.01	2.08	2.04	2.03	2.02	2.02	2.04	2.04	2.15	2.28	2.39	2.43	2.01	2.43	2.11	24	
7	2.36	2.35	2.37	2.18	S	2.19	2.14	2.21	2.21	2.26	2.32	2.17	2.14	2.07	2.03	2.01	2.03	2.01	2.01	2.02	2.02	2.03	2.04	2.28	2.01	2.37	2.15	24	
8	2.39	2.48	2.44	S	2.38	2.13	2.01	2.03	2.09	2.06	2.05	2.04	2.07	C	C	C	C	C	2.02	2.04	2.05	2.04	2.04	2.03	2.01	2.48	2.13	24	
9	2.03	2.03	S	2.04	2.05	2.04	2.04	2.05	2.05	2.05	2.05	2.06	2.05	2.05	2.05	2.07	2.05	2.07	2.07	2.06	2.06	2.07	2.08	2.08	2.03	2.08	2.05	24	
10	2.06	S	2.07	2.04	2.02	2.06	2.06	2.02	2.07	2.08	2.00	2.08	2.08	2.00	1.98	1.98	1.98	1.97	1.98	1.99	1.99	1.99	1.98	1.99	1.97	2.08	2.02	24	
11	S	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.03	2.22	2.25	2.05	2.09	2.02	2.00	1.99	1.99	1.99	1.99	2.00	2.00	2.00	1.99	S	1.99	2.25	2.03	24	
12	1.98	2.01	2.01	2.05	2.05	2.05	2.05	2.05	2.05	2.06	2.05	2.05	2.02	2.01	2.00	2.00	2.01	2.01	2.01	1.99	2.00	2.00	1.99	S	1.99	1.98	2.06	2.02	24
13	1.95	1.99	1.98	1.99	1.94	1.95	1.93	1.99	1.97	1.98	1.95	1.93	2.01	2.04	1.94	1.93	1.95	1.94	1.95	1.96	1.94	S	1.93	1.94	1.93	2.04	1.96	24	
14	1.97	1.97	1.95	1.97	1.96	1.99	2.00	2.00	2.01	2.01	2.01	2.01	2.00	2.01	2.00	2.00	2.00	2.00	2.00	2.01	S	2.02	2.02	2.02	1.95	2.02	2.00	24	
15	2.04	2.03	2.03	2.03	2.04	2.04	2.04	2.05	2.05	2.05	2.04	2.04	2.04	2.03	2.03	2.02	2.01	2.01	2.04	S	2.09	2.12	2.08	2.08	2.01	2.12	2.04	24	
16	2.09	2.10	1.99	1.98	1.99	1.97	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.96	1.95	1.96	1.96	1.97	S	1.96	1.97	1.98	1.98	1.98	1.95	2.10	1.98	24	
17	1.98	1.98	1.98	1.98	2.00	2.02	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.97	1.98	2.04	2.05	2.05	2.13	1.97	2.13	2.00	24	
18	2.12	2.00	1.99	1.99	1.99	1.99	2.00	2.00	2.01	1.99	2.03	2.00	2.01	2.00	1.99	2.01	S	2.02	1.98	1.99	1.99	2.03	1.99	1.99	1.98	2.12	2.00	24	
