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AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
THREE CREEKS 986B STATION

JOB #: 8449-2017-09-67-C

September 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **October 19, 2017**

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 September 2017, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Three Creeks 986b Station, near Peace River Oil Sands Area 2, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for compliance parameters, as requested by the PRAMP Committee.

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

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

Power Failure: Downtime ranging from twelve to fourteen hours were recorded on gas analyzers and meteorological systems between September 13 and September 15, due to power failures, subsequent recovery periods and quality checks performed to assess equipment response following power restoration.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee, Three Creeks 986b Station.

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

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Three Creeks 986b 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	1	5	13	5.5	SSW	1	27	98.1
TRS (ppb)	-	-	-	-	0.51	5.71	12	21	0.9	NNE	1.22	13	98.1
THC (ppm)	-	-	-	-	1.99	2.64	6	1	2	E	2.13	6	98.1
CH ₄ (ppm)	-	-	-	-	1.99	2.64	6	1	2	E	2.13	6	98.1
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	4.9	SSW	0.00	1	98.1
RELATIVE HUMIDITY (%)	-	-	-	-	71	98	3	0	3.6	SW	84	2	98.3
BAROMETRIC PRESSURE (millibar)	-	-	-	-	941	958	4	6	1.3	ESE	956	4	98.3
AMBIENT TEMPERATURE (°C)	-	-	-	-	11.6	29.8	6	16	7	S	18.1	7	98.3
STATION TEMPERATURE (°C)	-	-	-	-	21.4	25.8	15	7	9.3	SE	22.5	15	98.3
VECTOR WS (kph)	-	-	-	-	2.1	19.5	16	11	-	SSE	11.8	16	98.3
VECTOR WD (sec)	-	-	-	-	185 (S)	-	-	-	-	-	-	-	98.3

SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY

Three Creeks 986b Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	September

CONTINUOUS AMBIENT MONITORING							
		ONE - HOUR AVERAGE		24 - HOUR AVERAGE			
PARAMETER	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO ₂	98.1	0.001	ppm	0	0.001	ppm	0
TRS	98.1	0.006	ppm	-	0.001	ppm	-
THC	98.1	2.64	ppm	-	2.13	ppm	-
CH ₄	98.1	2.64	ppm	-	2.13	ppm	-
NMHC	98.1	0.00	ppm	-	0.00	ppm	-
RH	98.3	98	%	-	84	%	-
BP	98.3	958	mb	-	956	mb	-
Ambient TPX	98.3	29.8	°C	-	18.1	°C	-
Station TPX	98.3	25.8	°C	-	22.5	°C	-
Precipitation	0.0	0.0	mm		0.0	mm	
Wind Speed	98.3	19.5	kph	-	11.8	kph	-
Wind Direction	98.3	-		-	-		-

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.

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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).

Sample filters for all continuous air monitors are changed 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 98.1%, equivalent to fourteen hours of downtime.
- The routine monthly calibration was performed on September 18.
- Due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00, twelve hours of downtime were recorded.
- Data collected at hour 13:00 on September 13 was invalidated as the analyzer was recovering from the power failure. A zero/span check was completed at hour 07:00 on September 15 as a quality check following the power failure. However, the response was poor possibly because the zero/span system was stabilizing. More time was allowed and a successful zero/span check was completed at hour 20:00. Two more hours of downtime were therefore incurred.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 98.1%, equivalent to fourteen hours of downtime.
- The routine monthly calibration was performed on September 18.
- Due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00, twelve hours of downtime were recorded.
- Data collected at hour 13:00 on September 13 was invalidated as the analyzer was recovering from the power failure. A zero/span check was completed at hour 07:00 on September 15 as a quality check following the power failure. However, the response was poor possibly because the zero/span system was stabilizing. More time was allowed and a successful zero/span check was completed at hour 20:00. Two more hours of downtime were therefore incurred.

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

- Operational time, for the monitoring period was 98.1%, equivalent to fourteen hours of downtime.
- The routine monthly calibration was performed on September 18.
- Due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00, twelve hours of downtime were recorded.
- Data collected at hour 13:00 on September 13 was invalidated as the analyzer was recovering from the power failure, one hour of downtime was incurred. A zero/span check initiated at hour 07:00 on September 15 to assess analyzer response following the power failure, extended to hour 08:00, causing an unintended hour of downtime.
- On September 17, at hour 07:06, the THC maximum instantaneous data yielded an off-scan error. The hourly instance, along with the corresponding CH₄ and NMHC maximum instantaneous data, was therefore invalidated.
- 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 98.3%, equivalent to twelve hours of downtime. These were incurred due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00.
- 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 98.3%, equivalent to twelve hours of downtime. These were incurred due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00.

BAROMETRIC PRESSURE (BP)

- Operational time, for the monitoring period was 98.3%, equivalent to twelve hours of downtime. These were incurred due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time, for the monitoring period was 98.3%, equivalent to twelve hours of downtime. These were incurred due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00.

STATION TEMPERATURE (StnTPX)

- Operational time, for the monitoring period was 98.3%, equivalent to twelve hours of downtime. These were incurred due to two power failures that occurred on September 13, hours 10:00 to 12:00 and September 14, hour 22:00 to September 15, hour 06:00.

2.0 Project Personnel

Karla 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-00208: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - Thermo 43C UV Fluorescent Analyzer

Total Reduced Sulphur - Thermo 43i-TLE UV Fluorescent Analyzer

Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer

Wind System - RM Young Unit

Relative Humidity - RM Young Unit

Barometric Pressure - Met One Unit

Ambient Temperature - RM Young Unit

Datalogger - ESC 8832

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

Level 0 Preliminary Verification

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

Level 1 Primary Validation

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

Level 2 Final Validation

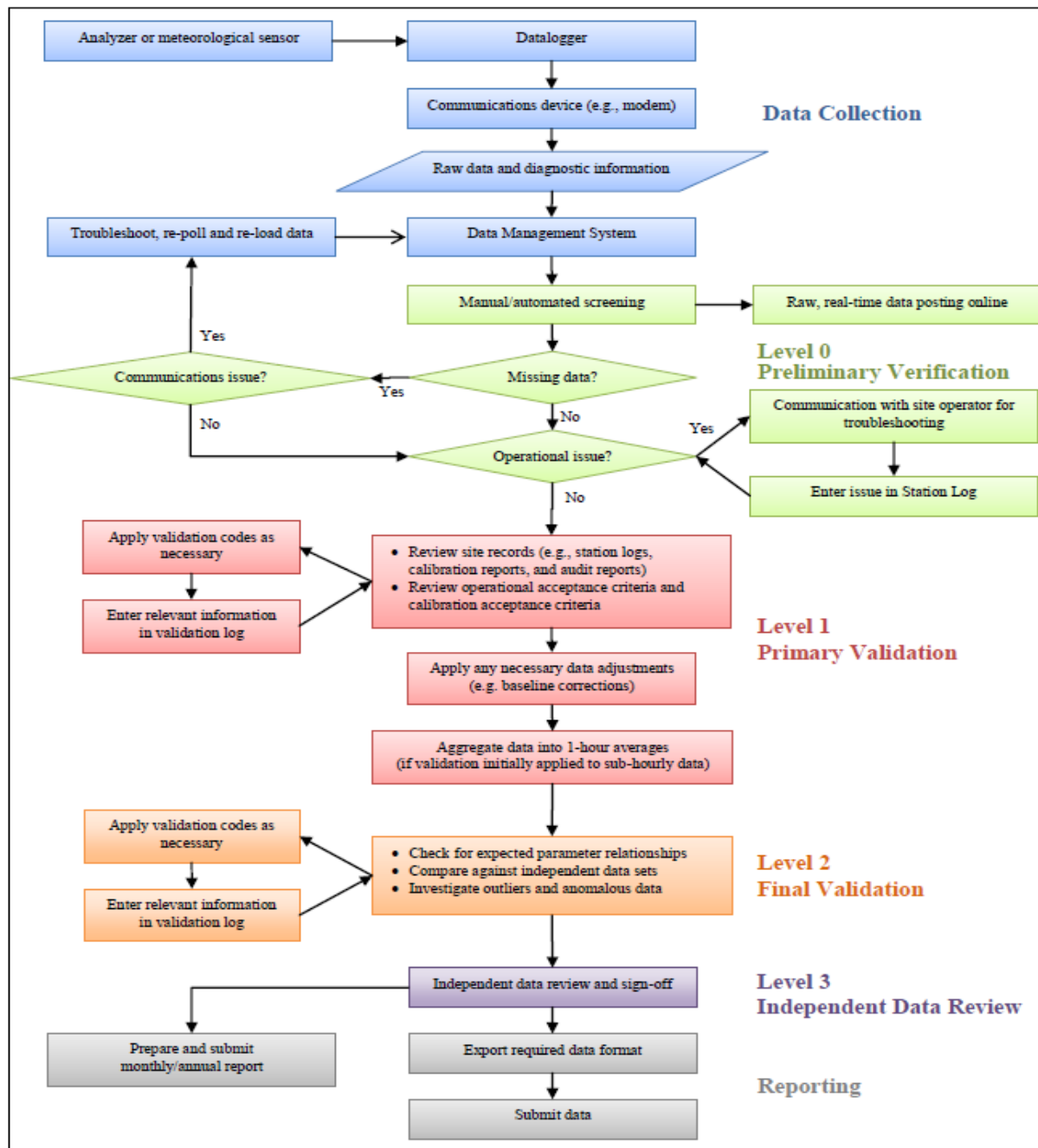
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

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



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

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

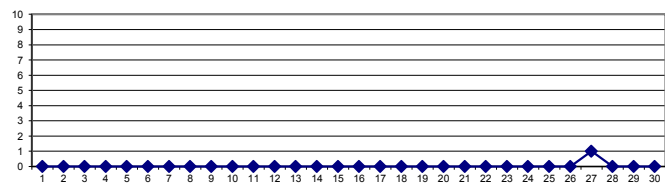
SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
2	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
3	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
5	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
6	0	0	0	0	0	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
7	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
8	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
9	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	24
10	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	24
11	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
12	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
13	0	0	0	0	0	S	0	0	0	0	P	P	P	R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
14	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	0	0	0	0	22
15	P	P	P	P	P	P	P	S1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	16
16	0	1	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
17	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
18	0	0	0	0	0	S	0	0	0	C	C	C	C	C	1	1	1	0	0	0	0	0	0	1	0	1	0	24	
19	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	24
20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
21	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
22	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	24
23	0	0	0	0	0	S	0	1	0	1	1	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	24
24	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
25	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
26	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	24	
27	0	1	1	1	1	S	1	0	1	1	1	1	1	0	0	1	1	1	0	0	0	1	0	0	0	0	1	1	24
28	0	0	1	0	0	S	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	24
29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	24	
30	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
HOURLY MAX	0	1	1	1	1	NA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1					
HOURLY AVG	0	0	0	0	0	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					

STATUS FLAG CODES

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

24 HR AVERAGES September 2017



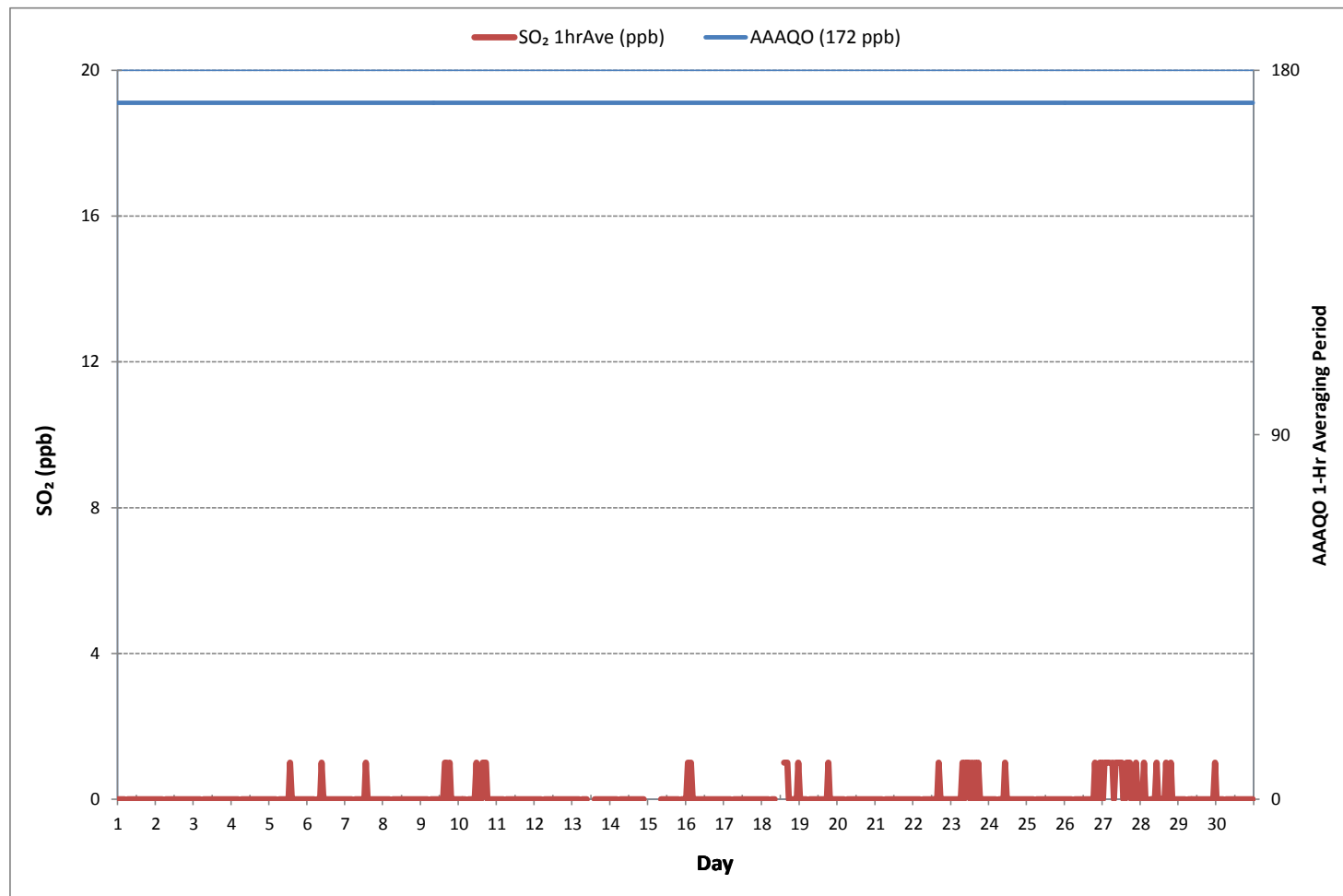
OBJECTIVE LIMIT:

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:	48
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 13 ON DAY 5
MAXIMUM 24-HR AVERAGE:	1 ppb ON DAY 27
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
OPERATIONAL TIME:	706 hrs
AMD OPERATION UPTIME:	98.1 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - September 2017

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

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

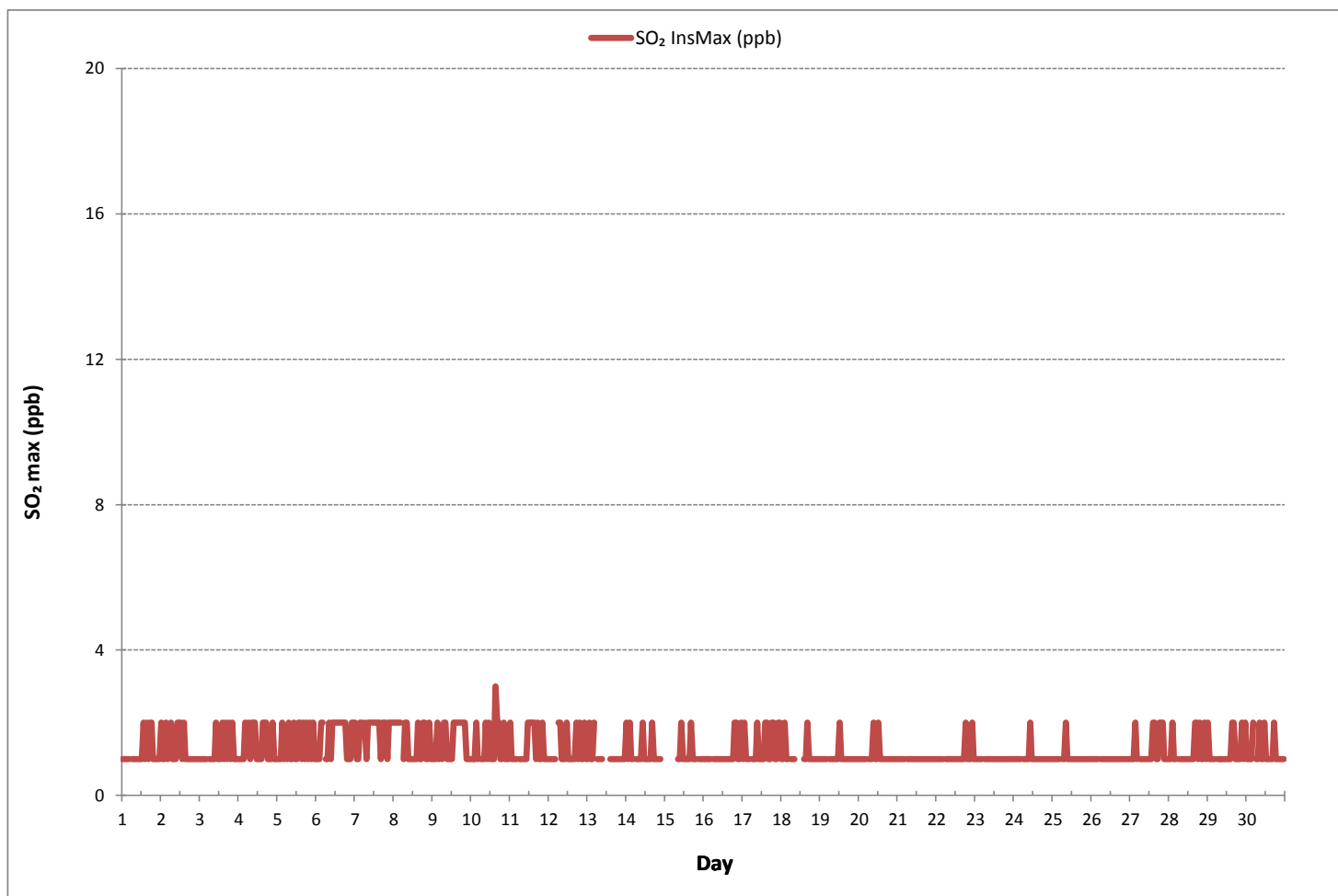
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671
MAXIMUM INSTANTANEOUS VALUE:	3 ppb @ HOUR 15 ON DAY 10
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0
OPERATIONAL TIME:	706 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



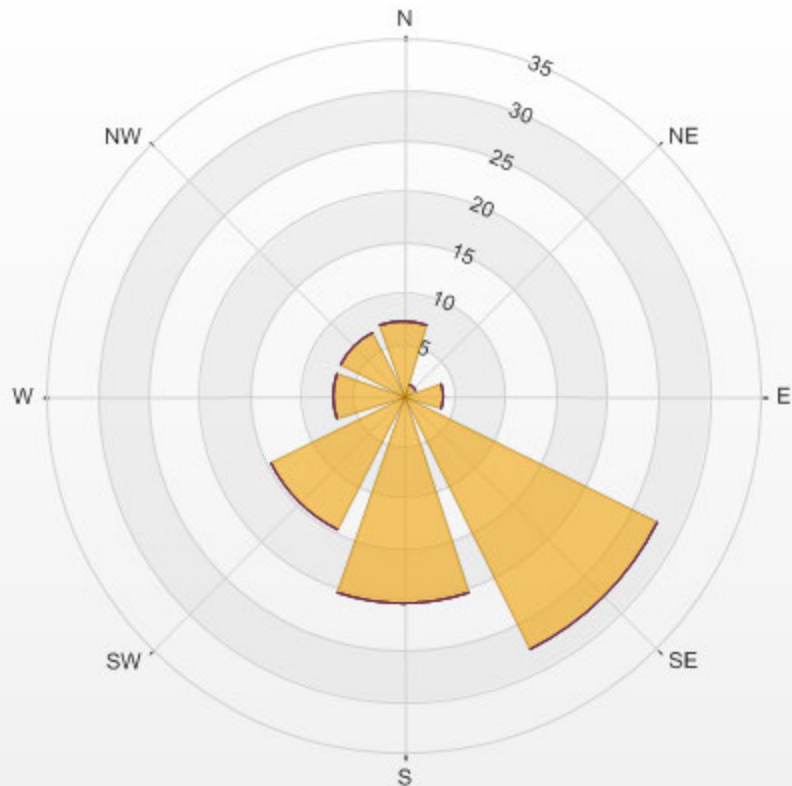
Wind: PRAMP_986
Poll.: PRAMP_986-SO2[ppb]
Monthly: 17/09
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.58%

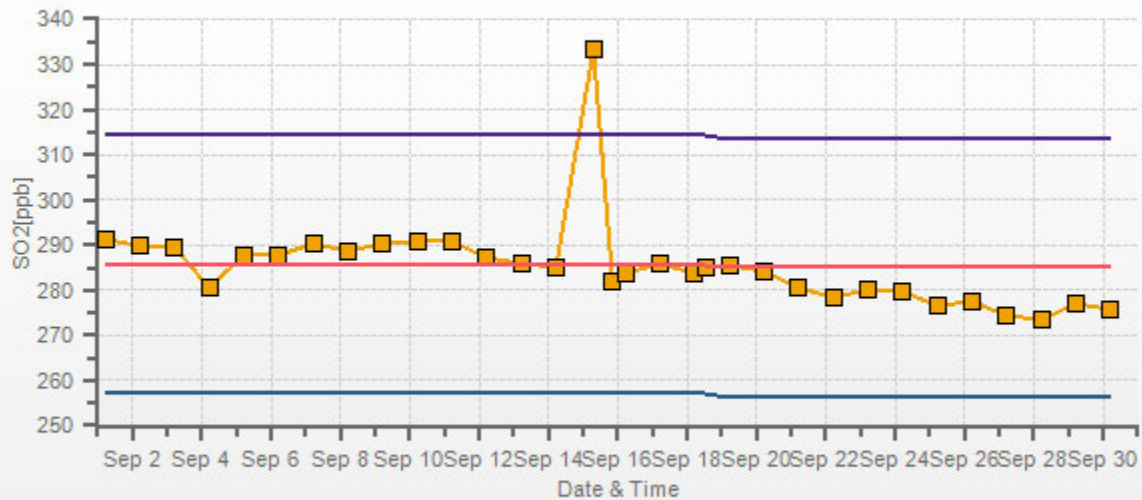
Calm Avg: 0.13 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	7.3	0.0	0.0	0.0	0.0	7.3
NE	1.3	0.0	0.0	0.0	0.0	1.3
E	3.9	0.0	0.0	0.0	0.0	3.9
SE	27.9	0.0	0.0	0.0	0.0	27.9
S	20.4	0.0	0.0	0.0	0.0	20.4
SW	14.6	0.0	0.0	0.0	0.0	14.6
W	7.0	0.0	0.0	0.0	0.0	7.0
NW	7.0	0.0	0.0	0.0	0.0	7.0
Summary	89.4	0.0	0.0	0.0	0.0	89.4

PRAMP_986 Poll.: PRAMP_986-SO2[ppb] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.58% Calm Poll Avg: 0.13[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 17/09 Type: Span