19	1.99	2.00	2.00	2.00	2.01	2.00	2.00	2.00	2.00	2.01	2.01	2.00	2.00	2.00	2.00	S	2.03	2.04	2.04	2.02	2.01	2.00	2.03	2.01	1.99	2.04	2.01	24	
20	1.99	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	S	1.99	1.99	1.99	2.00	2.00	1.99	1.99	2.00	2.00	1.98	2.00	1.99	24	
21	2.00	2.00	2.00	2.01	2.01	2.01	2.01	2.02	2.02	2.02	2.01	2.01	2.01	S	1.99	1.98	1.98	2.04	1.98	1.98	2.00	1.98	1.98	1.97	1.97	2.04	2.00	24	
22	1.97	1.99	2.03	2.04	2.03	2.01	2.00	2.00	2.00	1.99	1.98	1.98	S	1.99	1.99	2.00	1.97	2.00	1.98	1.98	1.98	1.98	1.99	1.99	1.97	2.04	1.99	24	
23	1.98	1.97	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.98	1.98	S	2.00	1.98	1.95	1.96	1.95	1.96	1.96	2.09	1.96	2.02	1.97	1.96	1.95	2.09	1.98	24	
24	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.97	S	1.97	1.97	1.97	1.97	1.96	1.95	1.95	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.98	24	
25	1.96	1.95	1.95	1.96	1.93	1.95	1.96	1.96	1.97	S	1.96	1.95	1.99	1.95	1.97	1.96	1.97	1.98	1.96	1.97	1.97	1.99	2.10	2.06	1.93	2.10	1.97	24	
26	2.04	2.12	2.08	2.01	2.00	1.99	1.99	1.99	S	1.99	2.00	2.01	2.01	1.99	1.99	1.99	1.98	1.97	1.96	1.96	1.99	1.95	1.98	1.98	1.95	2.12	2.00	24	
27	1.95	1.96	1.97	1.96	1.96	1.96	2.00	S	1.97	2.00	1.97	1.96	2.01	1.98	1.98	2.00	2.00	1.97	X	X	X	1.98	1.99	1.98	1.95	2.01	1.98	21	
28	2.05	2.04	2.01	2.01	2.02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2.01	2.05	2.03	5	
HOURLY MAX	2.39	2.48	2.44	2.18	2.38	2.19	2.14	2.21	2.21	2.26	2.32	2.17	2.14	2.08	2.05	2.13	2.09	2.26	2.08	2.09	2.15	2.28	2.39	2.43					
HOURLY AVG	2.04	2.04	2.04	2.01	2.02	2.02	2.01	2.02	2.03	2.04	2.04	2.02	2.02	2.01	2.00	2.00	2.00	2.01	2.00	2.01	2.02	2.03	2.03	2.04					