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

TOTAL REDUCED SULPHUR

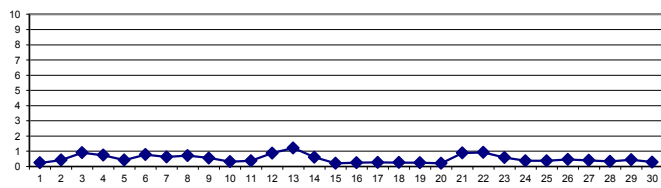
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.25	0.25	0.25	0.27	0.27	S	0.30	0.27	0.28	0.29	0.24	0.20	0.20	0.19	0.20	0.19	0.20	0.22	0.21	0.23	0.22	0.22	0.23	0.24	0.19	0.30	0.24	24
2	0.25	0.28	0.32	0.40	0.51	S	0.51	0.50	0.33	0.30	0.34	0.35	0.36	0.36	0.34	0.34	0.31	0.33	0.28	0.28	0.72	0.52	0.72	1.30	0.25	1.30	0.43	24
3	0.52	0.73	0.80	1.77	2.26	S	2.46	1.16	0.65	0.40	0.30	0.26	0.25	0.26	0.24	0.27	0.22	0.20	0.19	0.23	0.73	2.44	2.43	2.08	0.19	2.46	0.91	24
4	2.02	1.59	1.69	1.65	1.72	S	1.31	1.24	0.90	0.37	0.25	0.22	0.23	0.26	0.22	0.21	0.21	0.20	0.22	0.49	0.75	0.56	0.40	0.38	0.20	2.02	0.74	24
5	0.34	0.34	0.44	0.54	0.63	S	0.52	0.51	0.27	0.23	0.24	0.29	0.29	0.24	0.22	0.22	0.21	0.21	0.27	0.69	0.91	0.70	0.87	0.79	0.21	0.91	0.43	24
6	1.33	1.54	1.50	1.40	1.66	S	1.80	1.26	0.50	0.34	0.31	0.30	0.33	0.32	0.32	0.31	0.30	0.28	0.38	0.84	0.91	0.69	0.77	0.65	0.28	1.80	0.78	24
7	0.69	0.72	0.63	0.72	0.83	S	1.25	1.24	0.65	0.33	0.36	0.40	0.37	0.36	0.35	0.36	0.38	0.43	0.48	0.55	0.88	0.98	0.81	0.53	0.33	1.25	0.62	24
8	0.95	1.21	0.49	0.44	0.60	S	0.53	0.43	0.54	1.26	1.32	0.55	0.42	0.43	0.39	0.36	0.34	0.34	0.45	0.70	1.21	0.98	1.10	1.55	0.34	1.55	0.72	24
9	1.33	0.75	0.83	0.98	1.19	S	1.21	1.06	0.60	0.50	0.36	0.34	0.40	0.34	0.30	0.29	0.28	0.27	0.29	0.32	0.29	0.30	0.29	0.29	0.27	1.33	0.56	24
10	0.28	0.28	0.29	0.29	0.31	S	0.41	0.35	0.31	0.31	0.30	0.32	0.29	0.31	0.31	0.38	0.38	0.37	0.29	0.28	0.30	0.31	0.31	0.32	0.28	0.41	0.32	24
11	0.30	0.30	0.33	0.56	0.81	S	0.56	0.58	0.60	0.53	0.50	0.41	0.29	0.24	0.25	0.27	0.26	0.32	0.24	0.25	0.25	0.23	0.22	0.23	0.22	0.81	0.37	24
12	0.24	0.31	0.39	0.44	0.69	S	0.56	0.50	0.35	0.26	0.25	0.24	0.25	0.22	0.22	0.20	0.25	0.24	0.24	0.27	2.00	5.71	1.14	5.29	0.20	5.71	0.88	24
13	4.92	4.23	2.92	4.60	1.38	S	0.62	0.74	0.23	0.21	P	P	P	R	0.19	0.18	0.18	0.16	0.18	0.59	0.30	0.74	0.43	0.31	0.16	4.92	1.22	20
14	0.73	0.43	0.28	0.61	2.02	S	1.78	1.46	0.65	0.35	0.33	0.25	0.23	0.23	0.21	0.21	0.25	0.21	0.25	0.62	1.08	0.56	P	P	0.21	2.02	0.61	22
15	P	P	P	P	P	P	P	S1	0.35	0.23	0.21	0.21	0.19	0.20	0.18	0.18	0.17	0.18	0.21	0.25	S	0.31	0.26	0.24	0.17	0.35	0.22	16
16	0.26	0.25	0.25	0.25	0.27	S	0.35	0.31	0.28	0.25	0.24	0.24	0.23	0.22	0.23	0.23	0.22	0.22	0.24	0.24	0.23	0.24	0.24	0.24	0.22	0.35	0.25	24
17	0.25	0.24	0.26	0.31	0.37	S	0.44	0.41	0.30	0.25	0.22	0.23	0.20	0.22	0.21	0.21	0.20	0.22	0.24	0.26	0.30	0.29	0.27	0.27	0.20	0.44	0.27	24
18	0.28	0.28	0.25	0.27	0.30	S	0.32	0.27	0.24	0.22	0.20	0.21	0.19	C	C	C	C	0.26	0.21	0.19	0.24	0.30	0.37	0.35	0.19	0.37	0.26	24
19	0.41	0.36	0.29	0.32	0.35	S	0.33	0.23	0.22	0.19	0.17	0.15	0.17	0.17	0.17	0.23	0.30	0.24	0.26	0.26	0.24	0.28	0.23	0.23	0.15	0.41	0.25	24
20	0.22	0.21	0.21	0.20	0.22	S	0.25	0.24	0.23	0.21	0.20	0.20	0.19	0.19	0.18	0.19	0.19	0.20	0.22	0.21	0.21	0.22	0.21	0.21	0.18	0.25	0.21	24
21	0.21	0.22	0.24	0.21	0.23	S	0.27	0.28	0.26	0.22	0.23	0.22	0.20	0.20	0.20	0.20	0.20	0.19	0.28	0.69	4.84	4.61	3.07	3.12	0.19	4.84	0.89	24
22	2.20	1.12	1.89	2.28	1.49	S	2.20	1.03	0.79	0.71	0.23	0.19	0.21	0.20	0.20	0.19	0.21	0.25	0.78	2.76	1.15	0.55	0.38	0.40	0.19	2.76	0.93	24
23	0.39	0.39	0.44	0.37	0.39	S	0.41	0.46	0.37	0.24	0.22	0.21	0.20	0.20	0.20	0.20	0.19	0.33	1.80	2.74	1.57	0.92	0.72	0.40	0.19	2.74	0.58	24
24	0.45	0.38	0.51	0.38	0.49	S	0.55	0.51	0.40	0.37	0.25	0.25	0.26	0.24	0.24	0.23	0.23	0.28	0.38	0.52	0.40	0.37	0.41	0.47	0.23	0.55	0.37	24
25	0.46	0.55	0.56	0.59	0.60	S	0.55	0.47	0.35	0.34	0.29	0.28	0.26	0.24	0.22	0.22	0.22	0.20	0.24	0.25	0.34	0.64	0.39	0.53	0.20	0.64	0.38	24
26	0.63	0.69	0.65	0.72	0.63	S	0.72	0.86	0.61	0.34	0.26	0.25	0.22	0.24	0.23	0.22	0.22	0.25	0.50	0.75	0.55	0.42	0.30	0.34	0.22	0.86	0.46	24
27	0.34	0.51	0.54	0.60	0.59	S	0.71	0.43	0.45	0.38	0.33	0.30	0.28	0.26	0.24	0.24	0.23	0.23	0.34	0.51	0.48	0.43	0.46	0.41	0.23	0.71	0.40	24
28	0.43	0.39	0.38	0.38	0.44	S	0.44	0.42	0.40	0.34	0.27	0.24	0.23	0.24	0.22	0.23	0.23	0.25	0.34	0.36	0.30	0.33	0.37	0.39	0.22	0.44	0.33	24
29	0.33	0.48	0.51	0.45	0.63	S	0.78	0.71	0.56	0.33	0.30	0.30	0.30	0.30	0.27	0.23	0.21	0.25	0.55	0.51	0.57	0.61	0.49	0.41	0.21	0.78	0.44	24
30	0.48	0.49	0.48	0.41	0.39	S	0.31	0.29	0.31	0.29	0.28	0.26	0.23	0.24	0.23	0.22	0.22	0.23	0.22	0.21	0.22	0.23	0.22	0.23	0.21	0.49	0.29	24
HOURLY MAX	4.92	4.23	2.92	4.60	2.26	NA	2.46	1.46	0.90	1.26	1.32	0.55	0.42	0.43	0.39	0.38	0.38	0.43	1.80	2.76	4.84	5.71	3.07	5.29				
HOURLY AVG	0.74	0.67	0.64	0.77	0.77	NA	0.77	0.63	0.43	0.35	0.31	0.27	0.26	0.25	0.24	0.24	0.24	0.25	0.36	0.57	0.77	0.86	0.62	0.77				

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

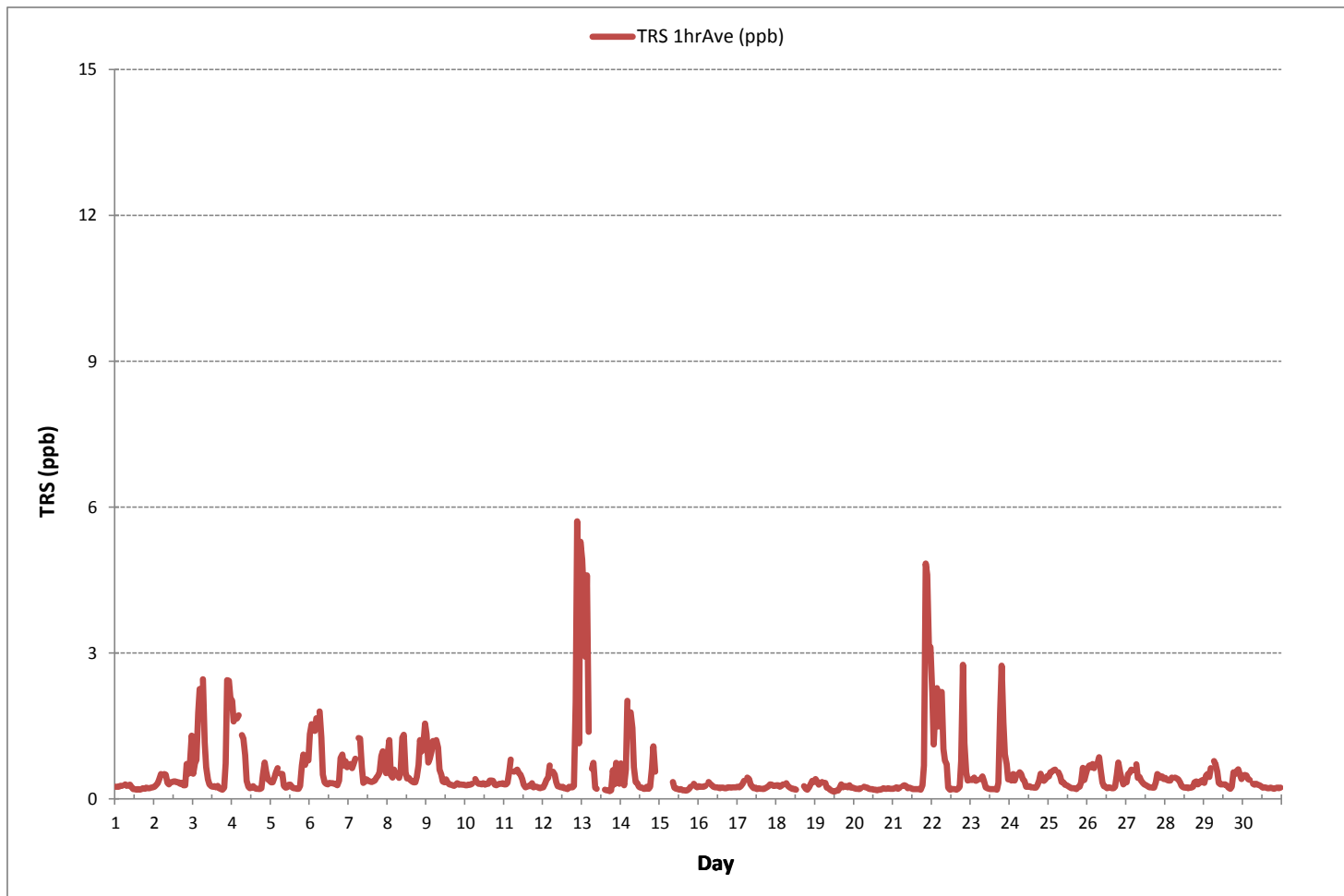
24 HR AVERAGES September 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	672				
MINIMUM 1-HR AVERAGE:	0.15	ppb	@ HOUR	11	ON DAY
MAXIMUM 1-HR AVERAGE:	5.71	ppb	@ HOUR	21	ON DAY
MAXIMUM 24-HR AVERAGE:	1.22	ppb			ON DAY
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	706	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	98.1	%
STANDARD DEVIATION:	0.63		MONTHLY AVERAGE:	0.51	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - September 2017

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 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	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
2	0	0	0	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	2	0	2	1	24	
3	1	2	1	4	4	S	4	1	1	1	0	0	0	0	0	0	0	0	0	0	2	3	3	3	0	4	1	24	
4	2	2	2	2	2	S	2	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	2	1	24	
5	1	0	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	24	
6	2	2	2	2	2	S	2	2	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	2	1	24	
7	1	1	1	1	1	S	2	2	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	2	1	24	
8	2	2	1	1	1	S	1	0	1	2	2	1	0	0	0	0	0	0	1	1	2	1	1	2	0	2	1	24	
9	2	1	1	1	2	S	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	24	
10	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	24	
11	0	0	0	1	1	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
12	0	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	7	4	8	0	8	1	24	
13	7	5	5	6	3	S	1	2	0	0	P	P	P	P	0	0	0	0	0	2	1	1	1	1	0	7	2	20	
14	1	1	0	2	3	S	2	2	1	0	0	0	0	0	0	0	0	0	0	1	2	1	P	P	0	3	1	22	
15	P	P	P	P	P	P	P	S1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	1	0	16	
16	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
17	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
18	0	0	0	0	0	S	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	1	0	0	1	0	24	
19	1	1	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
21	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	0	0	0	3	7	7	4	5	0	7	1	24	
22	3	3	3	3	2	S	3	3	1	1	0	0	0	0	0	0	0	0	3	4	2	1	1	1	0	4	2	24	
23	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	1	4	4	2	2	1	1	0	4	1	24	
24	1	1	1	1	1	S	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	24	
25	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24	
26	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	24	
27	0	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	24	
28	1	0	0	0	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
29	0	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	24	
30	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
HOURLY MAX	7	5	5	6	4	NA	4	3	1	2	2	1	0	0	0	1	1	1	4	4	7	7	4	8					
HOURLY AVG	1	1	1	1	1	NA	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1					

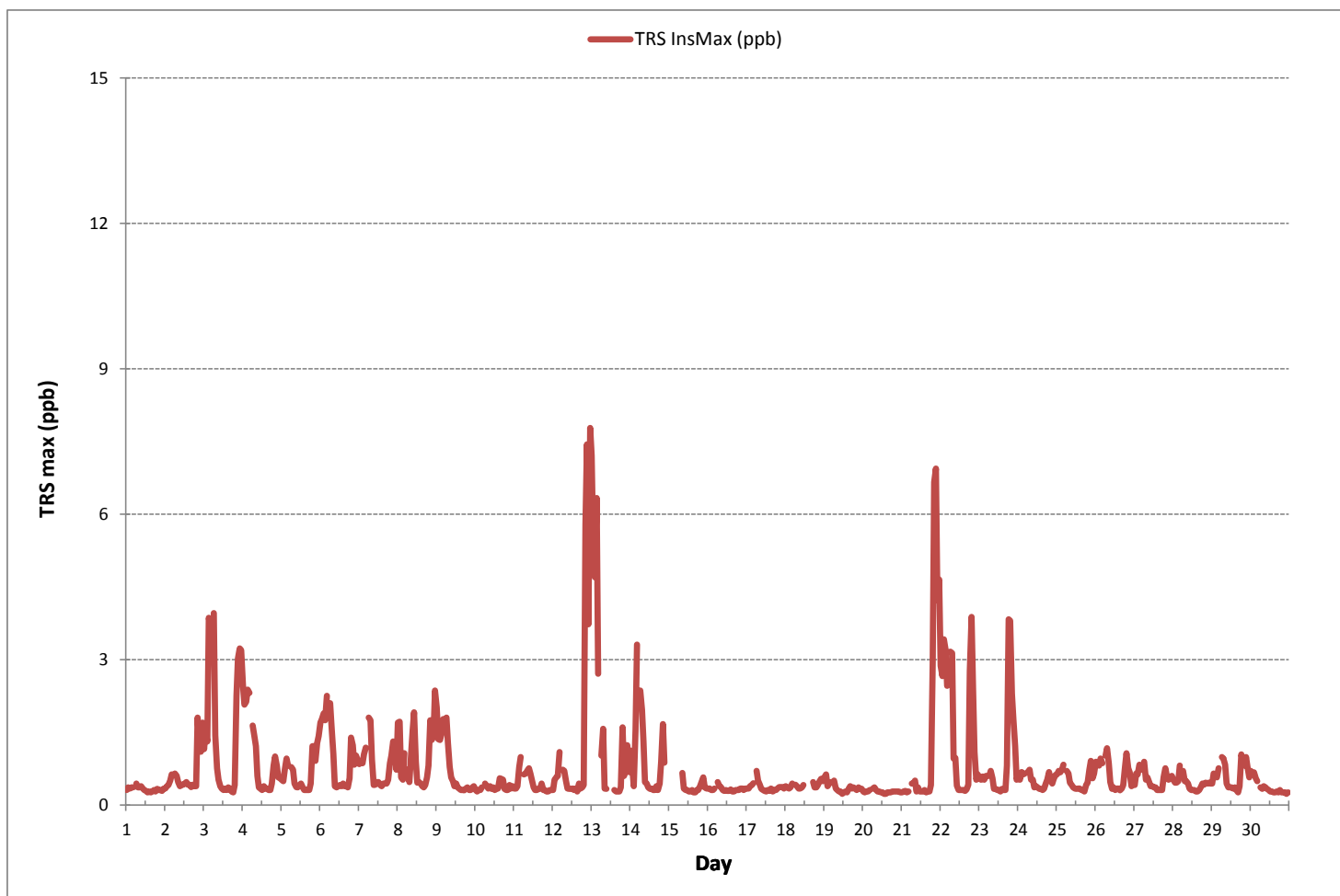
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671
MAXIMUM INSTANTANEOUS VALUE:	8 ppb @ HOUR 23 ON DAY 12
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	1
OPERATIONAL TIME:	706 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 17/09
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

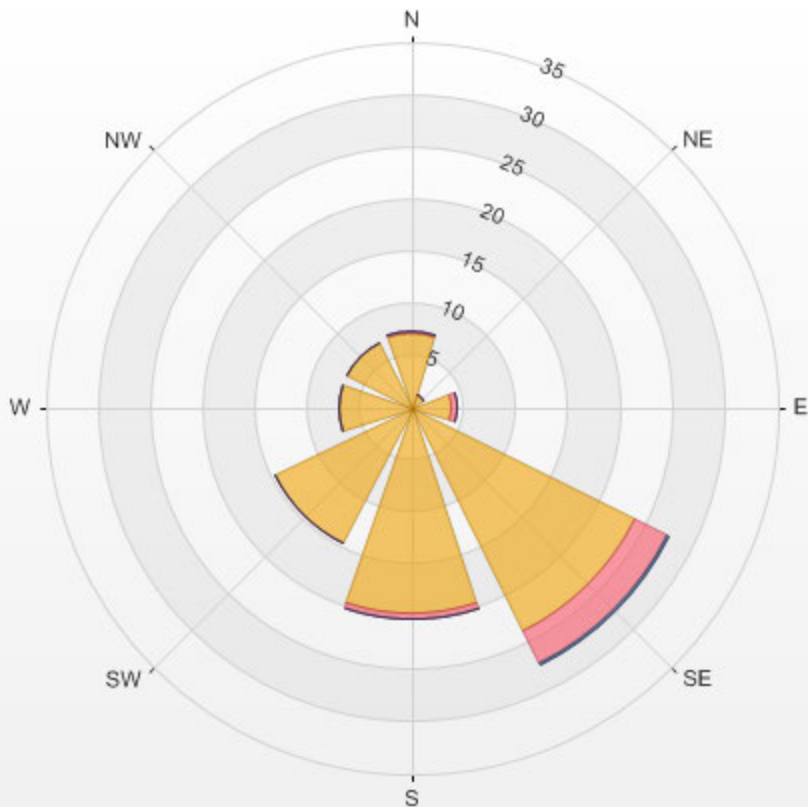
Calm: 10.57%

Calm Avg: 1.38 [ppb]

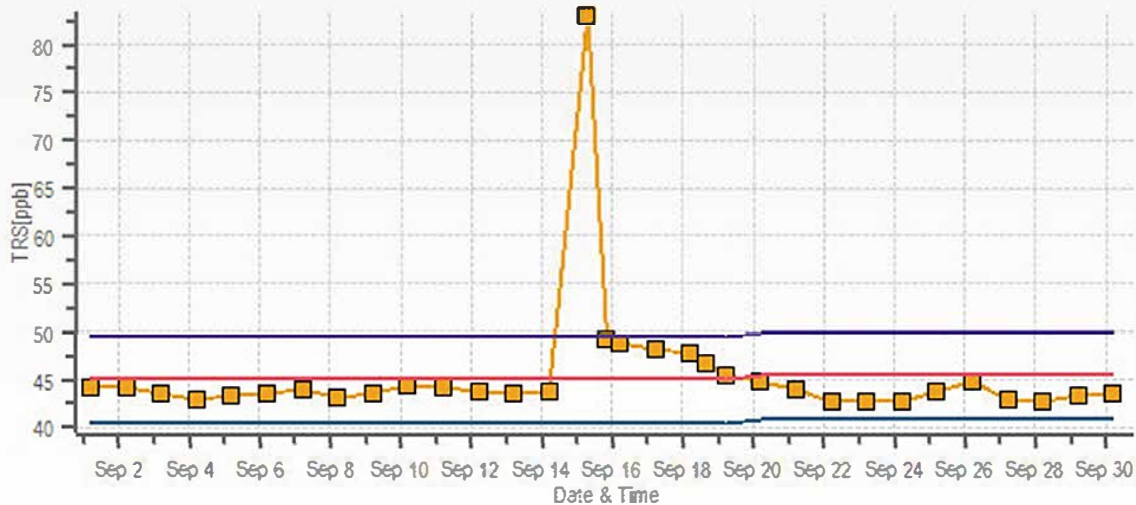
Direction	0-1	1-3	3-10	>10.0	Total
N	7.1	0.2	0.0	0.0	7.3
NE	1.3	0.0	0.0	0.0	1.3
E	3.9	0.6	0.0	0.0	4.5
SE	24.0	3.4	0.2	0.0	27.5
S	19.8	0.5	0.0	0.0	20.2
SW	14.6	0.0	0.0	0.0	14.6
W	7.0	0.0	0.0	0.0	7.0
NW	7.0	0.0	0.0	0.0	7.0
Summary	84.7	4.6	0.2	0.0	89.4

% Icon	Classes (ppb)	85	5	0	0
	0-1				
	1-3				
	3-10				
	>10.0				

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.57% Calm Poll Avg: 1.38[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 17/09 Type: Span



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

TOTAL HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

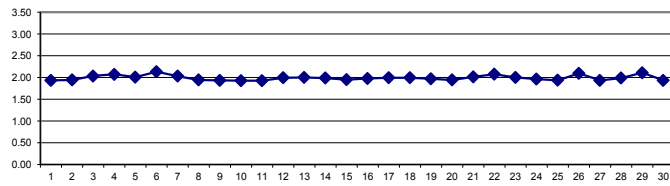
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.93	1.93	1.93	1.94	1.94	S	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.94	1.93	1.93	1.92	1.92	1.93	1.93	1.93	1.92	1.92	1.94	1.93	24
2	1.93	1.94	1.94	1.95	1.96	S	1.97	1.98	1.96	1.94	1.94	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.94	1.99	1.97	1.95	1.92	1.99	1.95	24
3	1.96	1.97	2.01	2.00	2.01	S	2.05	1.99	1.98	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.93	1.93	2.02	2.41	2.42	2.44	2.10	1.93	2.44	2.04	24
4	2.15	2.17	2.24	2.27	2.36	S	2.35	2.37	2.18	2.02	1.97	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.97	1.96	2.01	2.04	2.01	1.99	1.94	2.37	2.07	24
5	1.99	2.01	2.02	2.02	2.01	S	2.02	2.01	1.98	1.97	1.98	1.98	1.97	1.95	1.94	1.94	1.94	1.94	1.98	2.27	2.13	2.00	2.07	2.10	1.94	2.27	2.01	24
6	2.32	2.64	2.33	2.39	2.34	S	2.24	2.16	2.02	1.99	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	2.03	2.28	2.03	2.15	2.34	2.07	1.95	2.64	2.13	24
7	2.11	2.07	2.03	2.03	2.07	S	2.09	2.25	2.04	1.99	2.00	2.01	2.01	1.99	1.97	1.96	1.96	2.00	2.01	1.99	2.04	2.01	2.03	2.02	1.96	2.25	2.03	24
8	2.09	2.20	1.99	1.96	2.02	S	1.93	1.93	1.91	1.94	1.94	1.91	1.89	1.89	1.88	1.89	1.89	1.88	1.88	1.90	1.98	1.98	1.95	1.93	1.88	2.20	1.95	24
9	1.93	1.95	1.96	1.97	1.94	S	1.96	1.97	1.95	1.95	1.93	1.92	1.94	1.93	1.92	1.92	1.91	1.91	1.92	1.92	1.93	1.92	1.91	1.91	1.91	1.97	1.93	24
10	1.91	1.92	1.92	1.92	1.92	S	1.93	1.92	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.92	1.93	1.93	1.93	1.92	1.92	1.91	1.94	1.93	24
11	1.92	1.92	1.94	1.95	1.97	S	1.94	1.96	1.96	1.95	1.93	1.93	1.91	1.90	1.90	1.90	1.90	1.91	1.90	1.91	1.91	1.92	1.94	1.92	1.90	1.97	1.93	24
12	1.95	1.96	1.96	1.96	1.98	S	2.07	2.04	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.94	2.01	2.24	2.21	2.14	2.21	1.92	1.92	2.24	2.00	24
13	2.05	2.16	2.05	2.09	2.06	S	2.03	2.01	1.95	1.95	P	P	P	R	1.93	1.94	1.93	1.93	1.95	2.01	1.98	2.01	2.01	1.95	1.93	2.16	2.00	20
14	1.96	2.03	1.95	2.02	1.96	S	2.03	2.04	2.02	1.97	1.95	1.94	1.95	1.95	1.95	1.94	1.95	1.95	1.95	2.07	2.11	2.01	P	P	1.94	2.11	1.99	22
15	P	P	P	P	P	P	P	S	S1	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.94	1.95	1.95	1.97	1.97	1.97	1.97	1.94	1.97	1.95	16
16	1.97	1.97	1.97	1.98	1.99	S	2.00	1.99	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.99	1.99	1.99	2.00	2.01	2.00	1.96	2.01	1.98	24
17	2.03	2.04	2.01	2.01	2.03	S	2.05	2.05	2.03	2.03	1.99	1.99	1.97	1.95	1.93	1.94	1.95	1.97	1.97	1.99	1.99	1.99	1.99	1.99	1.93	2.05	2.00	24
18	1.98	1.96	1.97	1.98	1.99	S	1.98	1.99	2.00	C	C	C	C	C	1.99	1.99	1.99	1.99	2.00	1.99	2.01	2.02	2.03	2.09	1.96	2.09	2.00	24
19	2.14	2.00	1.95	1.96	1.97	S	2.01	2.00	1.99	1.98	1.97	1.96	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	2.14	1.97	24
20	1.94	1.95	1.95	1.95	1.95	S	1.94	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	1.96	1.96	1.95	1.93	1.96	1.95	24
21	1.95	1.95	1.95	1.95	1.96	S	1.97	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.04	2.25	2.18	2.26	2.14	2.17	1.95	2.26	2.01	24
22	2.13	2.03	2.27	2.15	2.21	S	2.56	2.33	2.27	2.15	2.06	1.96	1.95	1.95	1.96	1.95	1.95	1.95	1.99	1.96	2.00	2.00	1.99	2.00	1.95	2.56	2.08	24
23	2.01	2.01	2.01	2.02	2.02	S	2.01	2.02	2.01	1.99	1.98	1.97	1.95	1.96	1.96	1.97	1.97	1.98	1.97	1.99	2.00	2.04	2.08	2.05	1.95	2.08	2.00	24
24	2.04	2.03	2.02	2.01	2.01	S	2.01	2.01	1.99	1.99	1.97	1.96	1.95	1.94	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.91	1.92	1.91	1.91	2.04	1.96	24
25	1.91	1.92	1.91	1.92	1.92	S	1.95	2.01	1.95	1.92	1.93	1.93	1.91	1.90	1.90	1.90	1.90	1.90	1.95	1.95	1.93	1.93	2.01	2.11	1.90	2.11	1.94	24
26	2.37	2.31	2.57	2.50	2.19	S	2.04	2.00	2.04	2.02	2.01	1.94	1.98	2.03	1.93	1.92	1.91	2.02	1.99	2.20	2.21	2.11	1.93	1.95	1.91	2.57	2.09	24
27	1.93	1.94	1.96	1.94	1.95	S	1.94	1.95	1.94	1.94	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.93	1.93	1.94	1.96	1.96	1.96	1.95	1.91	1.96	1.93	24
28	1.95	1.98	1.97	1.97	1.98	S	2.01	2.00	1.97	1.95	1.93	1.92	1.91	1.90	1.89	1.89	1.90	1.91	2.03	2.06	1.95	2.26	2.28	2.10	1.89	2.28	1.99	24
29	2.06	2.27	2.02	2.07	2.15	S	2.09	2.11	2.12	1.97	1.96	1.98	1.99	1.98	1.92	1.90	1.90	1.91	2.37	2.12	2.64	2.54	2.36	2.09	1.90	2.64	2.11	24
30	2.06	1.99	1.98	1.94	1.95	S	1.95	1.91	1.90	1.91	1.91	1.91	1.94	1.97	1.95	1.91	1.90	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.90	2.06	1.93	24
HOURLY MAX	2.37	2.64	2.57	2.50	2.36	NA	2.56	2.37	2.27	2.15	2.06	2.01	2.01	2.03	1.99	1.99	1.99	2.02	2.37	2.28	2.64	2.54	2.44	2.21				
HOURLY AVG	2.02	2.04	2.03	2.03	2.03	NA	2.04	2.03	2.00	1.97	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.94	1.97	2.01	2.04	2.05	2.04	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

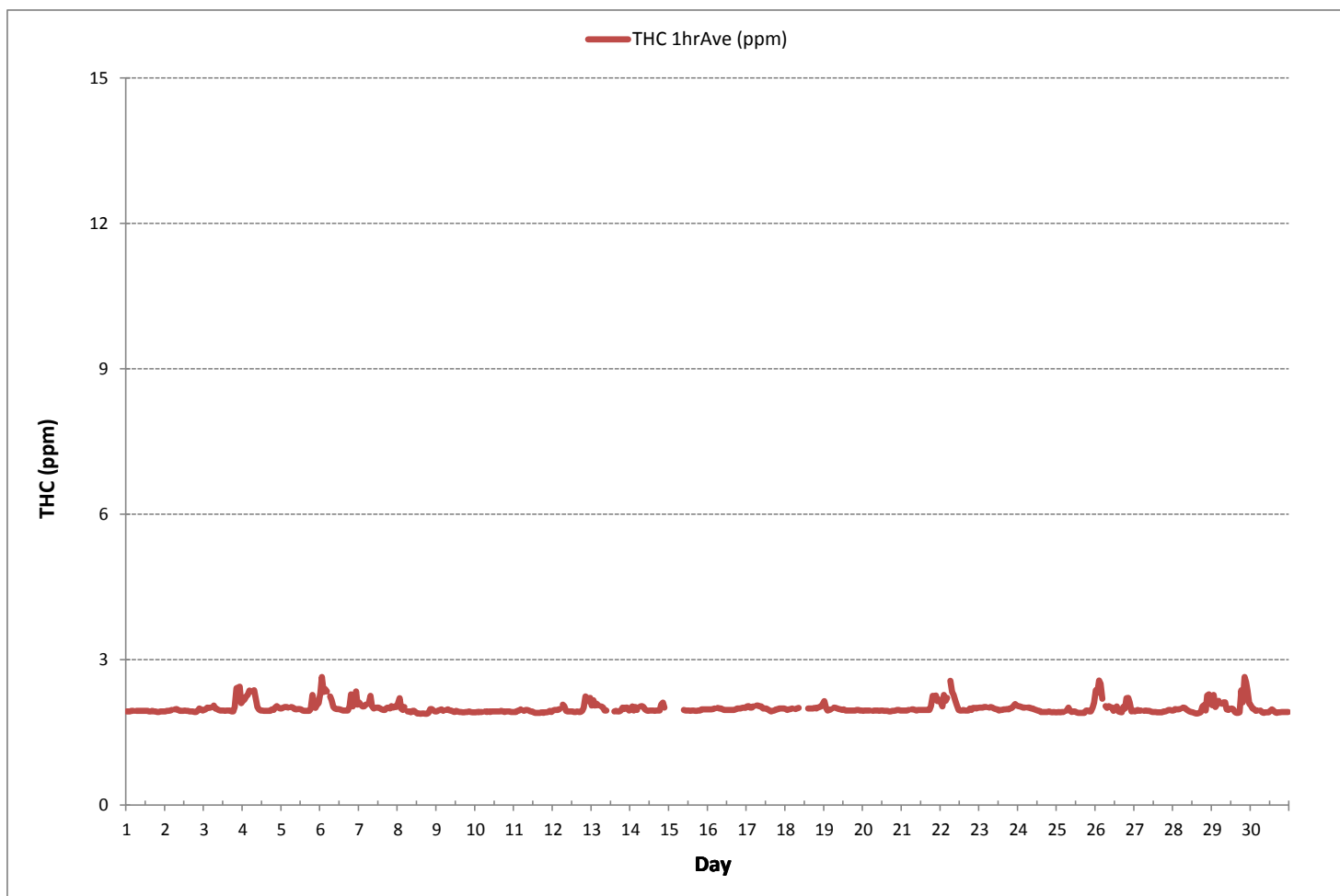
24 HR AVERAGES September 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671				
MINIMUM 1-HR AVERAGE:	1.88	ppm	@ HOUR	14	ON DAY 8
MAXIMUM 1-HR AVERAGE:	2.64	ppm	@ HOUR	1	ON DAY 6
MAXIMUM 24-HR AVERAGE:	2.13	ppm			ON DAY 6
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	706	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	98.1	%
STANDARD DEVIATION:	0.11		MONTHLY AVERAGE:	1.99	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

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	1.94	1.95	1.93	1.96	1.96	S	1.96	1.94	1.95	1.95	1.96	1.97	1.97	1.97	2.00	1.96	2.02	1.96	1.95	1.94	1.92	1.95	1.93	1.95	1.92	2.02	1.96	24
2	1.96	2.02	1.98	2.05	2.03	S	2.00	1.99	2.03	1.96	1.96	1.96	1.94	1.96	1.93	1.96	1.94	2.04	1.93	1.94	1.99	2.29	2.10	1.97	1.93	2.29	2.00	24
3	2.04	2.10	2.38	2.15	2.28	S	2.25	2.03	2.08	2.00	1.99	1.97	2.02	1.97	2.01	2.04	2.04	1.93	1.96	2.57	3.43	3.82	3.66	2.77	1.93	3.82	2.33	24
4	2.57	2.69	2.77	2.79	2.66	S	2.37	2.48	2.27	2.10	1.99	1.97	1.96	1.98	1.97	1.95	1.96	1.94	2.06	2.02	2.25	2.30	2.08	2.02	1.94	2.79	2.22	24
5	2.03	2.05	2.14	2.10	2.06	S	2.03	2.05	1.99	1.99	1.99	1.98	1.99	1.95	1.99	1.95	1.96	2.02	2.16	3.37	2.73	2.10	2.33	2.14	1.95	3.37	2.13	24
6	3.28	3.61	2.96	2.68	3.21	S	2.43	2.27	2.24	2.00	1.99	1.98	1.99	1.96	1.99	1.96	1.97	2.02	2.12	3.56	2.26	2.91	3.22	2.19	1.96	3.61	2.47	24
7	2.34	2.12	2.09	2.09	2.14	S	2.22	3.59	2.20	1.99	2.01	2.01	2.03	2.01	2.01	1.99	1.96	2.12	2.17	2.15	2.29	2.11	2.27	2.07	1.96	3.59	2.17	24
8	2.44	3.17	2.03	1.97	2.20	S	2.03	2.05	1.97	1.96	2.04	1.92	1.89	1.91	1.89	1.89	1.90	1.91	1.88	2.04	2.55	2.23	2.05	2.02	1.88	3.17	2.08	24
9	1.95	2.03	2.04	2.11	1.96	S	1.97	2.01	1.96	2.03	2.08	1.94	1.94	1.95	1.93	1.94	1.93	1.91	1.94	1.93	1.95	1.94	1.92	1.92	1.91	2.11	1.97	24
10	1.92	1.93	1.94	1.93	1.92	S	1.95	1.94	1.96	1.94	2.00	1.96	1.94	1.96	1.96	1.95	1.96	1.96	1.94	1.93	1.94	1.93	1.94	1.97	1.92	2.00	1.95	24
11	2.02	1.94	2.05	1.97	1.99	S	1.95	2.01	2.02	1.97	1.95	1.93	1.93	1.90	1.93	1.90	1.93	1.93	1.92	1.93	1.91	2.01	2.02	1.98	1.90	2.05	1.96	24
12	2.09	2.20	2.20	2.06	2.16	S	2.67	2.36	2.03	1.94	1.95	1.93	1.95	1.92	1.97	1.96	1.94	1.94	2.22	2.71	3.08	2.61	4.30	3.05	1.92	4.30	2.31	24
13	2.48	2.61	2.20	2.42	2.25	S	2.20	2.47	1.96	1.96	P	P	P	P	1.97	1.95	1.95	1.93	2.11	2.31	2.13	2.40	2.37	2.03	1.93	2.61	2.19	20
14	2.02	3.00	2.03	2.60	2.28	S	2.14	2.17	2.12	1.99	1.96	1.95	1.97	1.97	1.97	1.95	1.99	1.98	2.06	2.26	2.52	2.41	P	P	1.95	3.00	2.16	22
15	P	P	P	P	P	P	P	S	S1	1.98	1.97	1.95	1.97	1.94	1.96	1.97	1.95	1.96	1.95	1.96	1.97	1.98	1.97	1.99	1.94	1.99	1.96	16
16	1.98	1.98	1.97	1.97	2.00	S	2.02	2.00	2.02	1.97	1.98	2.01	2.00	1.96	1.95	1.97	1.97	1.97	2.02	2.00	1.99	2.01	2.02	2.01	1.95	2.02	1.99	24
17	2.04	2.07	2.03	2.02	2.04	S	2.09	X	2.05	2.06	2.02	2.04	2.01	2.15	1.95	1.93	1.97	1.96	1.99	1.98	2.01	1.99	1.99	1.99	1.93	2.15	2.02	23
18	1.99	1.96	1.97	1.98	1.99	S	1.99	2.00	2.00	C	C	C	C	C	2.01	2.02	2.02	1.99	2.02	1.99	2.04	2.09	2.07	2.31	1.96	2.31	2.02	24
19	2.49	2.28	1.95	1.96	1.99	S	2.19	2.18	1.99	1.99	1.99	1.99	1.97	1.96	1.96	1.94	1.97	1.95	1.97	1.95	1.98	1.97	1.95	1.95	1.94	2.49	2.02	24
20	1.94	2.05	1.94	1.94	1.94	S	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.96	1.96	2.21	2.15	1.97	1.93	2.21	1.97	24
21	1.95	1.96	1.94	1.97	1.96	S	1.97	1.97	1.96	1.95	1.97	1.96	1.96	1.96	1.96	1.97	1.99	1.97	2.53	2.96	3.26	2.98	2.57	2.84	1.94	3.26	2.20	24
22	2.70	2.05	2.84	2.28	2.29	S	3.26	2.50	2.29	2.23	2.18	1.97	1.95	1.97	1.98	1.97	1.95	1.96	2.28	2.09	2.02	2.01	1.99	2.02	1.95	3.26	2.21	24
23	2.04	2.03	2.02	2.03	2.05	S	2.03	2.04	2.01	1.99	1.99	1.99	1.96	1.98	1.96	1.98	1.97	2.02	2.02	2.02	2.04	2.08	2.09	2.10	1.96	2.10	2.02	24
24	2.08	2.05	2.05	2.05	2.07	S	2.02	2.03	1.99	1.99	2.01	1.96	1.94	1.97	1.93	1.92	1.94	1.91	1.94	1.94	1.94	1.91	1.95	1.93	1.91	2.08	1.98	24
25	1.90	1.99	1.91	1.92	1.93	S	2.36	2.52	2.44	1.94	1.96	1.94	1.93	1.91	1.92	1.90	1.93	1.90	4.14	2.44	2.17	1.99	2.38	3.29	1.90	4.14	2.20	24
26	3.97	4.37	5.77	6.11	5.25	S	2.81	2.49	2.66	2.54	2.84	2.14	2.23	2.63	2.03	1.96	1.93	3.85	3.46	6.76	3.64	3.77	2.22	2.79	1.93	6.76	3.40	24
27	2.07	2.06	2.59	1.95	2.04	S	1.96	1.95	1.94	1.94	1.95	1.93	1.94	1.93	1.91	1.94	1.92	1.93	2.02	1.96	1.94	1.96	1.98	1.99	1.91	2.59	1.99	24
28	1.98	1.99	2.00	1.97	1.99	S	2.04	2.02	1.98	1.96	1.93	1.93	1.91	1.92	1.89	1.92	1.90	1.97	2.43	2.67	2.12	3.36	2.89	2.26	1.89	3.36	2.13	24
29	2.82	2.93	2.13	2.41	2.58	S	2.13	2.66	3.25	2.00	1.97	2.25	2.12	2.10	2.01	1.93	1.94	1.97	9.79	4.55	9.62	5.46	5.56	3.67	1.93	9.79	3.38	24
30	2.70	2.17	2.06	2.01	2.24	S	2.11	1.92	1.90	1.93	1.93	1.94	2.17	2.28	2.20	1.92	1.91	1.93	1.93	1.93	1.94	1.92	1.95	1.95	1.90	2.70	2.04	24
HOURLY MAX	3.97	4.37	5.77	6.11	5.25	NA	3.26	3.59	3.25	2.54	2.84	2.25	2.23	2.63	2.20	2.04	2.04	3.85	9.79	6.76	9.62	5.46	5.56	3.67				
HOURLY AVG	2.27	2.32	2.27	2.26	2.26	NA	2.18	2.20	2.11	2.01	2.02	1.98	1.98	2.00	1.97	1.95	1.95	2.03	2.43	2.46	2.52	2.42	2.41	2.25				

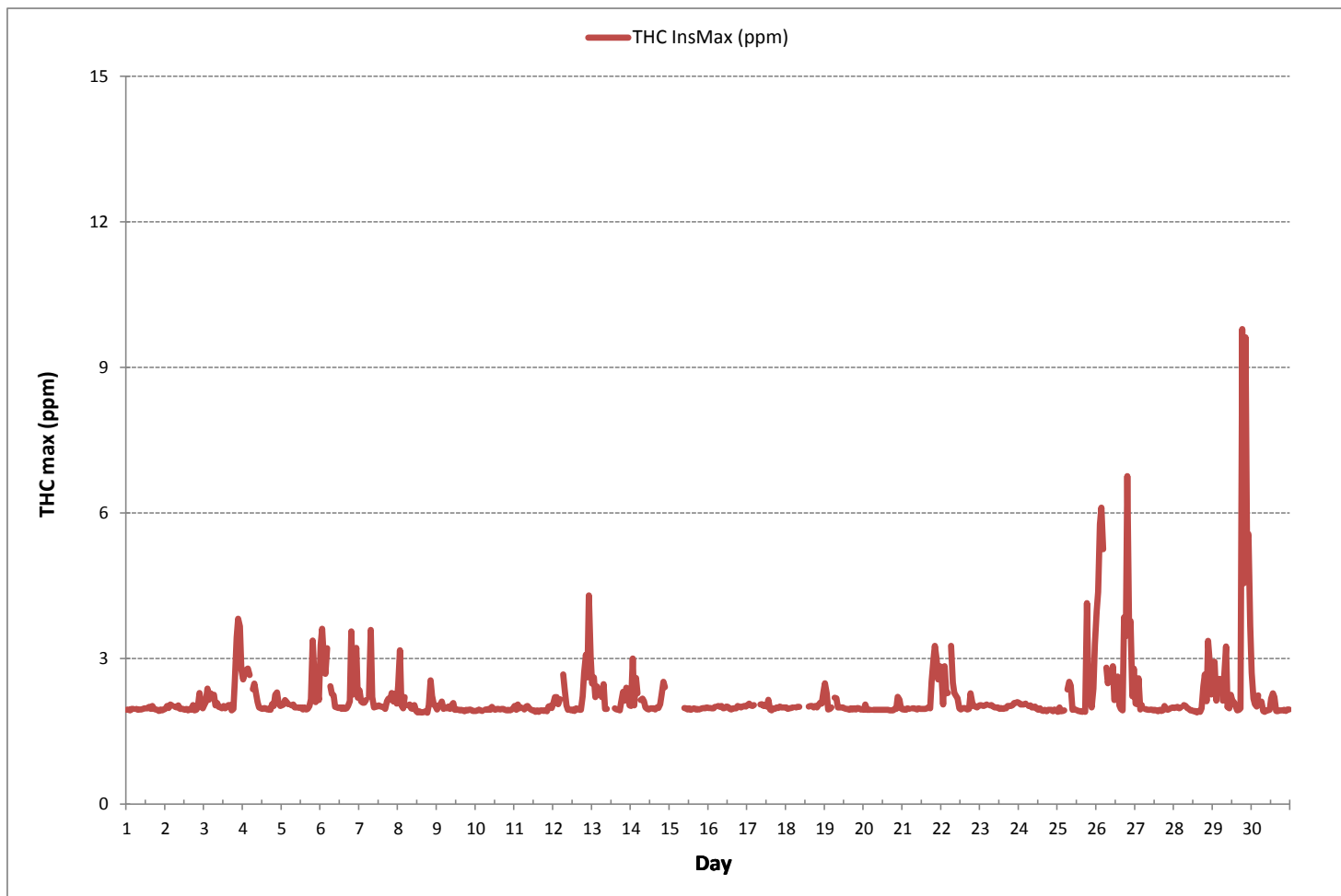
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	670				
MAXIMUM INSTANTANEOUS VALUE:	9.79	ppm	@ HOUR	18	ON DAY 29
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	705	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.66				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