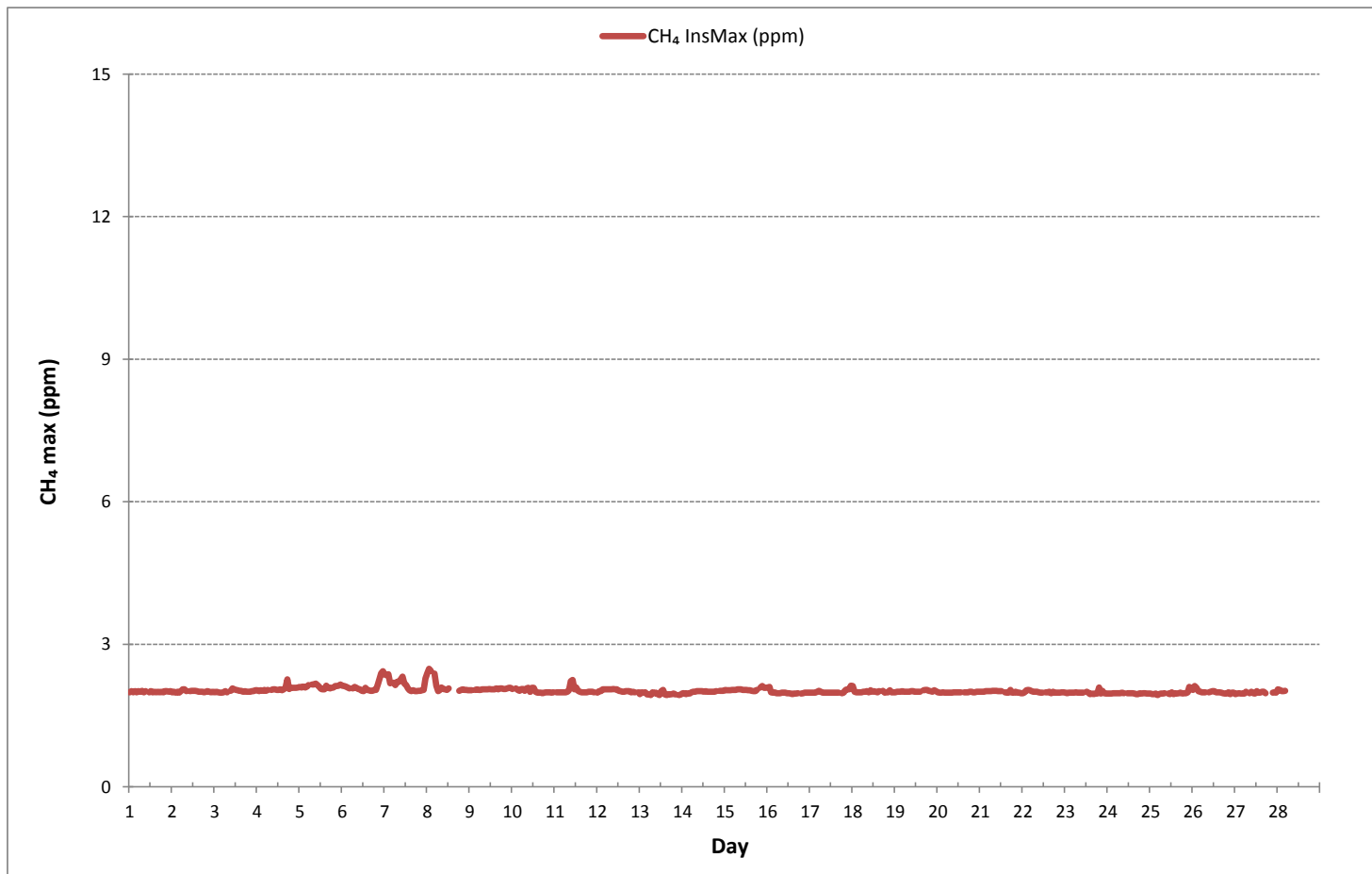
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	S	- 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:	617				
MAXIMUM INSTANTANEOUS VALUE:	2.48	ppm	@ HOUR	1	ON DAY 8
IZS CALIBRATION TIME:	28	hrs	OPERATIONAL TIME:	650	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.07				

METHANE MAX Instantaneous Maximum (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
7	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
8	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
9	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
10	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
11	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	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
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	0.00	0.00	0.00	0.00	0.00	0.00	21
28	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	5
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				

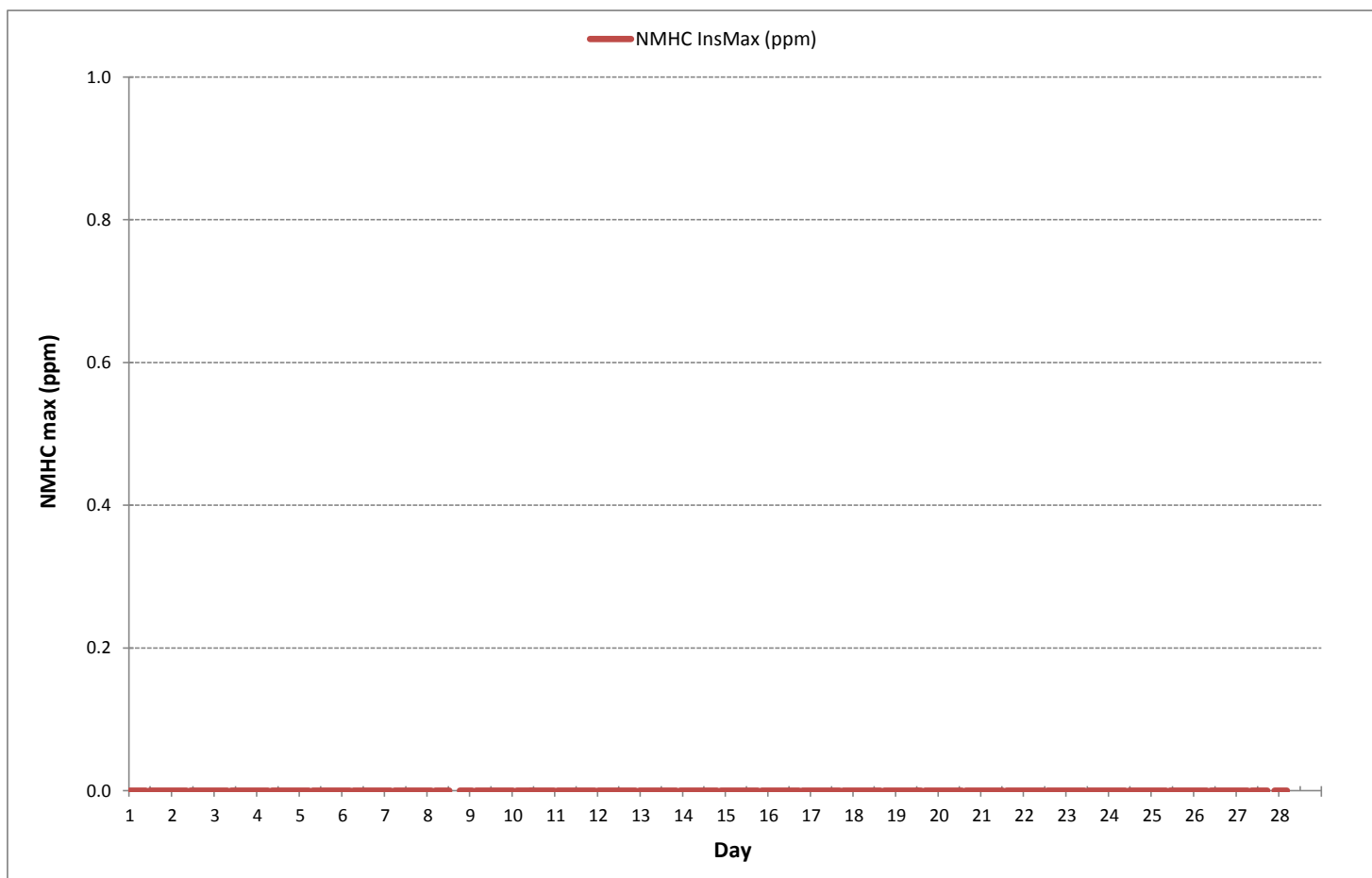
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0
MAXIMUM INSTANTANEOUS VALUE:	0.00 ppm @ HOUR 0 ON DAY 1
IZS CALIBRATION TIME:	28 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.00
OPERATIONAL TIME:	650 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - February 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	7.5	9.7	9.6	11.1	13.3	10.5	8.7	10.4	11.7	12.1	14.3	11.5	13.9	15.1	12.7	12.4	12.8	10.8	11.4	15.0	13.0	6.8	6.8	7.2	6.8	15.1	11.2	24
2	7.1	7.9	8.9	8.0	8.6	8.2	7.9	10.6	12.7	18.3	17.8	16.4	17.3	18.7	20.7	19.5	17.0	16.3	17.1	15.3	13.0	14.6	13.7	14.2	7.1	20.7	13.7	24
3	16.4	20.0	16.5	14.5	15.5	10.7	4.7	4.8	5.2	7.1	13.7	14.0	14.9	18.3	18.7	25.0	23.5	23.8	27.0	27.3	28.1	26.5	23.7	22.5	4.7	28.1	17.6	24
4	22.4	26.4	20.5	19.0	15.3	14.4	11.6	12.3	10.5	10.8	13.3	15.6	16.8	17.9	8.6	7.8	8.5	10.8	7.2	7.3	7.1	6.6	5.9	5.1	5.1	26.4	12.6	24
5	5.9	5.9	6.5	7.3	9.6	10.4	8.7	10.9	18.3	18.0	20.0	19.8	19.8	21.8	13.9	14.5	11.0	10.9	11.2	13.0	11.9	9.4	6.8	9.8	5.9	21.8	12.3	24