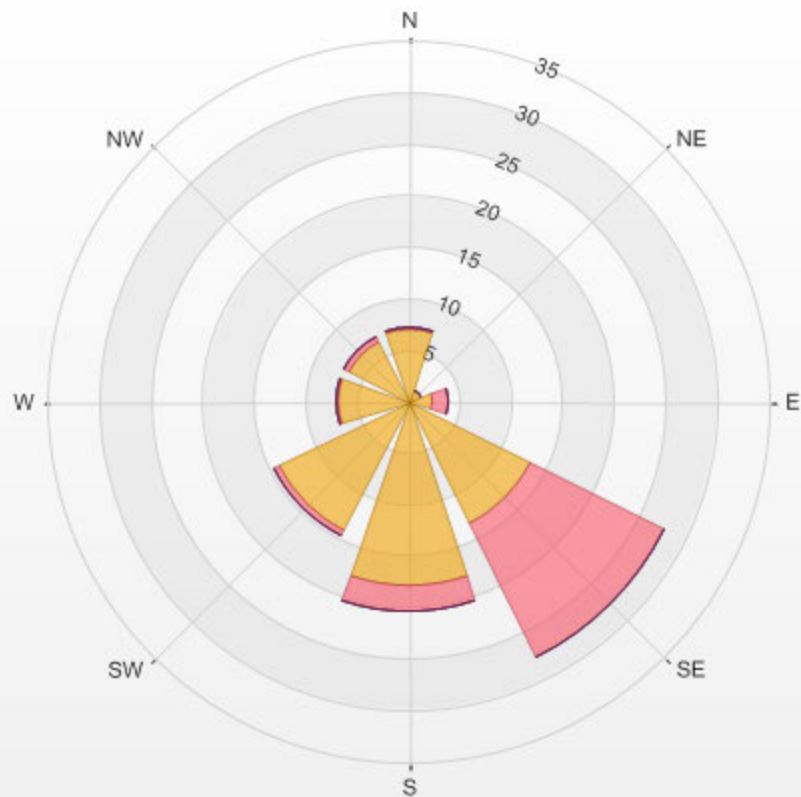
Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 17/09
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.60%

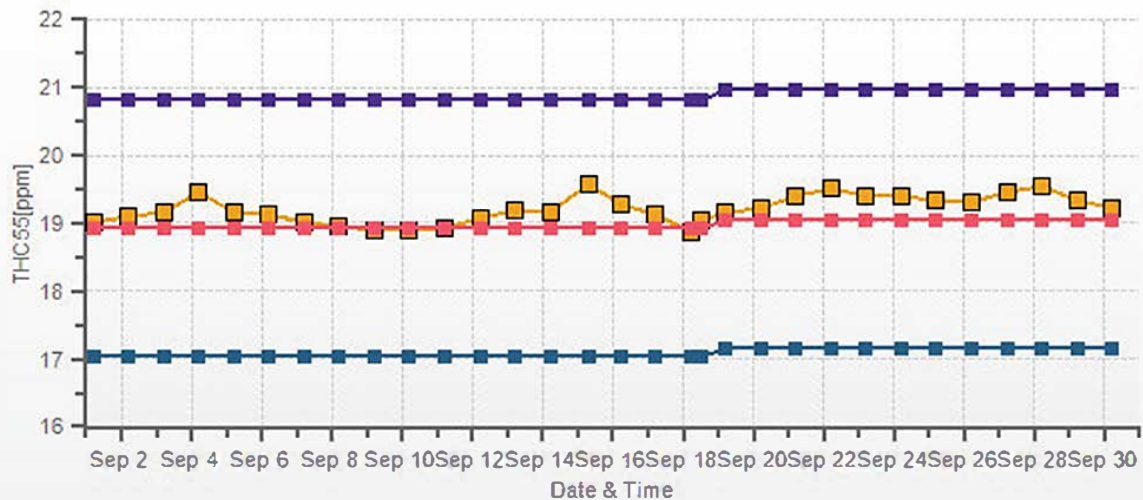
Calm Avg: 2.09 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	7.2	0.2	0.0	0.0	0.0	7.3
NE	1.3	0.0	0.0	0.0	0.0	1.3
E	2.4	1.5	0.0	0.0	0.0	3.9
SE	13.1	14.6	0.0	0.0	0.0	27.8
S	17.8	2.7	0.0	0.0	0.0	20.5
SW	14.0	0.6	0.0	0.0	0.0	14.6
W	6.9	0.2	0.0	0.0	0.0	7.0
NW	6.4	0.6	0.0	0.0	0.0	7.0
Summary	69.1	20.3	0.0	0.0	0.0	89.4

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.60% Calm Poll Avg: 2.09[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 17/09 Type: Span



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

METHANE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

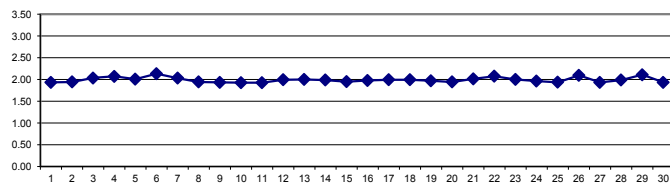
METHANE Hourly Averages (CH₄ ppm)

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	1.93	1.93	1.93	1.94	1.94	S	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.94	1.93	1.93	1.93	1.92	1.92	1.93	1.93	1.93	1.92	1.94	1.93	24
2	1.93	1.94	1.94	1.95	1.96	S	1.97	1.98	1.96	1.94	1.94	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.94	1.99	1.97	1.95	1.92	1.99	1.95	24
3	1.96	1.97	2.01	2.00	2.01	S	2.05	1.99	1.98	1.96	1.95	1.94	1.95	1.94	1.95	1.95	1.95	1.93	1.93	2.02	2.41	2.42	2.44	2.10	1.93	2.44	2.04	24
4	2.15	2.17	2.24	2.27	2.36	S	2.35	2.37	2.18	2.02	1.97	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.97	1.96	2.01	2.04	2.01	1.99	1.94	2.37	2.07	24
5	1.99	2.01	2.02	2.02	2.01	S	2.02	2.01	1.98	1.97	1.98	1.98	1.97	1.95	1.94	1.94	1.94	1.94	1.98	2.27	2.13	2.00	2.07	2.10	1.94	2.27	2.01	24
6	2.32	2.64	2.33	2.39	2.34	S	2.24	2.16	2.02	1.99	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	2.03	2.28	2.03	2.15	2.34	2.07	1.95	2.64	2.13	24
7	2.11	2.07	2.03	2.03	2.07	S	2.09	2.25	2.04	1.99	2.00	2.01	2.01	1.99	1.97	1.96	1.96	2.00	2.01	1.99	2.04	2.01	2.03	2.02	1.96	2.25	2.03	24
8	2.09	2.20	1.99	1.96	2.02	S	1.93	1.93	1.91	1.94	1.94	1.91	1.89	1.89	1.88	1.89	1.88	1.88	1.90	1.98	1.98	1.98	1.95	1.93	1.88	2.20	1.95	24
9	1.93	1.94	1.96	1.97	1.94	S	1.96	1.97	1.95	1.95	1.93	1.92	1.94	1.93	1.92	1.92	1.91	1.91	1.92	1.92	1.93	1.92	1.91	1.91	1.91	1.97	1.93	24
10	1.91	1.92	1.92	1.92	1.92	S	1.93	1.92	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.92	1.93	1.93	1.93	1.92	1.92	1.91	1.94	1.93	24
11	1.92	1.92	1.94	1.95	1.97	S	1.94	1.96	1.96	1.95	1.93	1.93	1.91	1.90	1.90	1.90	1.90	1.91	1.90	1.91	1.91	1.92	1.94	1.92	1.90	1.97	1.93	24
12	1.95	1.96	1.96	1.96	1.98	S	2.07	2.04	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.92	1.92	1.94	2.01	2.24	2.21	2.14	2.21	1.92	2.24	2.00	24
13	2.05	2.16	2.05	2.09	2.06	S	2.03	2.01	1.95	1.95	P	P	P	R	1.93	1.94	1.93	1.93	1.95	2.01	1.98	2.01	2.01	1.95	1.93	2.16	2.00	20
14	1.96	2.03	1.95	2.02	1.96	S	2.03	2.04	2.02	1.97	1.95	1.94	1.95	1.95	1.95	1.94	1.95	1.95	1.95	2.07	2.11	2.01	P	P	1.94	2.11	1.99	22
15	P	P	P	P	P	P	P	S	S1	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.94	1.95	1.95	1.97	1.97	1.97	1.97	1.94	1.97	1.95	16
16	1.97	1.97	1.97	1.98	1.99	S	2.00	1.99	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.99	1.99	1.99	2.00	2.01	2.00	1.96	2.01	1.98	24
17	2.03	2.04	2.01	2.01	2.03	S	2.05	2.05	2.03	2.03	1.99	1.99	1.99	1.97	1.95	1.93	1.94	1.95	1.97	1.97	1.99	1.99	1.99	1.99	1.93	2.05	2.00	24
18	1.97	1.96	1.97	1.98	1.99	S	1.98	1.99	2.00	C	C	C	C	C	1.99	1.99	1.99	1.99	1.99	1.99	2.01	2.02	2.03	2.09	1.96	2.09	2.00	24
19	2.14	2.00	1.95	1.96	1.97	S	2.01	2.00	1.99	1.98	1.97	1.96	1.97	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.95	2.14	1.97	24
20	1.94	1.95	1.95	1.95	1.95	S	1.94	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	1.96	1.96	1.95	1.93	1.96	1.95	24
21	1.95	1.95	1.95	1.95	1.96	S	1.97	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	2.04	2.25	2.18	2.26	2.14	2.17	1.95	2.26	2.01	24
22	2.13	2.03	2.27	2.15	2.21	S	2.56	2.33	2.27	2.15	2.06	1.96	1.95	1.95	1.96	1.95	1.95	1.95	1.99	1.96	2.00	2.00	1.99	2.00	1.95	2.56	2.08	24
23	2.01	2.01	2.01	2.02	2.02	S	2.01	2.02	2.01	1.99	1.98	1.97	1.95	1.96	1.96	1.97	1.97	1.98	1.97	1.99	2.00	2.04	2.08	2.05	1.95	2.08	2.00	24
24	2.04	2.03	2.02	2.01	2.01	S	2.01	2.01	1.99	1.99	1.97	1.96	1.95	1.94	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.91	1.92	1.91	1.91	2.04	1.96	24
25	1.91	1.92	1.91	1.92	1.92	S	1.95	2.01	1.95	1.92	1.93	1.93	1.91	1.90	1.90	1.90	1.90	1.90	1.95	1.95	1.93	1.93	2.01	2.11	1.90	2.11	1.94	24
26	2.37	2.31	2.57	2.50	2.19	S	2.04	2.00	2.04	2.02	2.01	1.94	1.98	2.03	1.93	1.92	1.91	2.02	1.99	2.20	2.21	2.11	1.93	1.95	1.91	2.57	2.09	24
27	1.93	1.94	1.96	1.94	1.95	S	1.94	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.93	1.93	1.94	1.96	1.96	1.95	1.91	1.96	1.93	24
28	1.95	1.98	1.97	1.97	1.98	S	2.01	2.00	1.97	1.95	1.93	1.92	1.91	1.90	1.89	1.89	1.90	1.91	2.03	2.06	1.95	2.26	2.28	2.10	1.89	2.28	1.99	24
29	2.06	2.27	2.02	2.07	2.15	S	2.09	2.11	2.12	1.97	1.96	1.98	1.99	1.98	1.92	1.90	1.90	1.91	2.37	2.12	2.64	2.54	2.36	2.09	1.90	2.64	2.11	24
30	2.06	1.99	1.98	1.94	1.95	S	1.95	1.91	1.90	1.91	1.91	1.91	1.94	1.97	1.95	1.90	1.90	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.90	2.06	1.93	24
HOURLY MAX	2.37	2.64	2.57	2.50	2.36	NA	2.56	2.37	2.27	2.15	2.06	2.01	2.01	2.03	1.99	1.99	1.99	2.02	2.37	2.28	2.64	2.54	2.44	2.21				
HOURLY AVG	2.02	2.04	2.03	2.03	2.03	NA	2.04	2.03	2.00	1.97	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.94	1.97	2.01	2.04	2.05	2.04	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

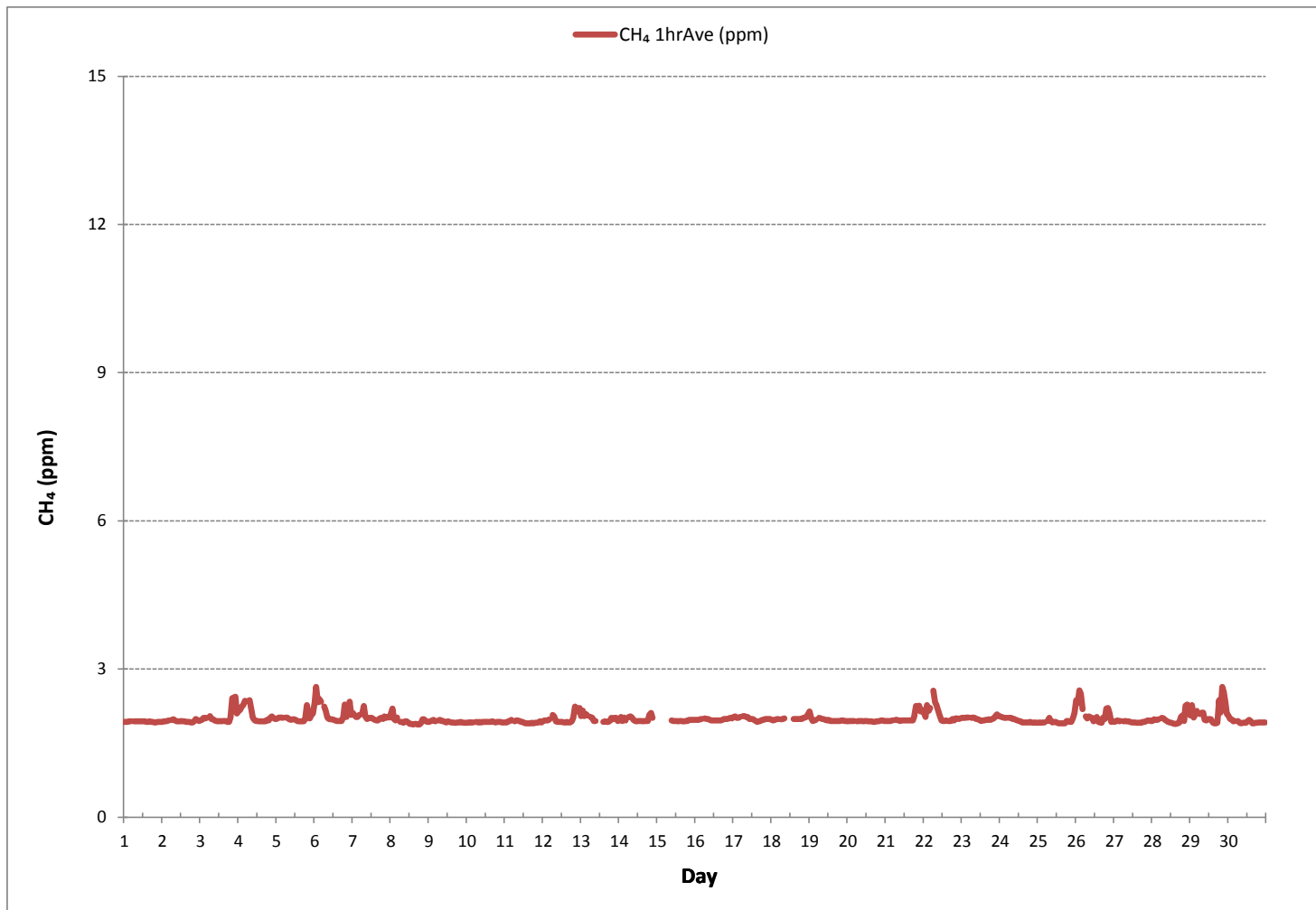
24 HR AVERAGES September 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671				
MINIMUM 1-HR AVERAGE:	1.88	ppm	@ HOUR	14	ON DAY
MAXIMUM 1-HR AVERAGE:	2.64	ppm	@ HOUR	1	ON DAY
MAXIMUM 24-HR AVERAGE:	2.13	ppm			ON DAY
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	706	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	98.1	%
STANDARD DEVIATION:	0.11		MONTHLY AVERAGE:	1.99	ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - September 2017

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	1.95	1.96	1.94	1.97	1.97	S	1.97	1.95	1.97	1.96	1.97	1.99	1.98	1.99	2.02	1.98	2.02	1.98	1.96	1.95	1.93	1.96	1.94	1.96	1.93	2.02	1.97	24	
2	1.97	2.02	1.99	2.06	2.04	S	2.01	2.00	2.04	1.97	1.97	1.97	1.95	1.98	1.95	1.97	1.95	2.04	1.94	1.95	2.01	2.30	2.11	1.98	1.94	2.30	2.01	24	
3	2.04	2.10	2.39	2.16	2.29	S	2.26	2.04	2.09	2.02	2.01	1.98	2.03	1.98	2.02	2.05	2.05	1.94	1.97	2.58	3.45	3.84	3.68	2.79	1.94	3.84	2.34	24	
4	2.58	2.71	2.79	2.81	2.68	S	2.38	2.50	2.29	2.11	2.01	1.98	1.97	1.98	1.98	1.96	1.97	1.95	2.07	2.02	2.26	2.31	2.09	2.03	1.95	2.81	2.24	24	
5	2.03	2.06	2.16	2.11	2.07	S	2.04	2.05	2.00	2.01	2.01	1.98	2.00	1.97	2.01	1.96	1.97	2.03	2.17	3.39	2.75	2.10	2.34	2.15	1.96	3.39	2.15	24	
6	3.31	3.63	2.98	2.70	3.23	S	2.45	2.29	2.26	2.01	2.01	1.99	2.01	1.97	1.99	1.98	1.98	2.02	2.14	3.58	2.19	2.92	3.23	2.20	1.97	3.63	2.48	24	
7	2.36	2.13	2.10	2.10	2.15	S	2.24	3.60	2.21	2.00	2.01	2.02	2.04	2.01	1.98	1.99	1.97	2.12	2.19	2.16	2.31	2.12	2.29	2.08	1.97	3.60	2.18	24	
8	2.45	3.19	2.03	1.98	2.21	S	2.04	2.06	1.98	1.98	2.04	1.93	1.90	1.93	1.90	1.90	1.91	1.92	1.89	2.05	2.57	2.25	2.06	2.03	1.89	3.19	2.10	24	
9	1.96	2.04	2.04	2.13	1.97	S	1.98	2.01	1.97	2.03	2.09	1.95	1.95	1.96	1.94	1.95	1.94	1.92	1.95	1.94	1.96	1.95	1.94	1.93	1.92	2.13	1.98	24	
10	1.94	1.94	1.95	1.94	1.93	S	1.96	1.95	1.97	1.95	2.01	1.97	1.95	1.97	1.97	1.96	1.97	1.97	1.96	1.94	1.96	1.94	1.95	1.95	1.93	2.01	1.96	24	
11	2.03	1.95	2.05	1.99	2.01	S	1.96	2.01	2.03	1.98	1.97	1.94	1.94	1.91	1.95	1.91	1.94	1.94	1.94	1.94	1.93	2.02	2.03	1.99	1.91	2.05	1.97	24	
12	2.10	2.21	2.21	2.07	2.17	S	2.68	2.37	2.04	1.95	1.96	1.95	1.96	1.93	1.98	1.97	1.96	1.95	2.23	2.72	3.11	2.62	4.32	3.07	1.93	4.32	2.33	24	
13	2.50	2.62	2.21	2.44	2.27	S	2.21	2.48	1.98	1.97	P	P	P	P	P	1.98	1.96	1.96	1.94	2.11	2.33	2.15	2.41	2.38	2.04	1.94	2.62	2.21	20
14	2.03	3.02	2.04	2.61	2.30	S	2.15	2.19	2.15	2.01	1.97	1.96	1.98	1.98	1.98	1.97	2.01	2.00	2.06	2.28	2.53	2.42	P	P	1.96	3.02	2.17	22	
15	P	P	P	P	P	P	P	S	S1	1.98	1.98	1.97	1.98	1.95	1.97	1.98	1.96	1.97	1.96	1.98	1.98	2.00	1.98	2.00	1.95	2.00	1.98	16	
16	2.00	2.00	1.98	1.99	2.02	S	2.03	2.01	2.03	1.98	2.00	2.03	2.01	1.97	1.97	1.99	1.98	1.98	2.02	2.02	2.00	2.02	2.03	2.02	1.97	2.03	2.00	24	
17	2.05	2.08	2.03	2.03	2.05	S	2.10	X	2.07	2.06	2.03	2.05	2.02	2.01	1.96	1.95	1.98	1.97	2.00	1.99	2.02	2.00	2.01	2.00	1.95	2.10	2.02	23	
18	2.00	1.97	1.99	1.99	2.01	S	2.00	2.01	2.01	C	C	C	C	C	2.02	2.03	2.03	2.01	2.03	2.01	2.05	2.11	2.08	2.33	1.97	2.33	2.04	24	
19	2.50	2.30	1.97	1.97	2.01	S	2.20	2.20	2.00	2.00	2.00	2.00	1.98	1.97	1.97	1.96	1.99	1.96	1.99	1.96	1.99	1.98	1.97	1.97	1.96	2.50	2.04	24	
20	1.95	2.06	1.96	1.95	1.96	S	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.95	1.97	1.97	2.22	2.16	1.99	1.94	2.22	1.98	24	
21	1.96	1.98	1.96	1.98	1.97	S	1.98	1.98	1.97	1.96	1.99	1.97	1.97	1.97	1.97	1.98	2.00	1.98	2.55	2.98	3.28	3.00	2.58	2.85	1.96	3.28	2.21	24	
22	2.72	2.06	2.86	2.30	2.30	S	3.28	2.52	2.30	2.25	2.20	1.98	1.96	1.98	2.00	1.98	1.96	1.98	2.29	2.10	2.03	2.01	2.01	2.03	1.96	3.28	2.22	24	
23	2.05	2.03	2.03	2.04	2.05	S	2.04	2.05	2.02	2.00	2.00	2.00	1.97	1.99	1.97	2.00	1.98	2.02	2.03	2.03	2.05	2.08	2.11	2.11	1.97	2.11	2.03	24	
24	2.09	2.05	2.05	2.06	2.07	S	2.03	2.04	2.01	2.00	2.01	1.98	1.96	1.98	1.94	1.93	1.95	1.93	1.96	1.95	1.95	1.92	1.96	1.94	1.92	2.09	1.99	24	
25	1.92	1.99	1.92	1.94	1.94	S	2.37	2.54	2.46	1.95	1.97	1.96	1.94	1.92	1.94	1.91	1.94	1.92	4.16	2.46	2.18	2.00	2.39	3.32	1.91	4.16	2.22	24	
26	3.98	4.40	5.77	6.11	5.25	S	2.84	2.50	2.67	2.56	2.85	2.17	2.25	2.64	2.03	1.98	1.95	3.87	3.48	6.77	3.66	3.78	2.23	2.81	1.95	6.77	3.42	24	
27	2.09	2.07	2.60	1.97	2.05	S	1.97	1.96	1.95	1.95	1.96	1.94	1.95	1.94	1.92	1.95	1.93	1.95	2.03	1.98	1.96	1.97	1.98	2.00	1.92	2.60	2.00	24	
28	2.00	2.00	2.01	1.99	2.01	S	2.05	2.02	2.00	1.97	1.94	1.94	1.92	1.93	1.90	1.93	1.91	1.99	2.45	2.68	2.13	3.38	2.90	2.28	1.90	3.38	2.14	24	
29	2.83	2.95	2.15	2.42	2.59	S	2.15	2.68	3.27	2.01	1.98	2.26	2.13	2.11	2.02	1.94	1.95	1.99	9.79	4.57	9.63	5.47	5.57	3.69	1.94	9.79	3.40	24	
30	2.72	2.18	2.06	2.02	2.25	S	2.11	1.93	1.92	1.94	1.94	1.95	2.18	2.30	2.21	1.93	1.92	1.94	1.94	1.95	1.95	1.93	1.96	1.96	1.92	2.72	2.05	24	
HOURLY MAX	3.98	4.40	5.77	6.11	5.25	NA	3.28	3.60	3.27	2.56	2.85	2.26	2.25	2.64	2.21	2.05	2.05	3.87	9.79	6.77	9.63	5.47	5.57	3.69					
HOURLY AVG	2.28	2.33	2.28	2.27	2.27	NA	2.19	2.21	2.12	2.02	2.03	1.99	1.99	2.01	1.98	1.96	1.97	2.04	2.44	2.47	2.53	2.43	2.42	2.26					