6	9.5	9.7	7.7	6.1	6.5	7.8	6.4	3.7	4.3	5.9	10.3	9.6	12.5	19.4	11.9	7.2	5.6	4.3	2.0	6.8	8.2	8.3	9.5	7.5	2.0	19.4	7.9	24
7	6.2	6.2	5.8	9.8	4.0	4.3	3.0	5.3	3.3	4.1	7.3	8.9	6.6	7.0	9.4	11.0	8.5	7.9	7.7	7.8	5.8	6.5	6.2	5.6	3.0	11.0	6.6	24
8	4.3	6.4	4.1	2.8	6.5	10.1	9.8	9.5	5.4	5.0	6.9	7.8	8.4	8.2	8.5	10.6	11.3	16.6	17.8	19.1	20.3	17.3	17.5	21.1	2.8	21.1	10.6	24
9	19.4	20.2	16.1	17.6	22.1	22.2	18.3	15.8	16.6	16.9	23.5	21.3	20.6	22.3	19.9	19.5	21.6	16.4	14.3	13.9	11.0	10.8	8.7	7.6	7.6	23.5	17.4	24
10	6.1	7.0	6.9	10.8	17.6	15.3	15.5	14.1	12.8	11.2	10.6	10.7	10.0	17.3	20.9	26.2	17.7	23.7	26.0	29.9	34.3	40.3	38.7	31.0	6.1	40.3	18.9	24
11	27.3	17.1	14.9	8.3	7.6	4.6	3.0	3.4	4.7	9.6	6.2	11.3	12.4	14.2	18.1	16.5	17.9	15.4	16.0	19.2	20.5	17.9	15.4	20.9	3.0	27.3	13.4	24
12	26.9	29.8	27.7	29.3	30.0	23.6	28.6	29.6	29.2	30.3	39.3	29.5	31.2	29.6	28.8	32.4	31.0	31.8	29.5	27.4	34.0	32.3	30.1	30.7	23.6	39.3	30.1	24
13	32.2	36.9	35.1	35.1	29.8	35.5	37.1	33.5	30.7	26.1	34.8	34.5	12.4	21.8	30.1	33.0	32.6	25.5	23.0	21.8	20.0	31.6	41.9	41.5	12.4	41.9	30.7	24
14	52.1	43.1	49.5	42.6	36.7	36.3	36.4	30.7	26.0	23.4	21.5	22.8	19.0	17.1	16.3	12.8	8.0	10.3	13.1	13.0	13.7	9.0	7.1	5.6	5.6	52.1	23.6	24
15	6.5	9.0	12.1	12.3	15.0	14.1	8.6	9.1	11.5	19.6	23.6	27.0	26.5	26.0	25.9	24.2	27.5	24.4	22.7	22.6	17.4	16.7	15.5	14.3	6.5	27.5	18.0	24
16	15.1	16.0	14.1	11.5	16.1	11.5	24.0	20.1	24.8	23.7	27.1	27.0	31.0	30.1	21.7	21.9	20.4	15.0	14.4	15.9	18.7	16.7	13.2	16.7	11.5	31.0	19.4	24
17	12.6	15.3	13.8	8.0	5.0	13.5	24.6	23.8	17.8	20.5	23.1	24.6	32.4	35.9	33.5	36.7	26.9	18.9	9.2	5.9	13.1	12.2	5.9	8.6	5.0	36.7	18.4	24
18	12.2	12.7	10.6	15.9	18.0	14.3	12.4	11.3	8.6	9.6	11.5	14.7	16.5	23.6	19.6	21.4	19.3	15.6	14.8	7.2	12.1	13.0	12.2	11.9	7.2	23.6	14.1	24