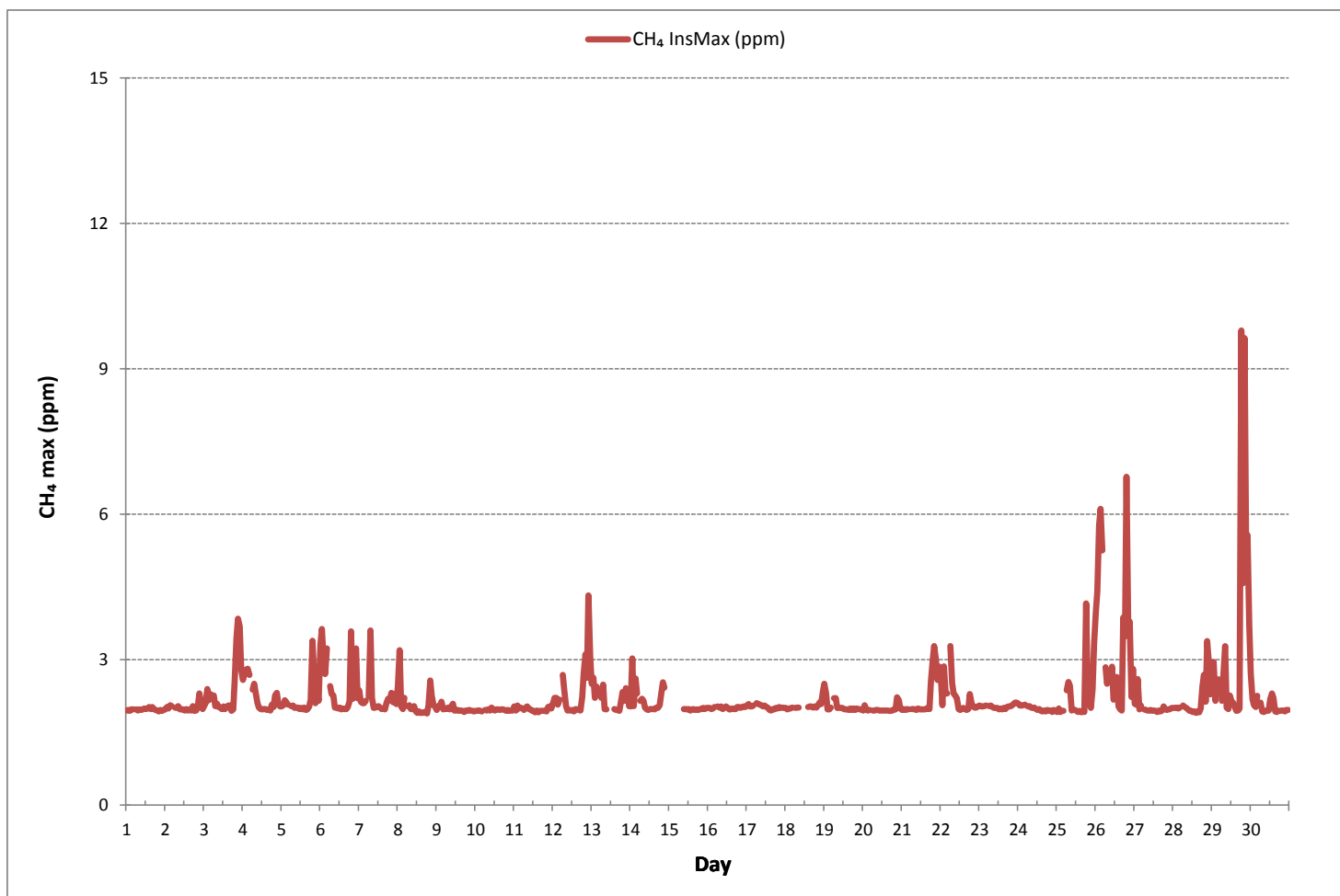
STATUS FLAG CODES

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:	670
MAXIMUM INSTANTANEOUS VALUE:	9.79 ppm @ HOUR 18 ON DAY 29
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.66
OPERATIONAL TIME:	705 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)



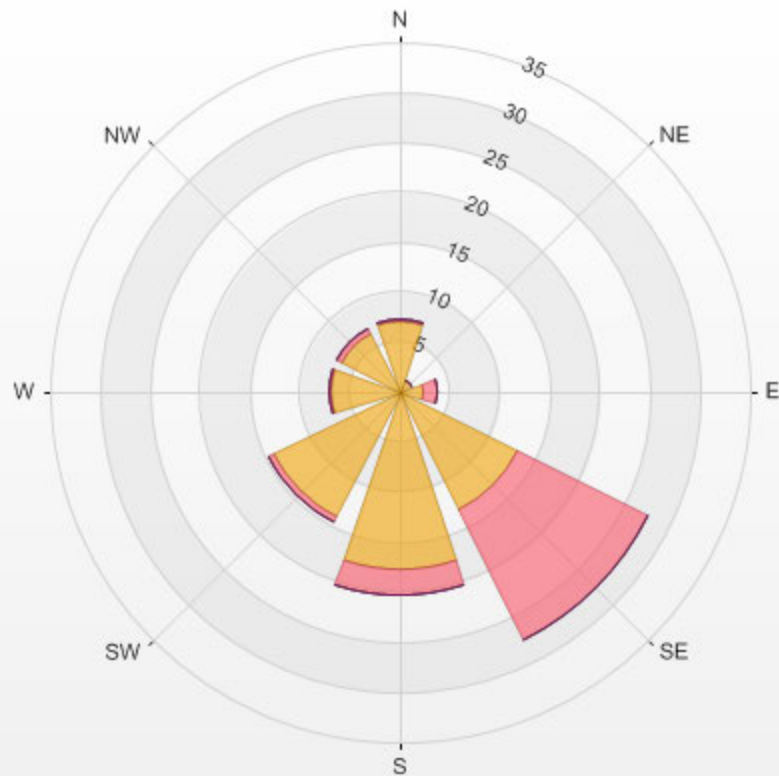
Wind: PRAMP_986
Poll.: PRAMP_986-CH4[ppm]
Monthly: 17/09
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.58%

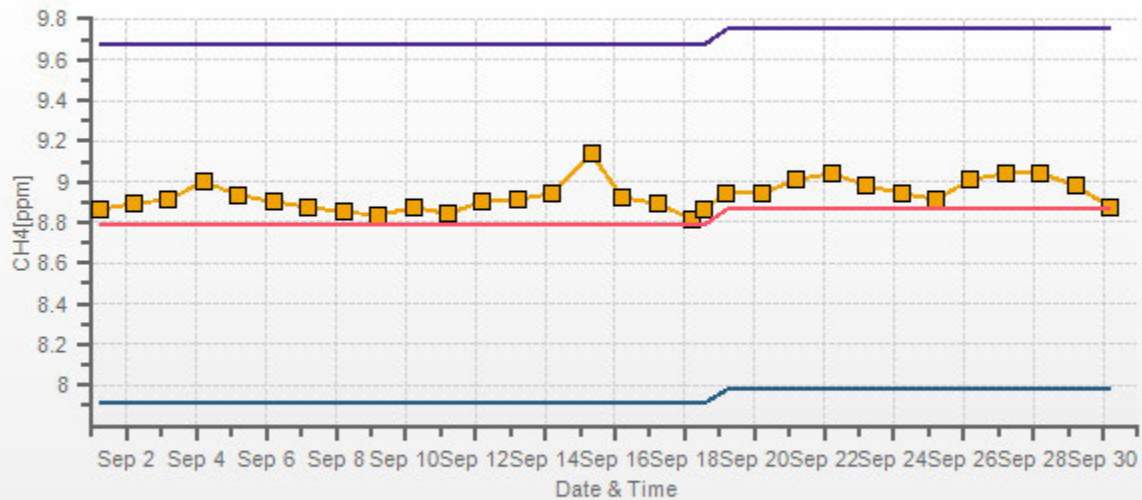
Calm Avg: 2.09 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	7.2	0.2	0.0	0.0	0.0	7.3
NE	1.3	0.0	0.0	0.0	0.0	1.3
E	2.4	1.5	0.0	0.0	0.0	3.9
SE	13.1	14.8	0.0	0.0	0.0	27.9
S	17.7	2.7	0.0	0.0	0.0	20.4
SW	14.0	0.6	0.0	0.0	0.0	14.6
W	6.9	0.2	0.0	0.0	0.0	7.0
NW	6.4	0.6	0.0	0.0	0.0	7.0
Summary	69.0	20.4	0.0	0.0	0.0	89.4

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.58% Calm Poll Avg: 2.09[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 17/09 Type: Span



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

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

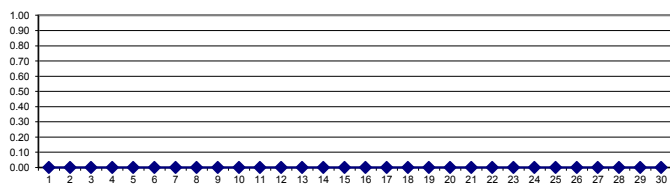
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	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
2	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
3	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
4	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
5	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
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	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
8	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
9	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
10	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
11	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
12	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
13	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	P	P	P	R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20
14	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	P	P	0.00	0.00	0.00	22
15	P	P	P	P	P	S	P	S	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	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
20	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
21	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
22	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
23	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
24	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
25	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
26	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
27	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
28	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
29	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
30	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
HOURLY MAX	0.00	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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 September 2017



MONTHLY SUMMARY

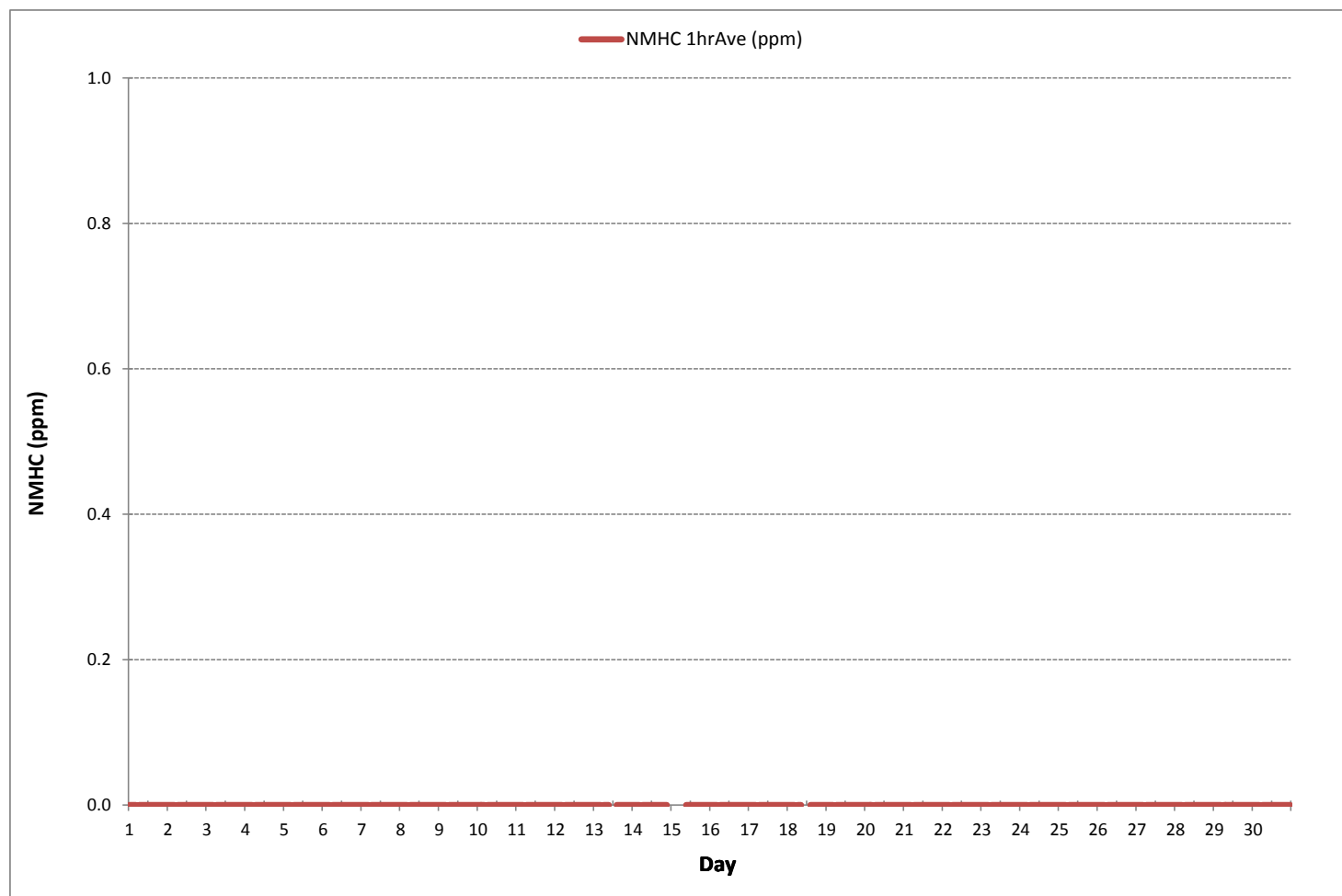
NUMBER OF NON-ZERO READINGS:	0				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY 1
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	706	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	98.1	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - September 2017

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	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
2	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	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
3	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.00	24
4	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
5	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.18	0.06	0.00	0.00	0.00	0.18	0.01	0.00	24
7	0.05	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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	24
8	0.04	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	0.04	0.00	24
9	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
10	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	0.06	0.00	0.06	0.00	0.00	24
11	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
12	0.00	0.00	0.00	0.00	0.00	S	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	P	P	P	P	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	20
14	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	P	P	0.00	0.00	0.00	0.00	22
15	P	P	P	P	P	P	P	S	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	X	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.01	23
18	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	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
20	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
21	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
22	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	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
24	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
25	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	0.09	0.00	0.09	0.00	0.00	24
26	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
27	0.00	0.09	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	0.09	0.00	0.00	24
28	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
29	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
30	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
HOURLY MAX	0.05	0.09	0.00	0.00	0.00	NA	0.00	0.09	0.01	0.00	0.01	0.01	0.00	0.17	0.04	0.01	0.00	0.00	0.00	0.00	0.10	0.18	0.06	0.00	0.09				
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01				

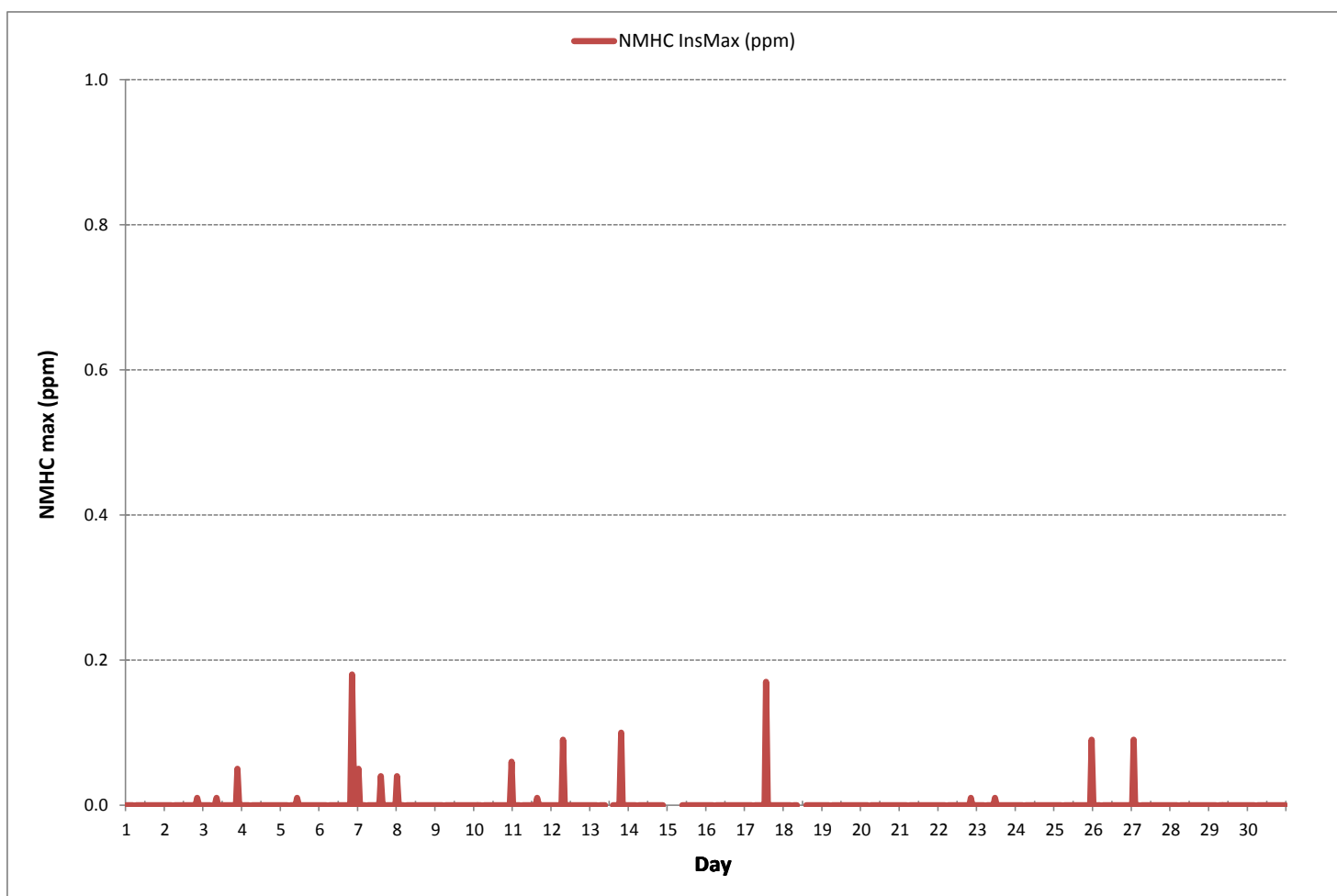
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	18
MAXIMUM INSTANTANEOUS VALUE:	0.18 ppm @ HOUR 20 ON DAY 6
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.01
OPERATIONAL TIME:	705 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



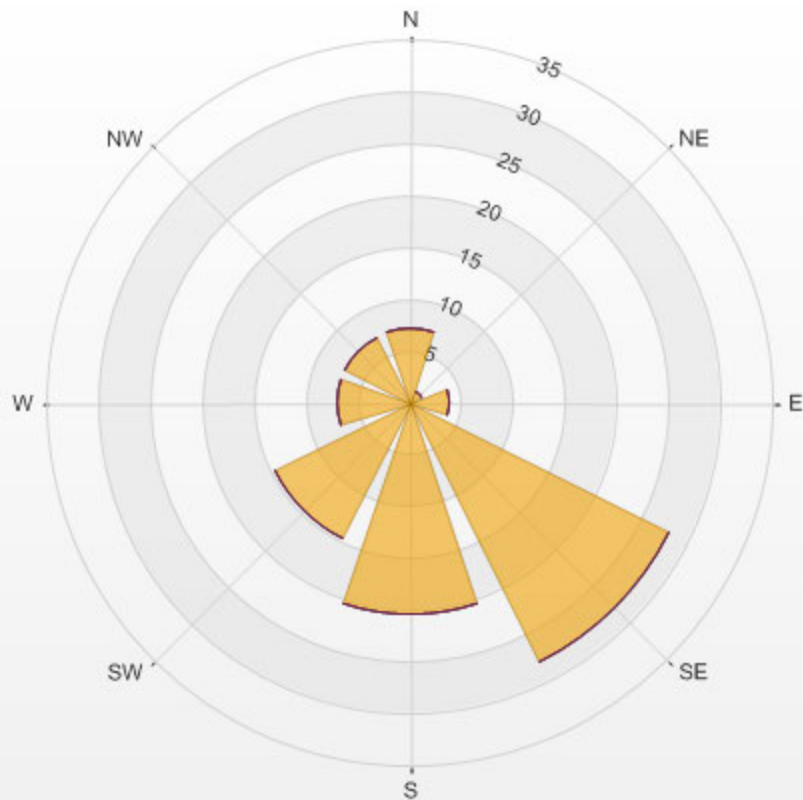
Wind: PRAMP_986
Poll.: PRAMP_986-NMHC[ppm]
Monthly: 17/09
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.58%

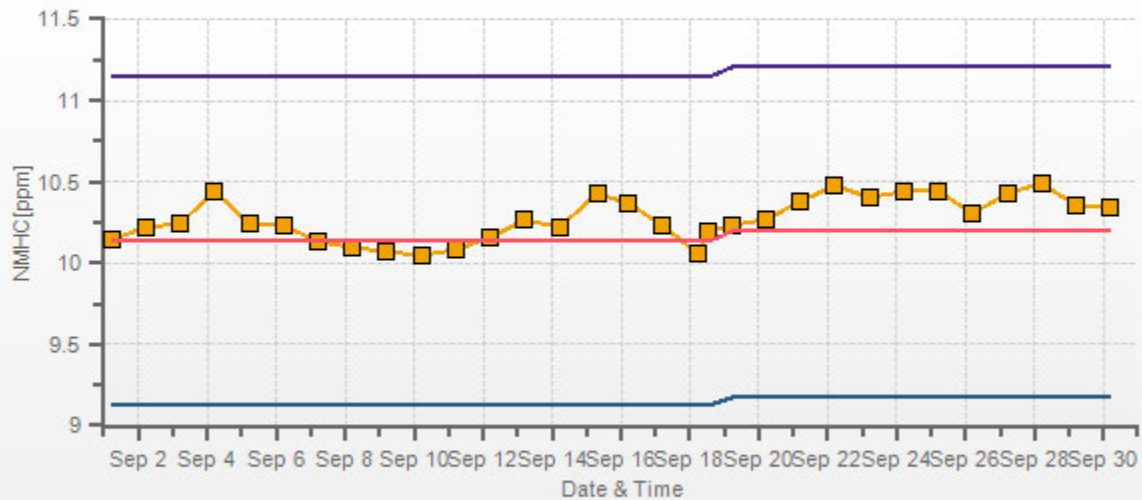
Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.3	0.0	0.0	0.0	0.0	7.3
NE	1.3	0.0	0.0	0.0	0.0	1.3
E	3.9	0.0	0.0	0.0	0.0	3.9
SE	27.9	0.0	0.0	0.0	0.0	27.9
S	20.4	0.0	0.0	0.0	0.0	20.4
SW	14.6	0.0	0.0	0.0	0.0	14.6
W	7.0	0.0	0.0	0.0	0.0	7.0
NW	7.0	0.0	0.0	0.0	0.0	7.0
Summary	89.4	0.0	0.0	0.0	0.0	89.4