19	19.2	21.3	21.7	20.5	19.7	17.4	17.8	14.4	16.3	20.5	22.6	20.5	20.8	24.7	26.1	27.8	23.2	18.0	9.5	5.5	4.9	4.9	4.3	5.1	4.3	27.8	16.9	24
20	8.4	24.3	21.8	18.5	10.8	10.9	13.3	13.1	15.8	20.7	26.0	22.5	23.6	19.9	16.9	15.1	16.5	17.6	15.9	17.4	12.9	17.5	18.9	18.2	8.4	26.0	17.4	24
21	16.5	17.1	23.0	18.7	22.0	19.6	21.1	24.2	19.1	18.3	16.6	16.4	13.4	15.2	23.1	21.0	12.2	9.5	9.5	13.3	14.6	11.9	11.8	12.5	9.5	24.2	16.7	24
22	5.4	10.0	9.7	6.1	6.5	14.8	12.6	10.0	7.9	10.4	16.2	15.7	24.3	24.5	27.8	30.2	27.2	24.4	17.5	13.5	17.7	25.2	27.0	29.5	5.4	30.2	17.3	24
23	29.9	31.7	25.9	32.0	30.9	30.2	31.2	38.2	36.3	27.7	28.4	34.0	33.2	35.7	35.0	31.7	22.4	27.2	23.3	15.0	18.4	15.2	17.3	17.4	15.0	38.2	27.8	24
24	28.9	27.5	28.4	25.4	23.2	21.7	29.7	17.8	14.8	12.3	14.7	11.1	13.1	13.1	11.9	14.2	13.7	11.4	8.5	9.4	12.1	16.1	18.4	17.7	8.5	29.7	17.3	24
25	17.2	15.1	13.4	14.8	13.2	9.6	6.0	10.2	14.9	15.9	22.7	22.0	19.2	22.8	18.4	20.1	13.0	11.9	8.2	5.6	4.2	5.9	8.2	9.9	4.2	22.8	13.4	24
26	9.3	11.4	12.7	17.5	17.9	15.3	18.9	14.0	13.6	27.1	21.3	24.5	25.8	29.8	27.9	32.6	27.6	32.5	32.2	37.3	35.6	41.4	58.2	48.1	9.3	58.2	26.4	24
27	41.9	34.5	43.4	27.9	36.5	30.4	32.6	20.1	20.2	22.4	27.9	18.0	21.7	27.4	30.4	24.9	38.8	19.5	11.7	14.4	15.5	8.6	6.1	6.0	6.0	43.4	24.2	24
28	10.0	12.0	11.7	10.9	9.4	8.9	7.8	7.1	9.7	14.9	17.1	16.6	15.7	16.3	18.2	16.6	14.6	10.1	4.8	8.3	11.2	8.0	10.3	12.8	4.8	18.2	11.8	24
HOURLY MAX	52.1	43.1	49.5	42.6	36.7	36.3	37.1	38.2	36.3	30.3	39.3	34.5	33.2	35.9	35.0	36.7	38.8	32.5	32.2	37.3	35.6	41.4	58.2	48.1				
HOURLY AVG	17.0	18.0	17.6	16.5	16.7	15.9	16.4	15.3	15.1	16.5	19.2	18.9	19.0	21.2	20.5	21.0	18.9	17.2	15.2	15.3	16.0	16.1	16.4	16.4				

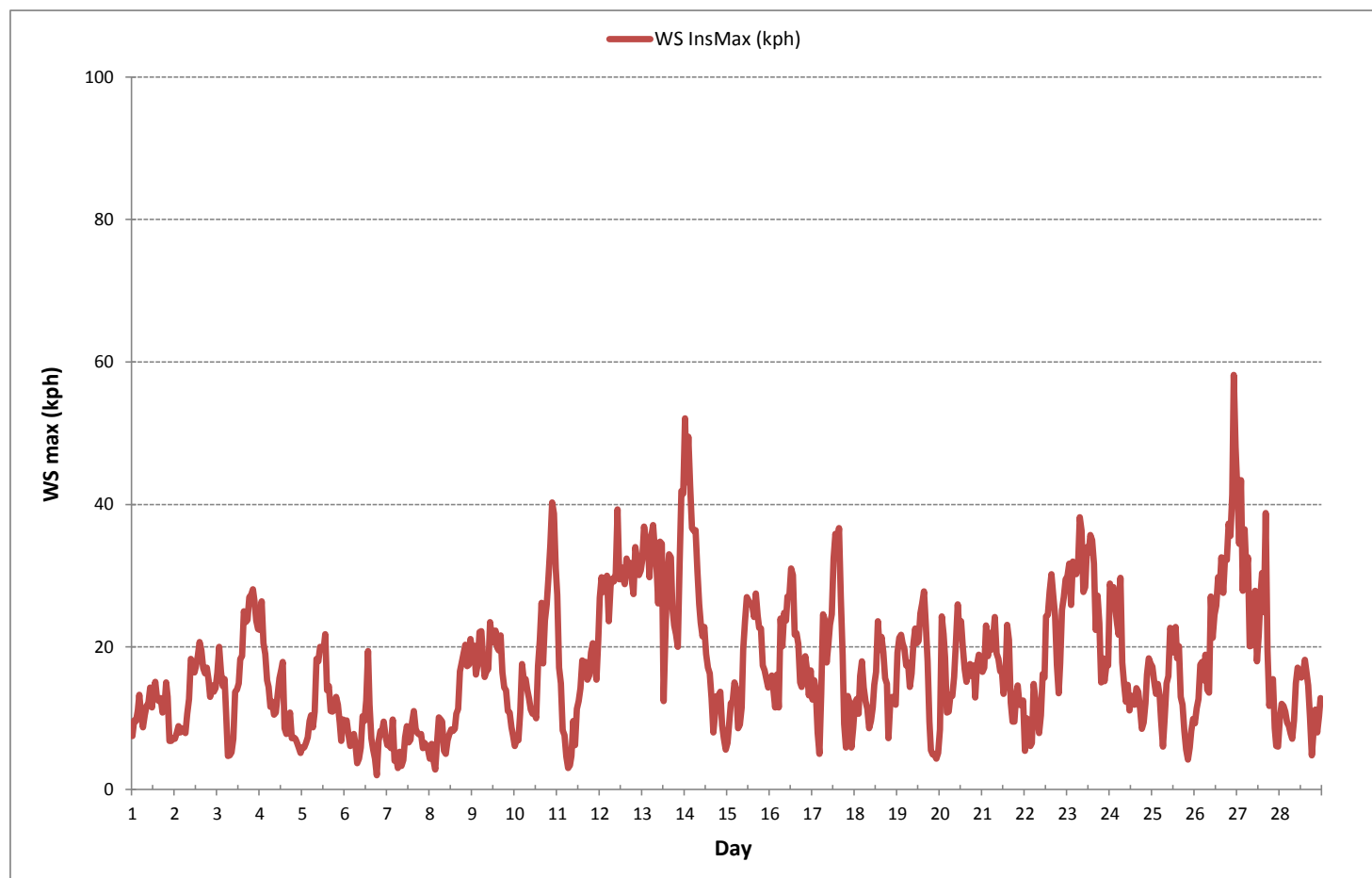
STATUS FLAG CODES

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:	58.2	kph	@ HOUR	22	ON DAY	26
OPERATIONAL TIME:	672	hrs				

WIND SPEED Instantaneous Maximum (WS kph)

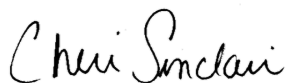


APPENDIX IV
REPORT CERTIFICATION FORM

Report Certification Form

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

03-21-2018

Report Issued Date (dd-mm-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2018-02-80-C

Site: Three Creeks 842b Station

Contact: Karla Reesor

Level 0 Preliminary Verification

Carla Reesor

Date March 13, 2018

Level 1 Primary Validation

Carla Reesor

Date March 13, 2018

Level 2 Final Validation

Carla Reesor

Date March 20, 2018

Level 3 Independent Data Review

Cheri Sinclair

Date March 21, 2018

Post-Final Validation

NA

Date NA

Notes

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