PRAMP_986 Poll.: PRAMP_986-NMHC[ppm] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.58% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 17/09 Type: Span



Span Meas Span Ref Span Low Span High

WIND SPEED



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

WIND SPEED Hourly Averages (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	4.9	5.2	5.6	5.9	5.2	6.5	5.4	7.5	7.9	9.0	9.5	12.0	12.5	10.6	10.6	12.6	12.9	11.1	8.0	7.4	7.7	6.7	6.9	5.3	4.9	12.9	7.6	24
2	5.3	1.9	3.9	3.2	3.7	4.9	5.2	4.0	3.8	3.9	8.1	7.8	3.7	3.4	2.9	3.0	3.2	4.4	4.4	2.5	2.7	3.9	3.9	3.7	1.9	8.1	3.1	24
3	3.6	2.9	0.8	1.8	3.5	2.9	2.3	2.0	2.8	3.0	3.1	5.6	5.4	4.5	5.7	5.1	8.9	6.1	6.9	3.8	0.5	0.9	0.6	2.2	0.5	8.9	1.7	24
4	1.2	1.4	1.6	1.4	2.1	2.0	1.3	2.3	3.3	5.4	6.8	10.2	5.9	8.1	8.3	7.9	7.4	5.9	5.1	2.2	2.4	4.2	6.9	9.1	1.2	10.2	4.1	24
5	5.2	4.9	3.8	3.0	3.9	5.0	4.6	6.3	7.2	6.5	5.2	4.6	5.8	5.5	5.8	5.1	4.5	2.9	3.0	2.7	2.2	2.8	3.8	1.9	1.9	7.2	3.0	24
6	1.0	1.6	3.1	0.7	1.1	1.1	1.0	2.9	5.0	5.4	3.5	3.8	6.0	6.9	4.7	5.8	7.0	6.4	5.6	0.9	2.5	3.8	2.1	5.5	0.7	7.0	3.0	24
7	3.6	5.4	6.6	5.2	4.3	3.2	2.3	1.3	5.6	9.4	9.0	7.6	8.2	7.3	7.2	5.3	5.6	5.9	4.2	2.7	2.1	1.6	2.3	4.0	1.3	9.4	4.1	24
8	1.3	2.1	3.3	2.3	1.8	7.0	10.2	4.6	1.1	3.5	3.2	5.8	5.6	10.0	7.3	7.2	7.6	6.1	11.0	4.9	3.3	5.6	2.6	5.0	1.1	11.0	3.2	24
9	4.5	2.6	2.2	2.7	3.2	2.3	4.5	3.0	6.8	8.9	9.1	7.0	7.9	6.8	8.6	7.9	7.6	6.7	6.3	5.4	3.7	3.8	4.2	4.7	2.2	9.1	4.2	24
10	6.5	5.8	6.6	6.8	6.7	7.4	8.5	7.4	7.2	9.6	12.6	11.5	13.1	14.4	14.8	13.1	13.9	8.9	8.7	5.6	7.9	6.5	6.5	3.6	3.6	14.8	8.4	24
11	4.1	4.2	5.1	6.1	4.6	5.6	8.4	7.3	8.0	7.9	9.0	11.9	10.2	13.3	9.6	9.8	15.3	13.4	12.4	8.4	9.7	11.5	9.0	6.5	4.1	15.3	4.7	24
12	6.1	4.2	1.7	1.0	0.4	2.3	0.9	1.2	6.7	9.2	6.4	6.7	5.4	5.3	6.9	11.0	2.7	3.0	0.7	1.2	0.3	0.9	2.9	0.9	0.3	11.0	2.8	24
13	1.2	0.3	1.3	0.6	0.4	0.7	1.7	1.3	4.5	4.6	P	P	P	9.4	6.6	6.3	5.7	3.4	1.5	0.7	1.6	1.1	4.8	1.5	0.3	9.4	2.2	21
14	1.6	1.5	0.9	1.1	0.8	1.6	3.0	1.5	2.3	1.9	2.7	4.7	0.9	2.6	3.3	5.4	5.9	3.6	1.4	1.1	2.9	4.0	P	P	0.8	5.9	0.7	22
15	P	P	P	P	P	P	P	9.3	9.7	12.2	13.1	12.4	12.3	16.5	17.7	13.9	14.2	15.4	13.1	10.2	10.5	9.3	7.8	8.8	7.8	17.7	11.6	17
16	10.3	10.7	9.5	10.1	5.4	4.3	5.2	6.2	11.0	16.5	18.9	19.5	18.1	17.6	17.2	17.8	17.6	15.1	11.4	7.6	11.6	11.7	10.2	7.6	4.3	19.5	11.8	24
17	7.4	6.5	6.2	5.3	4.6	2.4	3.4	5.7	9.4	9.9	7.1	11.1	9.8	12.1	10.3	11.6	9.8	10.1	8.4	6.9	5.5	7.4	8.1	5.2	2.4	12.1	7.4	24
18	6.2	5.5	3.7	4.1	4.4	4.7	5.9	6.5	6.8	5.7	5.5	7.6	5.3	5.5	7.9	11.1	4.2	1.8	2.2	2.7	2.3	2.5	2.4	3.0	1.8	11.1	4.5	24
19	1.9	3.3	2.6	1.5	0.4	0.9	1.9	3.7	3.3	5.2	5.4	7.2	7.9	7.1	7.1	11.0	9.9	9.9	9.0	9.9	7.9	7.5	7.9	8.9	0.4	11.0	4.9	24
20	9.5	9.5	9.4	8.0	8.3	9.0	10.0	10.0	11.7	11.1	11.5	11.3	13.7	11.8	11.4	12.1	12.4	14.3	13.7	12.5	11.1	8.3	9.3	8.5	8.0	14.3	10.5	24
21	5.8	6.3	9.7	9.1	8.7	7.3	5.8	6.5	8.2	9.2	7.5	8.8	10.0	9.9	11.3	9.2	11.7	7.1	2.4	0.5	1.2	1.4	1.6	1.9	0.5	11.7	6.1	24
22	1.9	1.4	0.9	1.1	1.8	0.7	2.7	3.2	2.3	2.3	3.9	4.5	5.8	4.3	3.5	4.0	4.6	6.8	1.8	1.9	5.9	3.4	4.3	5.1	0.7	6.8	2.9	24
23	3.8	3.9	4.4	4.0	4.6	4.6	3.2	4.7	5.9	9.8	10.9	13.2	10.9	7.5	6.4	6.0	2.3	0.6	0.7	1.6	1.9	3.7	4.3	4.7	0.6	13.2	4.3	24
24	5.0	5.6	5.3	5.8	5.4	5.0	6.1	6.5	6.2	9.1	8.9	8.3	9.6	10.8	9.9	8.0	6.9	6.5	6.5	6.3	5.2	5.6	4.8	4.9	4.8	10.8	6.1	24
25	4.2	4.8	5.0	5.7	5.9	6.7	6.5	5.1	6.6	6.7	7.1	6.0	7.1	8.6	8.4	8.2	7.5	6.6	4.2	4.0	1.8	2.9	3.1	3.4	1.8	8.6	4.9	24
26	3.8	3.6	4.0	3.3	1.9	2.5	3.4	2.6	3.3	3.0	3.8	3.3	4.7	6.2	7.2	7.6	5.8	3.4	2.9	3.5	3.4	3.0	3.5	2.7	1.9	7.6	3.0	24
27	2.6	2.4	4.1	4.0	3.5	4.2	3.3	3.0	3.8	3.7	3.3	1.2	1.0	1.9	1.2	0.3	0.6	3.1	1.5	2.8	3.3	4.1	3.3	3.7	0.3	4.2	1.7	24
28	4.2	5.4	5.1	2.4	3.1	3.7	4.0	5.7	10.2	14.0	12.2	7.8	10.2	13.3	15.7	13.6	13.2	10.7	5.2	4.8	10.3	6.5	5.6	5.0	2.4	15.7	7.3	24
29	1.0	1.9	4.6	4.1	2.5	2.7	2.7	3.9	4.2	6.1	2.8	3.9	3.6	3.2	3.4	3.1	2.7	4.3	1.9	2.4	2.8	2.6	4.1	4.7	1.0	6.1	2.2	24
30	2.4	3.4	3.1	2.5	4.5	8.1	6.7	5.4	4.7	7.3	10.1	9.7	8.6	8.9	10.4	9.3	11.8	14.1	9.7	14.4	14.0	9.5	12.3	14.5	2.4	14.5	6.6	24
HOURLY MAX	10.3	10.7	9.7	10.1	8.7	9.0	10.2	10.0	11.7	16.5	18.9	19.5	18.1	17.6	17.7	17.8	17.6	15.4	13.7	14.4	14.0	11.7	12.3	14.5				
HOURLY AVG	1.9	2.3	2.3	2.1	1.8	1.5	1.4	2.0	2.6	3.6	4.1	4.4	4.0	4.5	4.3	4.1	3.2	1.9	1.5	0.9	1.5	1.7	1.2	1.8				

STATUS FLAG CODES

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

LAST CALIBRATION:

April 5, 2017

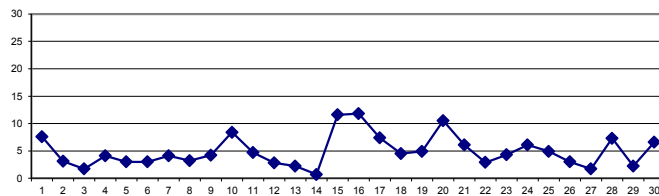
DECLINATION :

MAGNETIC DECLINATION 15 DEGREE EAST

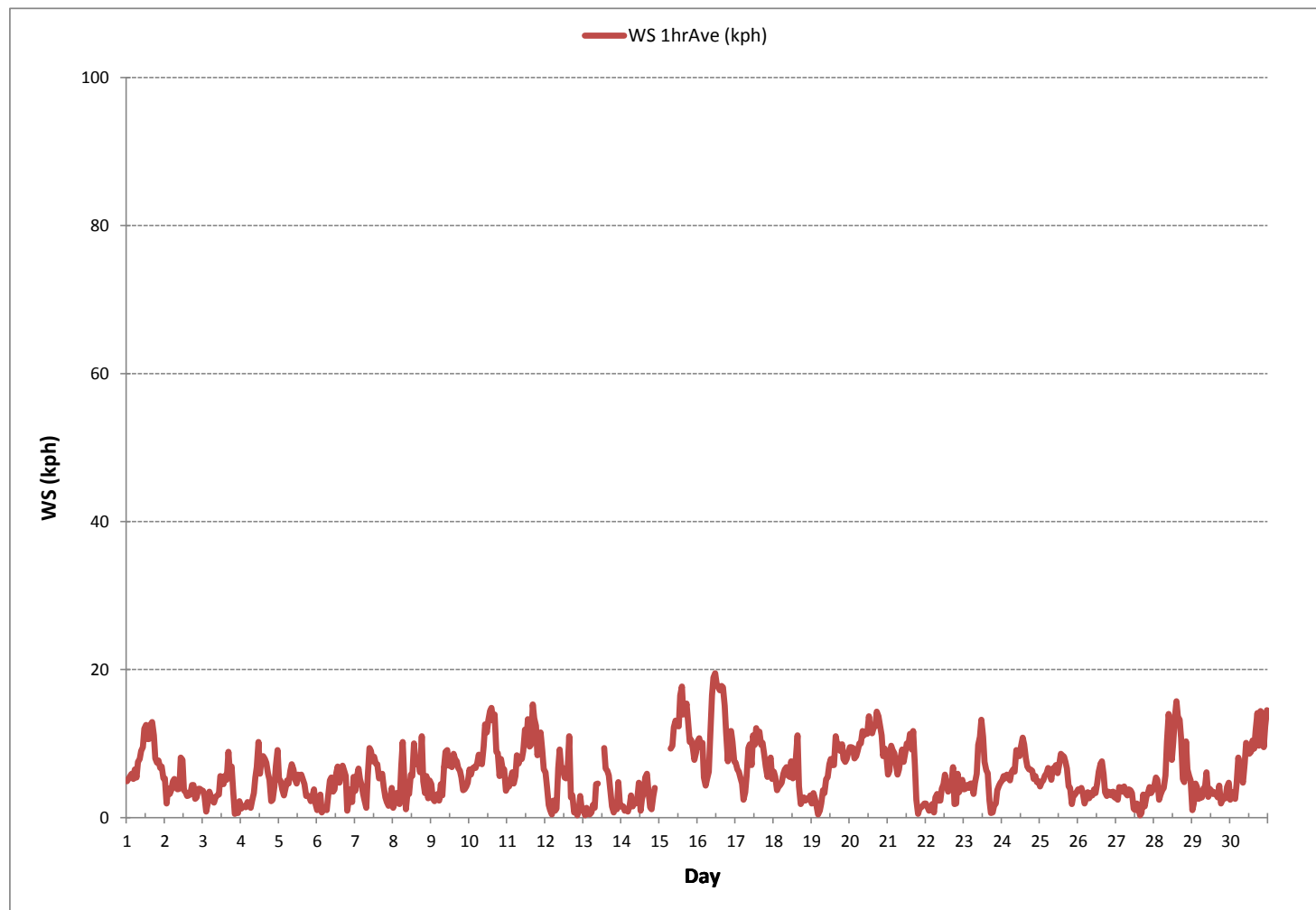
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708				
MINIMUM 1-HR AVERAGE	0.3	kph	@ HOUR	20	ON DAY 12
MAXIMUM 1-HR AVERAGE:	19.5	kph	@ HOUR	11	ON DAY 16
MAXIMUM 24-HR AVERAGE:	11.8	kph			ON DAY 16
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	708	hrs
STANDARD DEVIATION:	3.7		AMD OPERATION UPTIME:	98.3	%
			MONTHLY AVERAGE:	2.1	kph

24 HR AVERAGES September 2017



WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

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	16.0	17.4	13.3	17.0	17.1	19.6	18.7	24.6	24.8	30.2	33.6	35.2	35.7	33.0	35.1	39.0	43.7	37.5	29.0	24.8	24.4	23.0	24.9	20.5	13.3	43.7	26.6	24
2	16.3	12.8	7.3	8.3	7.1	10.4	8.2	8.4	8.6	10.4	18.0	19.8	13.4	12.3	10.7	9.0	10.1	17.0	12.1	9.6	7.5	10.8	11.2	9.0	7.1	19.8	11.2	24
3	16.2	8.6	5.9	5.8	6.7	5.6	7.3	6.1	7.5	7.8	10.3	15.4	16.3	19.4	23.7	14.4	21.0	16.9	22.1	10.1	2.8	3.1	3.2	5.4	2.8	23.7	10.9	24
4	3.9	4.2	4.0	3.7	5.1	5.9	4.6	5.8	7.5	10.9	17.3	21.9	21.2	21.6	21.6	21.7	21.7	18.8	16.9	6.9	7.5	9.8	12.3	13.3	3.7	21.9	12.0	24
5	10.8	9.3	9.5	8.3	9.5	10.3	9.6	12.7	16.5	15.3	14.2	14.5	15.9	19.3	20.1	19.2	14.6	14.8	7.8	5.4	5.1	6.9	7.5	7.2	5.1	20.1	11.8	24
6	4.8	4.8	6.6	3.2	4.1	5.0	3.7	6.5	15.1	11.6	10.5	12.3	16.0	15.1	14.7	13.7	14.0	13.1	13.0	4.1	7.4	9.9	7.2	12.5	3.2	16.0	9.5	24
7	11.1	11.5	12.7	10.9	10.7	9.6	8.8	6.4	19.3	22.2	18.1	19.8	20.6	17.2	20.7	20.4	17.2	15.5	11.3	7.6	5.3	6.9	9.1	7.6	5.3	22.2	13.4	24
8	8.2	11.2	11.1	10.7	9.6	19.8	23.6	13.6	8.4	8.5	8.2	16.6	17.5	22.8	22.3	21.8	18.9	14.4	20.9	11.2	6.5	10.1	8.1	9.4	6.5	23.6	13.9	24
9	8.7	7.5	7.2	8.3	8.8	9.6	11.7	10.9	15.9	16.3	18.0	20.8	23.6	22.3	27.3	24.3	23.7	20.6	18.2	13.3	10.1	14.4	13.4	18.8	7.2	27.3	15.6	24
10	22.0	21.5	27.9	21.2	23.4	24.6	28.5	26.4	24.4	38.6	36.2	47.1	40.0	55.5	44.0	37.8	32.3	33.5	29.7	21.1	28.5	22.1	20.8	17.5	17.5	55.5	30.2	24
11	11.5	14.9	9.6	11.6	12.0	18.3	15.9	14.7	16.5	15.6	18.6	22.4	44.2	44.1	36.9	61.5	54.7	43.2	39.6	45.7	32.4	24.0	19.3	18.5	9.6	61.5	26.9	24
12	16.9	11.7	10.2	4.8	4.8	5.1	5.2	7.1	17.2	23.5	18.9	17.3	18.0	18.6	16.5	46.9	32.5	14.1	3.8	7.6	4.1	7.2	9.4	3.7	3.7	46.9	13.5	24
13	4.6	3.3	6.8	3.9	3.6	2.7	4.3	5.8	15.5	15.2	P	P	P	P	24.5	22.5	21.1	14.0	6.6	8.8	13.0	5.8	15.6	10.7	2.7	24.5	10.4	20
14	10.7	12.1	7.7	4.0	4.1	5.7	6.6	5.7	8.4	7.9	11.2	15.2	14.1	10.9	14.4	16.3	16.4	10.6	5.2	7.3	11.8	9.1	P	P	4.0	16.4	9.8	22
15	P	P	P	P	P	P	P	15.1	15.9	22.2	25.2	23.5	29.3	30.2	33.6	30.4	34.3	28.6	21.3	18.5	18.3	18.5	15.8	16.0	15.1	34.3	23.3	17
16	20.2	19.5	17.3	19.6	10.9	9.7	11.8	12.9	22.6	30.6	31.3	31.6	34.7	35.5	34.3	33.3	31.3	26.9	26.9	19.5	22.4	20.6	19.2	14.7	9.7	35.5	23.2	24
17	15.3	13.3	11.4	11.0	11.9	7.9	8.8	12.1	17.3	19.5	16.7	21.5	23.7	23.9	23.4	26.3	26.1	24.0	23.5	20.4	15.4	18.9	21.2	16.9	7.9	26.3	17.9	24
18	17.6	17.5	16.8	14.9	12.2	18.2	15.7	16.4	21.3	20.8	18.2	21.4	17.9	16.4	23.3	21.9	12.6	5.1	8.4	8.5	8.9	6.7	8.8	9.9	5.1	23.3	15.0	24
19	8.8	9.5	8.2	6.6	6.2	4.9	4.7	6.8	9.5	12.7	16.1	26.5	21.9	22.9	25.4	36.4	40.4	34.5	38.5	36.2	28.0	22.8	31.6	28.2	4.7	40.4	20.3	24
20	32.8	30.5	30.1	27.4	27.6	26.1	30.8	30.5	38.6	31.5	34.2	32.6	36.8	32.9	41.0	33.4	39.3	55.8	48.7	51.5	42.2	27.5	28.4	23.8	23.8	55.8	34.8	24
21	15.0	19.0	26.2	28.0	23.6	22.5	17.3	19.5	25.9	30.2	22.9	26.2	26.0	24.7	24.2	22.9	23.2	15.7	5.6	2.5	3.8	3.7	4.4	5.0	2.5	30.2	18.3	24
22	5.1	4.6	3.4	3.9	5.0	3.6	6.1	6.1	7.3	6.0	14.8	14.4	15.8	15.6	16.1	13.3	13.6	14.0	5.6	13.6	16.5	10.5	9.8	9.8	3.4	16.5	9.8	24
23	9.5	9.1	10.4	9.3	10.8	11.0	9.2	11.2	13.6	17.3	19.0	25.2	28.2	23.9	18.3	18.8	10.1	4.1	3.0	3.8	6.4	7.9	10.1	8.9	3.0	28.2	12.5	24
24	11.0	10.9	11.2	11.1	9.6	10.0	12.8	14.0	14.5	18.7	20.5	20.9	19.9	23.1	24.6	22.3	22.4	18.1	13.5	15.0	11.0	18.2	16.6	9.3	9.3	24.6	15.8	24
25	10.0	9.5	10.8	11.9	12.8	14.9	12.1	16.2	17.9	20.2	23.6	22.9	24.6	29.8	28.1	28.9	25.9	20.3	14.4	14.5	9.9	6.9	7.7	7.9	6.9	29.8	16.7	24
26	7.4	7.0	7.0	5.8	4.1	4.8	5.8	5.5	7.5	9.2	13.0	10.3	16.1	16.2	22.1	22.8	22.1	14.4	4.9	14.0	8.8	10.6	13.6	7.9	4.1	22.8	10.9	24
27	9.3	5.7	7.1	6.9	6.2	7.8	7.4	8.1	9.4	8.9	12.5	7.8	15.8	11.6	12.9	7.8	9.1	8.2	6.6	7.8	9.0	9.8	9.6	10.6	5.7	15.8	9.0	24
28	9.2	11.6	12.5	7.2	8.0	9.8	8.9	13.5	19.9	23.3	22.5	21.5	25.6	26.5	30.4	27.7	24.2	21.6	13.1	11.5	18.5	14.4	12.1	10.3	7.2	30.4	16.8	24
29	8.8	5.6	12.2	8.6	7.1	6.9	8.4	8.8	10.5	11.6	9.2	11.9	13.9	11.5	11.0	10.3	10.5	7.5	5.3	4.8	9.1	8.7	8.0	9.0	4.8	13.9	9.1	24
30	17.9	8.6	12.5	15.0	18.8	27.8	23.0	18.8	15.5	26.7	30.5	28.3	30.4	25.9	30.7	29.6	34.5	29.6	20.0	35.5	32.7	22.0	30.2	28.6	8.6	35.5	24.7	24
HOURLY MAX	32.8	30.5	30.1	28.0	27.6	27.8	30.8	30.5	38.6	38.6	36.2	47.1	44.2	55.5	44.0	61.5	54.7	55.8	48.7	51.5	42.2	27.5	31.6	28.6				
HOURLY AVG	12.4	11.5	11.6	10.7	10.4	11.7	12.3	15.8	18.1	19.4	21.5	23.3	23.5	24.4	25.2	24.1	20.4	16.5	15.4	14.2	13.0	14.1	12.8					

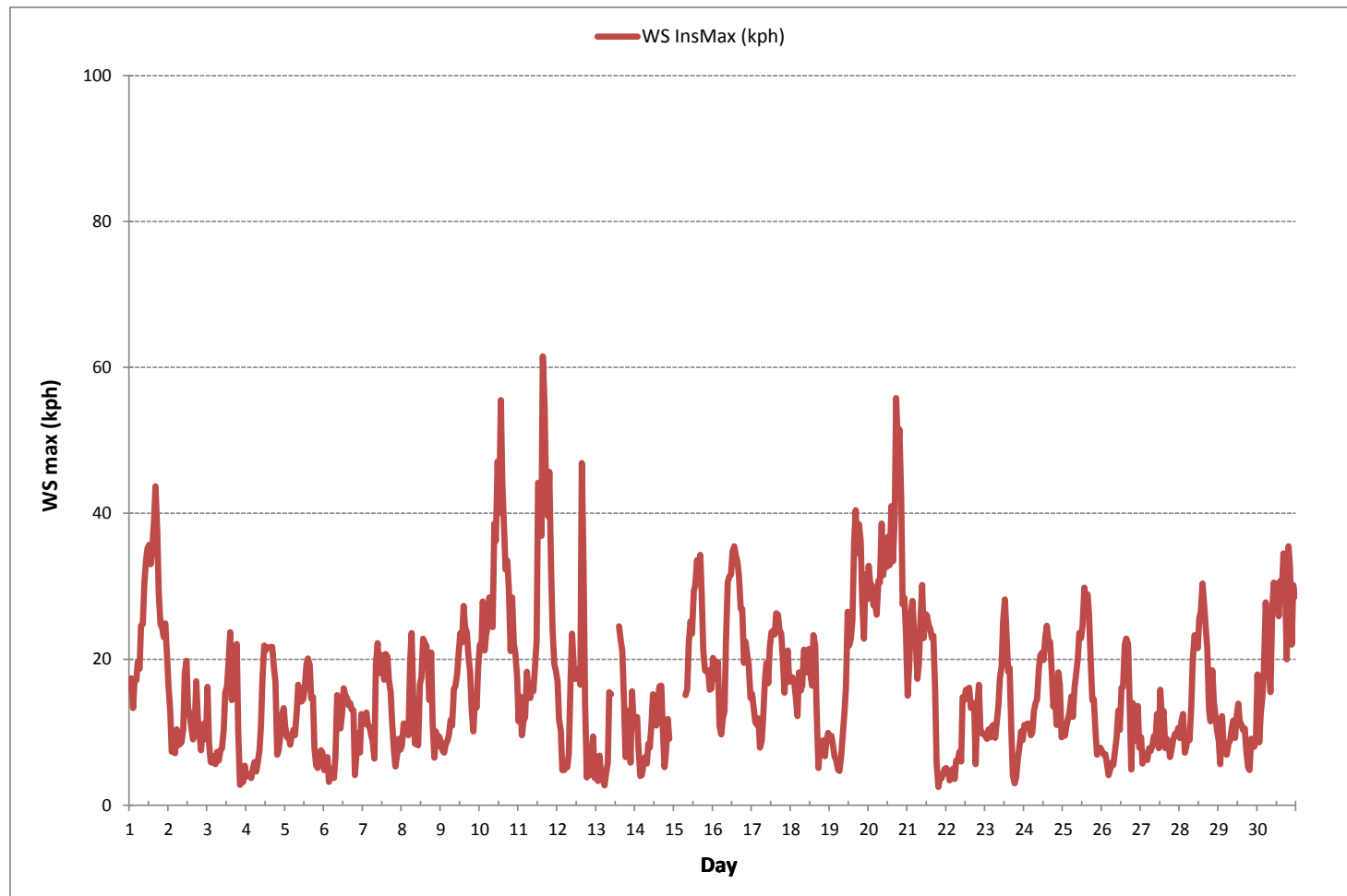
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	61.5	kph	@ HOUR	15	ON DAY	11
OPERATIONAL TIME:	707	hrs				

WIND SPEED Instantaneous Maximum (WS kph)



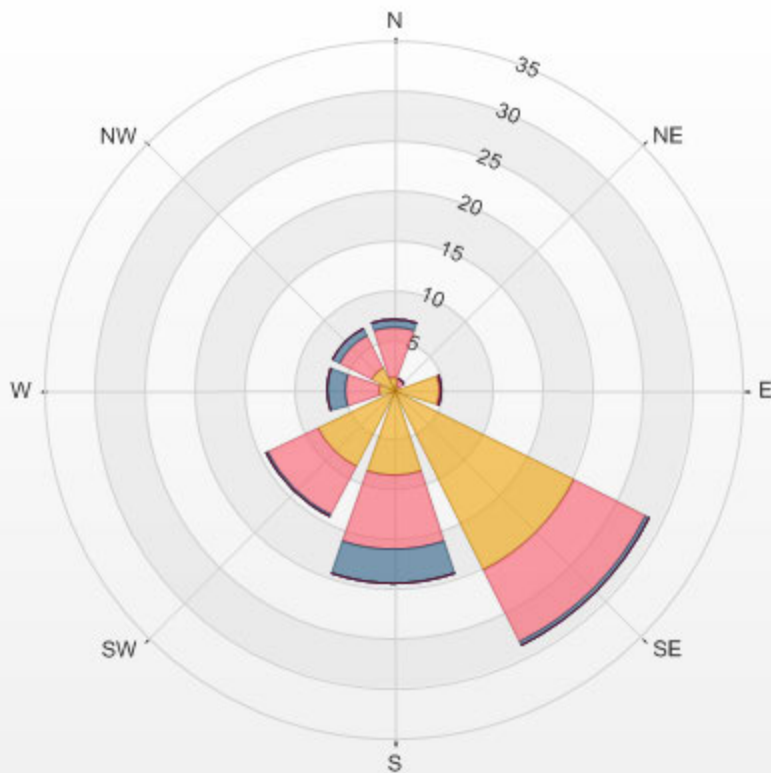
Wind: PRAMP_986
 Monitor: WSP [kph]
 Monthly: 17/09
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 10.73%

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	1.3	5.1	0.9	0.0	0.0	0.0	7.2
NE	0.6	0.7	0.0	0.0	0.0	0.0	1.3
E	4.5	0.3	0.0	0.0	0.0	0.0	4.8
SE	20.3	7.9	0.4	0.0	0.0	0.0	28.7
S	8.6	7.5	3.4	0.0	0.0	0.0	19.5
SW	8.6	5.5	0.1	0.0	0.0	0.0	14.3
W	1.6	3.4	1.7	0.0	0.0	0.0	6.6
NW	2.5	3.7	0.7	0.0	0.0	0.0	6.9
Summary	48.0	34.0	7.2	0.0	0.0	0.0	89.3

%	Icon	Classes (kph)
48		1.8-6.0
34		6.0-12.0
7		12.0-20.0
0		20.0-29.0
0		29.0-39.0
0		>39.0

PRAMP_986 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 10.73% Calm Wind Avg Speed: 1.08(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - September 2017

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

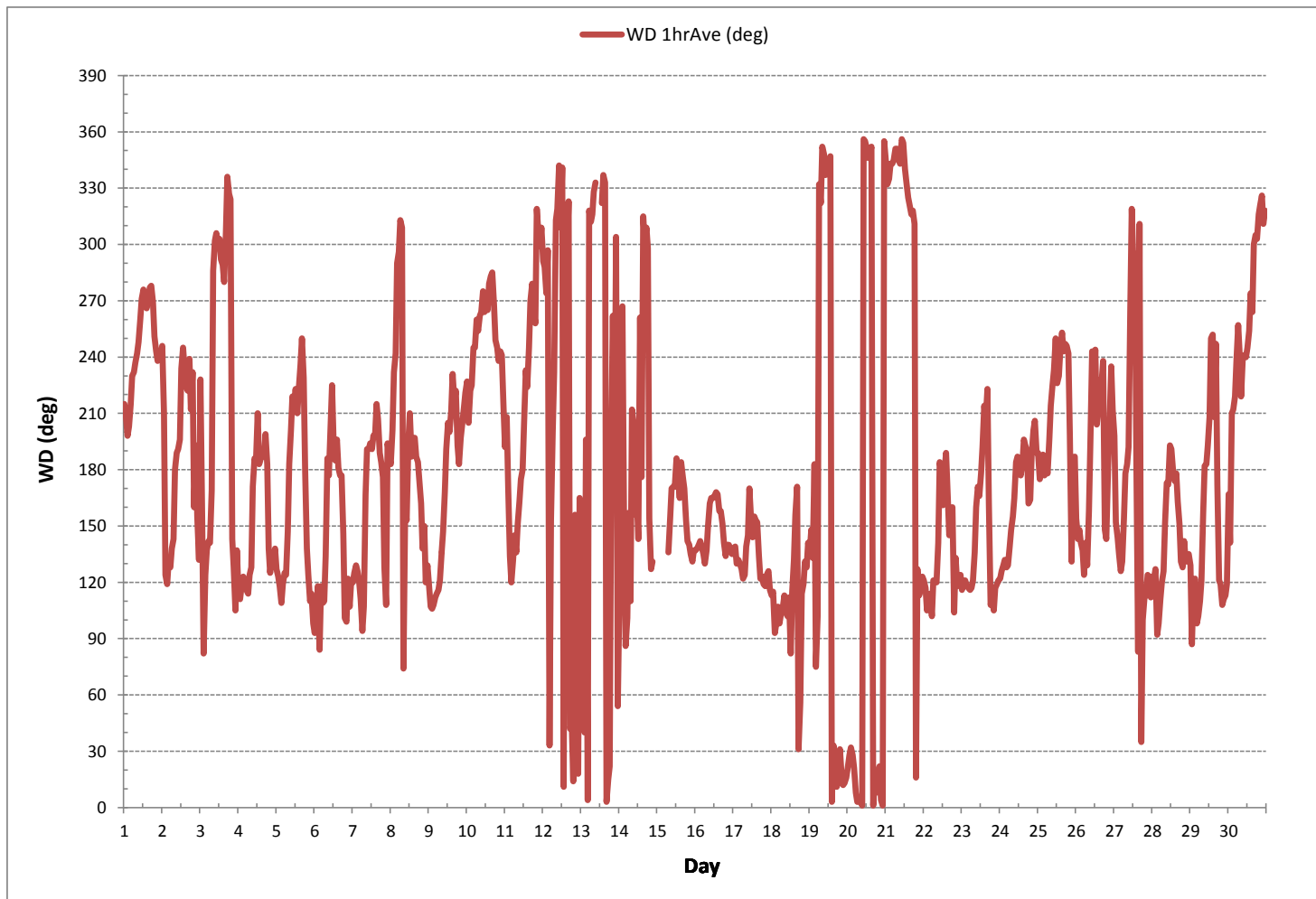
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	708	hrs
STANDARD DEVIATION:	79		AMD OPERATION UPTIME:	98.3	%
			MONTHLY AVERAGE:	185 (S)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

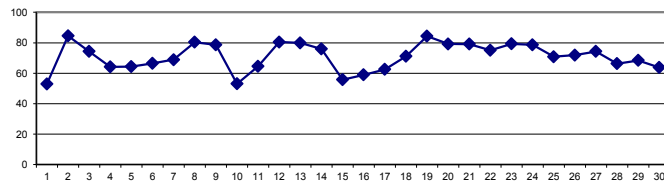
RELATIVE HUMIDITY Hourly Averages (RH %)

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

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 September 2017

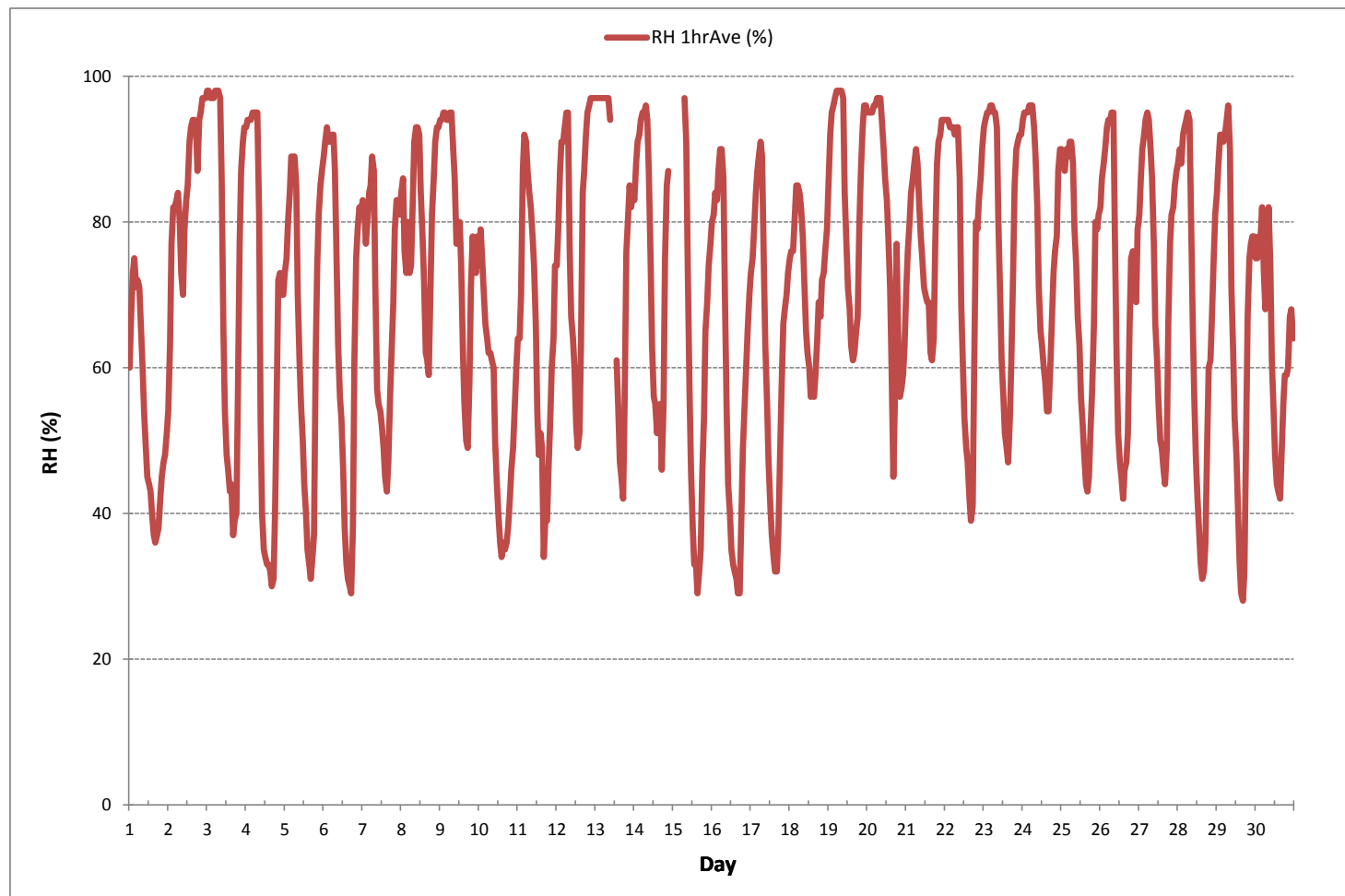


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	28	%	@ HOUR	16	ON DAY	29
MAXIMUM 1-HR AVERAGE:	98	%	@ HOUR	0	ON DAY	3
MAXIMUM 24-HR AVERAGE:	84	%			ON DAY	2

OPERATIONAL TIME:	708	hrs
AMD OPERATION UPTIME:	98.3	%
STANDARD DEVIATION:	20	
MONTHLY AVERAGE:	71	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE

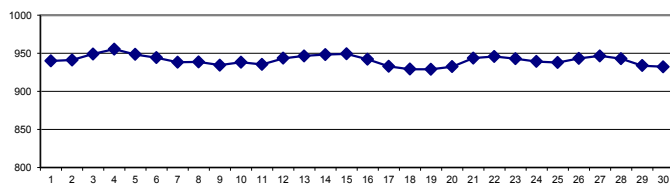
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	940	940	940	940	940	940	940	940	940	940	940	939	939	940	940	940	939	940	940	940	940	940	941	941	939	941	940	24	
2	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	942	942	942	943	943	941	943	941	24
3	944	944	944	945	945	946	947	947	948	949	949	949	950	950	950	951	951	951	951	951	952	953	954	954	955	944	955	949	24
4	956	956	956	957	957	957	958	958	958	958	958	957	957	956	956	955	955	954	954	953	953	952	952	952	952	952	958	956	24
5	951	951	951	950	950	950	950	950	950	950	950	949	949	949	948	948	947	947	946	946	946	946	946	946	946	946	951	949	24
6	946	946	946	946	946	946	945	945	945	946	946	946	945	945	944	944	943	942	942	942	942	942	942	942	942	942	946	944	24
7	941	941	940	940	940	939	939	939	938	939	939	938	938	938	937	937	937	936	936	936	937	937	937	937	936	941	938	24	
8	937	937	937	937	938	939	940	940	940	940	940	941	940	940	939	939	938	938	938	938	938	938	938	938	937	941	939	24	
9	938	937	937	936	936	936	935	935	935	935	934	934	934	934	934	933	933	933	933	933	933	933	933	933	933	938	934	24	
10	934	934	934	935	935	936	936	937	938	939	939	939	939	940	940	940	940	940	941	941	941	940	940	940	934	941	938	24	
11	939	939	938	938	937	936	935	934	934	934	934	934	933	933	933	933	933	934	935	935	937	938	939	940	933	940	936	24	
12	940	941	942	942	942	943	943	943	944	944	944	944	944	944	944	944	944	944	944	944	945	945	945	945	940	945	944	24	
13	945	946	946	946	946	947	947	947	947	947	P	P	P	947	947	947	947	947	947	947	947	947	947	947	945	947	947	21	
14	947	947	947	947	947	947	947	948	948	949	949	949	949	949	949	949	949	949	949	950	950	950	P	P	947	950	948	22	
15	P	P	P	P	P	P	P	951	952	952	952	951	951	951	950	949	949	948	948	948	948	947	947	947	946	946	952	949	17
16	946	946	945	945	945	944	944	944	944	944	943	943	943	942	942	941	940	940	940	939	939	939	938	938	938	946	942	24	
17	937	937	936	936	935	935	935	934	934	934	934	933	933	932	932	932	931	931	931	931	930	930	930	929	929	937	933	24	
18	929	929	929	928	928	928	928	929	929	929	929	929	929	929	930	930	930	930	930	930	930	930	930	931	928	931	929	24	
19	931	930	930	930	930	930	930	930	930	930	929	929	928	928	928	928	928	928	928	928	928	928	928	927	927	931	929	24	
20	928	928	928	929	930	930	931	931	931	932	932	932	932	933	933	933	935	936	936	937	937	937	938	938	928	938	933	24	
21	938	939	939	940	940	941	942	942	943	943	944	944	945	945	945	946	946	947	947	947	947	947	947	947	938	947	944	24	
22	948	948	947	947	947	947	947	947	947	947	947	947	946	946	945	945	944	944	944	944	944	944	944	943	943	948	946	24	
23	943	943	943	943	943	943	943	943	943	944	944	944	943	943	943	943	943	943	943	943	942	942	942	942	942	944	943	24	
24	942	942	941	941	941	941	940	940	940	940	940	940	939	939	939	938	938	938	938	938	938	937	937	937	937	942	939	24	
25	937	937	937	937	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	939	939	939	939	940	937	940	938	24	
26	940	940	941	941	942	942	943	943	944	944	945	945	945	945	944	944	944	944	944	944	944	944	944	944	940	945	943	24	
27	945	945	945	945	945	945	946	946	947	947	947	948	948	948	948	948	947	947	947	947	947	947	947	948	945	948	947	24	
28	947	947	947	947	946	946	946	945	945	945	945	944	944	943	942	942	941	940	940	939	939	939	938	937	937	947	943	24	
29	937	937	936	936	936	936	936	935	935	935	935	935	935	934	933	933	933	932	932	932	931	930	930	930	930	937	934	24	
30	930	930	930	930	931	931	932	932	932	932	932	932	932	932	932	932	932	933	933	934	935	935	936	936	930	936	932	24	
HOURLY MAX	956	956	956	957	957	957	958	958	958	958	958	957	957	956	956	955	955	954	954	953	953	954	954	955					
HOURLY AVG	941	941	940	941	941	941	941	941	941	942	941	941	941	941	941	941	940	941	941	941	941	941	941	940	940				

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

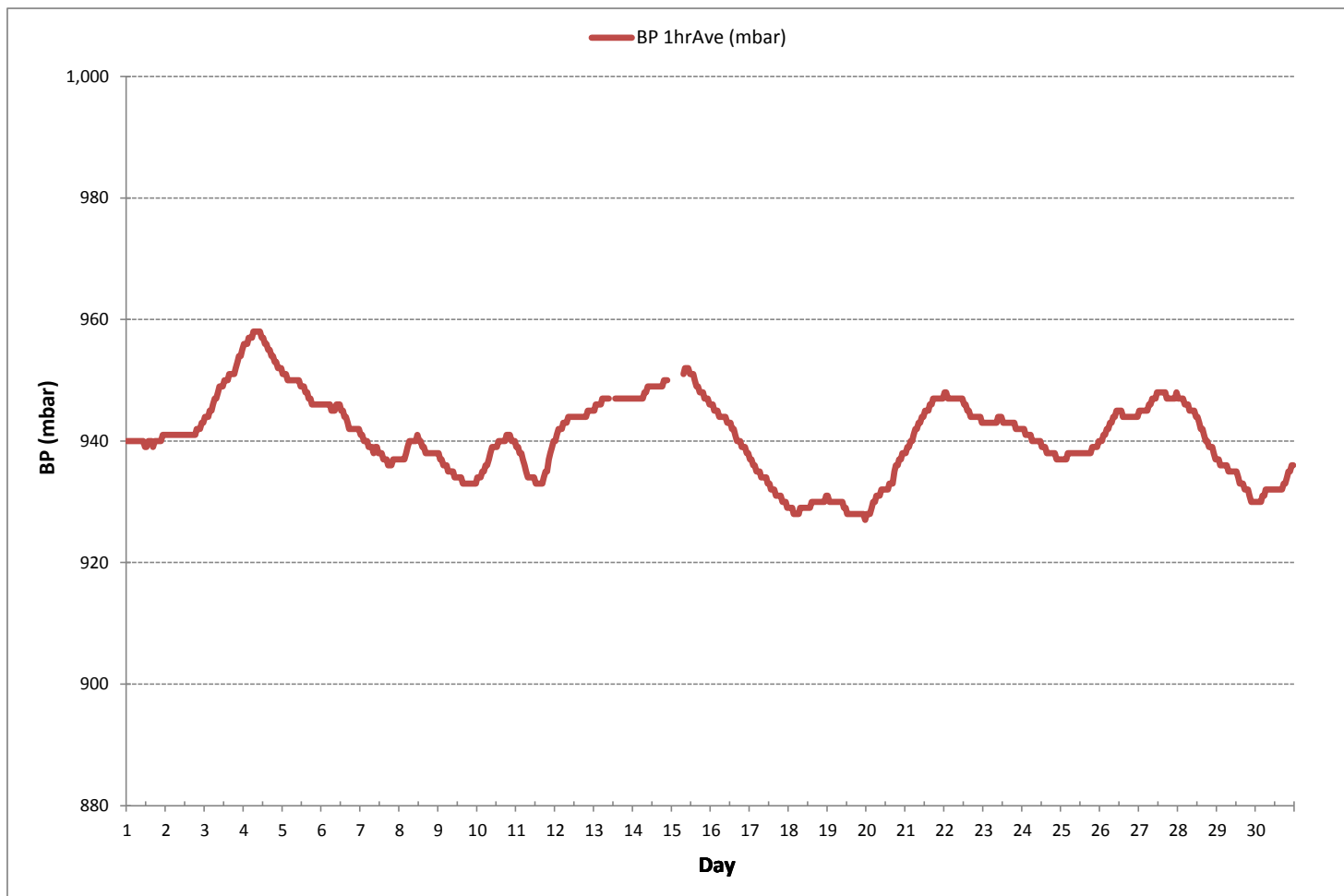
24 HR AVERAGES September 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	927	mbar	@ HOUR	23	ON DAY	19
MAXIMUM 1-HR AVERAGE:	958	mbar	@ HOUR	6	ON DAY	4
MAXIMUM 24-HR AVERAGE:	956	mbar			ON DAY	4
OPERATIONAL TIME:						708 hrs
AMD OPERATION UPTIME:						98.3 %
STANDARD DEVIATION:	7				MONTHLY AVERAGE:	941 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - September 2017

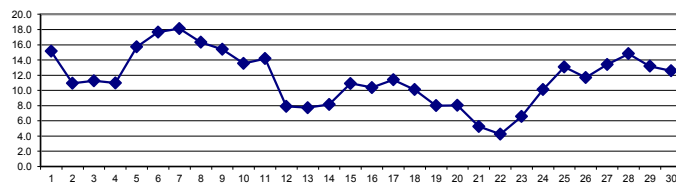
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	12.6	11.0	9.4	9.1	9.8	9.5	9.9	11.6	14.1	15.8	17.1	17.6	17.8	18.6	19.5	20.6	20.4	20.3	19.7	18.1	16.7	15.4	14.7	14.0	9.1	20.6	15.1	24	
2	13.4	11.2	8.0	7.0	7.4	7.5	7.8	9.6	12.0	13.0	13.2	13.2	13.2	13.1	13.1	13.0	12.9	13.1	13.6	11.5	9.6	9.2	8.9	7.6	7.0	13.6	10.9	24	
3	9.7	9.5	8.1	6.8	6.2	6.0	5.4	7.2	9.0	11.2	14.0	15.7	17.1	18.1	18.6	17.9	19.2	19.0	17.3	13.3	8.8	5.8	3.9	2.7	2.7	19.2	11.3	24	
4	1.9	1.1	0.1	0.0	-0.5	-0.8	-0.3	2.1	9.0	14.8	17.9	19.1	19.9	20.9	21.5	22.5	23.0	22.1	18.1	13.6	9.9	8.9	9.3	9.5	-0.8	23.0	11.0	24	
5	8.6	8.1	7.3	6.3	5.5	6.2	6.5	9.3	14.8	17.8	19.6	21.9	23.7	25.1	25.8	26.7	27.2	26.6	25.2	18.0	13.8	11.9	10.9	10.7	5.5	27.2	15.7	24	
6	9.3	8.2	8.7	8.9	9.3	8.9	8.6	11.2	16.5	19.4	21.9	23.5	25.5	27.1	28.2	29.4	29.8	29.6	26.4	19.4	14.7	13.8	12.9	12.9	8.2	29.8	17.7	24	
7	11.6	11.2	12.4	12.2	11.2	10.9	10.0	11.9	17.3	20.6	22.0	23.2	24.3	25.6	26.6	26.8	26.2	24.0	21.9	19.4	16.3	15.9	16.3	17.4	10.0	26.8	18.1	24	
8	16.2	15.3	17.3	17.5	15.6	17.0	16.8	14.7	13.8	13.9	14.5	15.7	16.7	18.0	18.7	20.7	20.8	20.9	18.0	15.8	14.3	13.6	13.0	12.9	12.9	20.9	16.3	24	
9	12.7	12.6	12.5	12.6	13.0	13.1	13.1	13.9	15.5	16.6	18.5	18.3	17.7	18.6	19.8	19.8	20.4	19.8	17.8	14.6	12.9	12.5	12.0	11.0	11.0	20.4	15.4	24	
10	11.5	10.4	10.4	10.6	10.5	10.4	10.7	10.9	11.5	12.6	14.4	16.0	17.0	17.7	17.4	16.8	17.1	16.8	16.0	14.6	14.0	13.5	12.7	11.7	10.4	17.7	13.6	24	
11	11.2	11.8	11.3	9.7	9.2	9.3	9.6	10.1	10.9	12.2	13.5	15.8	19.2	20.4	20.3	20.8	21.9	20.4	19.0	16.8	14.5	12.1	11.2	9.0	9.0	21.9	14.2	24	
12	9.3	7.8	5.7	4.6	3.3	1.7	2.5	3.8	8.6	10.6	12.1	13.0	14.8	15.4	14.5	12.3	9.9	9.6	8.3	6.4	5.0	4.2	3.9	2.3	1.7	15.4	7.9	24	
13	2.8	3.6	4.7	4.7	3.8	4.0	3.9	4.7	5.9	6.5	P	P	P	13.0	13.5	14.5	13.9	14.2	11.4	7.6	7.6	7.4	7.5	6.9	2.8	14.5	7.7	21	
14	6.9	6.0	5.3	4.5	2.9	2.4	1.7	2.5	5.6	7.3	9.9	12.5	13.4	13.2	14.4	14.0	12.5	14.2	12.6	8.3	4.9	4.3	P	P	1.7	14.4	8.2	22	
15	P	P	P	P	P	P	P	P	1.7	5.9	9.5	12.2	14.1	15.0	15.7	16.0	16.6	16.8	15.9	13.1	9.7	7.2	6.4	5.0	4.8	1.7	16.8	10.9	17
16	4.6	5.0	4.5	4.5	3.1	2.1	2.0	3.6	8.3	11.7	14.1	15.7	16.9	17.9	18.4	19.0	19.0	18.1	14.3	11.1	10.7	9.5	8.2	6.8	2.0	19.0	10.4	24	
17	6.3	5.7	4.7	3.6	2.7	1.9	1.8	3.2	7.8	11.2	13.6	16.6	18.8	20.4	21.2	21.9	21.7	19.8	15.9	12.9	10.9	10.9	10.6	9.9	1.8	21.9	11.4	24	
18	9.4	8.8	8.5	7.2	6.0	5.7	5.6	6.0	7.4	9.1	11.4	12.3	13.5	14.5	14.3	14.4	13.9	13.4	12.4	11.5	10.0	9.6	9.0	8.4	5.6	14.5	10.1	24	
19	7.0	7.5	7.3	6.9	6.3	5.8	4.2	3.3	4.4	5.5	7.0	8.5	10.5	10.8	11.1	11.6	11.4	11.0	10.5	9.0	8.3	7.9	8.0	8.0	3.3	11.6	8.0	24	
20	8.1	8.1	7.9	7.5	7.2	7.0	7.1	7.2	7.3	7.1	7.5	7.7	7.8	8.2	9.1	9.8	10.3	8.9	6.8	8.0	8.8	8.9	8.6	7.7	6.8	10.3	8.0	24	
21	6.1	6.2	6.4	6.0	5.4	4.9	4.7	5.2	5.9	6.1	6.3	6.8	7.3	7.4	7.7	8.5	8.5	7.8	5.3	3.0	1.0	0.1	-0.1	-0.7	-0.7	8.5	5.2	24	
22	-1.6	-2.1	-2.9	-3.5	-3.6	-3.9	-4.7	-3.2	0.1	5.1	8.3	10.3	11.6	12.2	12.4	13.9	14.4	13.4	8.6	4.2	4.3	3.4	2.9	2.4	-4.7	14.4	4.3	24	
23	1.8	1.1	0.6	0.2	0.4	1.4	1.6	1.6	4.0	7.8	10.4	12.3	13.7	14.6	15.0	15.6	13.6	12.5	9.3	5.5	4.0	3.5	3.2	3.8	0.2	15.6	6.6	24	
24	3.1	3.0	2.8	2.5	2.2	1.9	3.5	5.4	7.5	9.6	11.8	13.8	14.5	16.0	16.7	17.8	17.7	16.2	14.8	13.5	13.0	13.1	11.9	10.3	1.9	17.8	10.1	24	
25	9.9	10.3	10.0	9.3	9.2	8.4	8.2	9.1	11.3	12.8	14.5	15.8	17.8	18.0	18.9	19.5	19.6	18.5	16.4	14.9	12.4	9.3	9.9	9.6	8.2	19.6	13.1	24	
26	9.3	8.2	7.4	6.1	5.0	3.6	2.5	2.3	6.6	11.5	14.0	16.3	17.3	18.7	19.1	18.6	18.7	17.1	14.0	12.0	13.0	13.8	14.3	11.5	2.3	19.1	11.7	24	
27	10.8	8.9	7.9	7.2	6.3	6.3	7.8	9.9	11.7	14.0	16.3	17.4	19.2	20.4	21.1	21.9	22.5	20.7	16.0	12.9	11.5	11.4	10.1	9.6	6.3	22.5	13.4	24	
28	9.0	8.8	9.2	7.8	6.5	6.1	6.4	7.0	11.8	15.6	18.5	21.1	22.7	24.1	24.7	25.2	25.2	23.5	18.3	15.3	15.1	13.0	11.1	9.8	6.1	25.2	14.8	24	
29	9.1	6.6	6.2	6.4	5.2	3.7	3.2	4.2	9.4	14.1	16.8	19.7	21.4	22.8	24.1	25.2	25.3	23.4	16.8	12.5	10.9	10.1	9.7	9.5	3.2	25.3	13.2	24	
30	9.9	9.6	9.5	10.2	11.3	12.9	12.6	11.8	10.9	11.7	13.0	14.2	15.7	16.9	17.2	17.5	16.6	15.0	13.6	13.0	11.3	9.7	9.4	8.3	8.3	17.5	12.6	24	
HOURLY MAX	16.2	15.3	17.3	17.5	15.6	17.0	16.8	14.7	17.3	20.6	22.0	23.5	25.5	27.1	28.2	29.4	29.8	29.6	26.4	19.4	16.7	15.9	16.3	17.4					
HOURLY AVG	8.3	7.7	7.3	6.8	6.2	6.0	6.0	6.7	9.5	11.8	13.9	15.5	16.7	17.4	18.0	18.4	18.3	17.5	15.0	12.2	10.5	9.6	9.3	8.6					

STATUS FLAG CODES

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

24 HR AVERAGES September 2017



MONTHLY SUMMARY

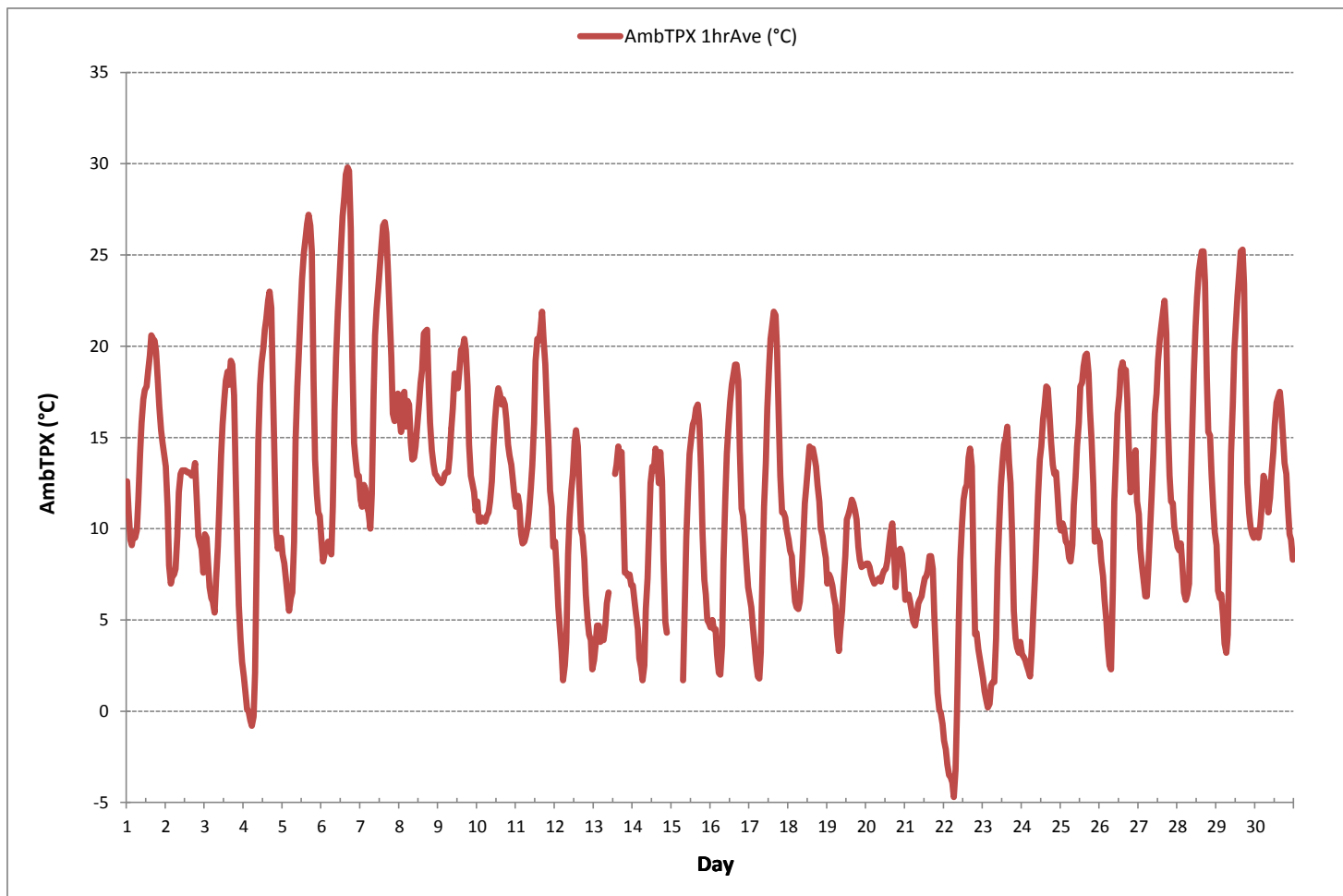
MINIMUM 1-HR AVERAGE:	-4.7	°C	@ HOUR	6	ON DAY	22
MAXIMUM 1-HR AVERAGE:	29.8	°C	@ HOUR	16	ON DAY	6
MAXIMUM 24-HR AVERAGE:	18.1	°C			ON DAY	7

OPERATIONAL TIME: 708 hrs

AMD OPERATION UPTIME: 98.3 %

STANDARD DEVIATION: 6.2 MONTHLY AVERAGE: 11.6 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

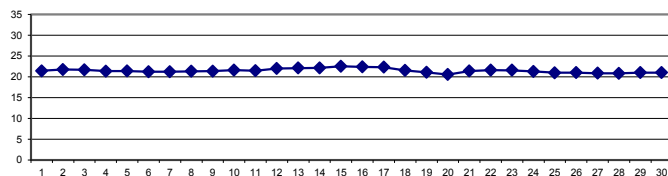
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	21.7	21.7	21.9	22.2	21.9	22.2	21.9	22.0	21.8	21.6	21.1	21.3	20.9	21.1	20.9	20.8	21.0	20.8	20.8	21.0	21.1	21.2	21.4	21.6	20.8	22.2	21.4	24
2	21.6	21.7	21.9	22.1	22.3	21.9	22.2	22.3	21.8	21.7	21.7	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.4	21.6	21.7	22.1	21.8	21.8	21.4	22.3	21.7	24
3	22.2	21.8	22.1	22.2	22.1	22.1	22.3	22.3	21.8	21.9	21.7	21.4	21.1	21.0	21.1	20.8	20.8	21.1	20.9	20.9	21.5	21.7	22.2	22.3	20.8	22.3	21.6	24
4	22.3	22.4	22.9	21.0	20.8	20.8	20.7	20.8	22.2	22.0	21.7	21.1	21.3	20.7	20.7	20.8	20.7	20.5	20.6	20.9	21.4	21.7	21.8	22.2	20.5	22.9	21.3	24
5	21.8	22.2	22.2	22.3	22.3	22.2	22.2	22.3	22.2	21.5	21.4	20.9	21.0	20.5	20.2	20.4	20.3	20.2	20.5	20.6	21.0	21.2	21.6	21.8	20.2	22.3	21.4	24
6	21.7	21.9	22.2	21.8	22.2	21.8	22.1	21.9	21.8	21.4	21.2	20.8	20.6	20.5	20.1	20.2	20.2	20.0	20.3	20.5	20.9	21.2	21.4	21.7	20.0	22.2	21.2	24
7	21.7	21.7	21.8	21.8	21.8	22.1	21.9	21.8	21.8	21.6	21.0	21.0	20.9	20.5	20.1	20.5	20.0	20.7	20.5	20.8	21.2	21.1	21.5	21.2	20.0	22.1	21.2	24
8	21.5	21.4	21.3	21.6	21.3	21.3	21.4	21.4	21.4	21.5	21.4	21.4	21.5	21.2	21.1	21.2	20.9	20.8	20.9	20.9	21.3	21.4	21.5	21.6	20.8	21.6	21.3	24
9	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.5	21.5	21.4	21.2	21.1	21.2	21.0	21.0	20.9	20.8	20.9	21.0	21.1	21.2	21.5	21.6	21.7	20.8	21.7	21.3	24
10	21.9	22.0	21.7	22.1	21.8	22.1	21.8	22.0	21.8	21.6	21.6	21.6	21.2	21.2	21.0	21.2	21.2	21.2	21.2	21.2	21.5	21.6	21.6	21.6	21.0	22.1	21.6	24
11	21.7	21.8	21.8	22.0	21.7	21.8	22.1	21.7	22.0	21.8	21.6	21.5	21.3	21.1	20.8	21.0	20.9	20.7	20.9	21.2	21.0	21.4	21.6	21.9	20.7	22.1	21.5	24
12	21.9	22.1	22.1	22.5	22.2	22.7	22.2	22.7	22.5	22.2	21.8	21.6	21.2	21.4	20.9	21.3	21.4	21.6	21.6	22.1	21.9	22.3	22.6	22.1	20.9	22.7	22.0	24
13	22.6	22.7	22.1	22.6	22.3	22.2	22.5	22.1	22.2	22.1	P	P	P	21.9	21.7	21.7	21.3	21.7	21.3	21.7	22.3	22.1	22.4	22.4	21.3	22.7	22.1	21
14	22.4	22.4	22.6	22.5	22.9	22.5	22.9	22.9	23.0	22.5	22.0	21.9	21.8	21.3	21.6	21.2	21.6	21.4	21.6	21.7	21.9	22.4	P	P	21.2	23.0	22.1	22
15	P	P	P	P	P	P	P	25.8	24.3	22.9	22.8	22.2	21.9	21.6	21.8	21.6	21.7	21.5	21.9	22.0	22.2	22.7	22.7	23.2	21.5	25.8	22.5	17
16	22.8	23.1	23.2	23.1	23.1	23.1	23.4	23.3	23.2	22.4	22.5	22.0	21.7	21.8	21.4	21.7	21.3	21.4	21.7	21.8	22.2	22.2	22.5	22.5	21.3	23.4	22.4	24
17	22.7	23.1	22.8	23.3	22.9	23.2	23.7	23.2	22.8	22.8	22.2	22.1	21.6	21.8	21.2	21.4	21.4	21.2	21.2	21.4	22.3	22.3	22.4	22.6	21.2	23.7	22.3	24
18	22.5	22.6	22.8	22.9	22.7	22.8	22.9	23.0	22.1	20.9	20.3	20.7	20.7	20.4	20.2	20.4	19.9	21.1	21.1	21.1	21.4	21.3	21.2	21.0	19.9	23.0	21.5	24
19	21.0	21.0	20.9	20.9	21.0	20.9	20.5	20.3	21.7	22.7	21.8	20.8	20.9	20.9	20.9	20.9	21.0	21.1	21.1	20.9	20.9	20.9	20.9	20.9	20.3	22.7	21.0	24
20	20.9	20.9	21.0	20.9	20.7	20.6	20.4	20.3	20.2	20.1	20.2	20.3	20.4	20.6	20.7	20.8	20.7	20.8	20.7	20.3	20.1	20.1	20.2	20.7	20.1	21.0	20.5	24
21	22.0	22.7	23.1	21.0	21.2	20.7	20.5	21.8	22.6	22.4	20.8	20.8	20.8	20.9	20.9	21.0	21.0	21.0	21.0	20.6	21.0	21.8	22.2	20.5	23.1	21.4	24	
22	22.4	22.4	22.4	22.2	22.1	22.0	23.5	22.7	22.7	23.5	21.9	21.1	20.9	20.7	20.7	20.6	20.6	20.8	21.0	20.9	20.8	20.9	20.5	20.8	20.5	23.5	21.6	24
23	21.8	22.3	22.5	22.7	22.7	22.9	23.1	23.3	22.8	21.2	21.3	21.0	20.9	20.7	20.7	20.5	20.6	21.0	21.1	21.1	20.9	21.0	20.7	20.5	20.5	23.3	21.6	24
24	21.7	22.3	22.7	23.0	23.2	23.5	21.1	20.8	20.4	20.4	20.5	20.8	21.1	20.8	20.7	20.7	20.6	20.6	20.7	20.9	21.0	21.0	21.2	20.4	23.5	21.3	24	
25	21.2	21.4	21.5	21.4	21.3	21.1	21.0	21.0	21.2	21.0	20.8	20.7	20.6	20.6	20.4	20.4	20.5	20.4	20.6	20.8	21.0	21.5	21.3	21.2	20.4	21.5	21.0	24
26	21.2	21.0	21.0	21.0	21.0	20.8	20.4	21.5	22.5	23.0	20.9	20.7	20.5	20.6	20.4	20.5	20.4	20.6	20.7	21.0	21.0	21.0	21.3	20.4	23.0	21.0	24	
27	21.1	21.2	21.0	21.0	20.9	20.9	20.9	20.8	20.8	21.0	20.9	20.7	20.6	20.5	20.5	20.5	20.5	20.4	20.5	20.6	21.0	21.0	21.4	21.4	20.4	21.4	20.8	24
28	21.3	21.1	21.0	21.0	20.9	20.9	21.2	20.8	20.6	21.1	20.8	20.8	20.7	20.6	20.5	20.5	20.5	20.5	20.4	20.6	20.6	21.0	21.1	21.2	20.4	21.3	20.8	24
29	21.3	21.0	21.0	21.0	21.1	20.7	20.6	21.8	22.9	22.3	20.8	20.7	20.7	20.6	20.6	20.6	20.5	20.4	20.4	20.6	20.9	21.2	21.2	21.3	20.4	22.9	21.0	24
30	21.2	21.2	21.0	21.0	21.1	21.4	21.2	21.2	21.3	21.1	21.1	20.9	20.8	20.6	20.6	20.6	20.5	20.7	20.9	20.9	21.0	21.2	21.2	21.2	20.5	21.4	21.0	24
HOURLY MAX	22.8	23.1	23.2	23.3	23.2	23.5	23.7	25.8	24.3	23.5	22.8	22.2	21.9	21.9	21.8	21.7	21.7	21.7	21.9	22.1	22.3	22.7	22.7	23.2				
HOURLY AVG	21.8	21.9	21.9	21.9	21.8	21.8	21.8	22.0	22.0	21.8	21.3	21.2	21.0	21.0	20.8	20.9	20.8	20.9	21.0	21.1	21.3	21.4	21.5	21.6				

STATUS FLAG CODES

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

24 HR AVERAGES September 2017



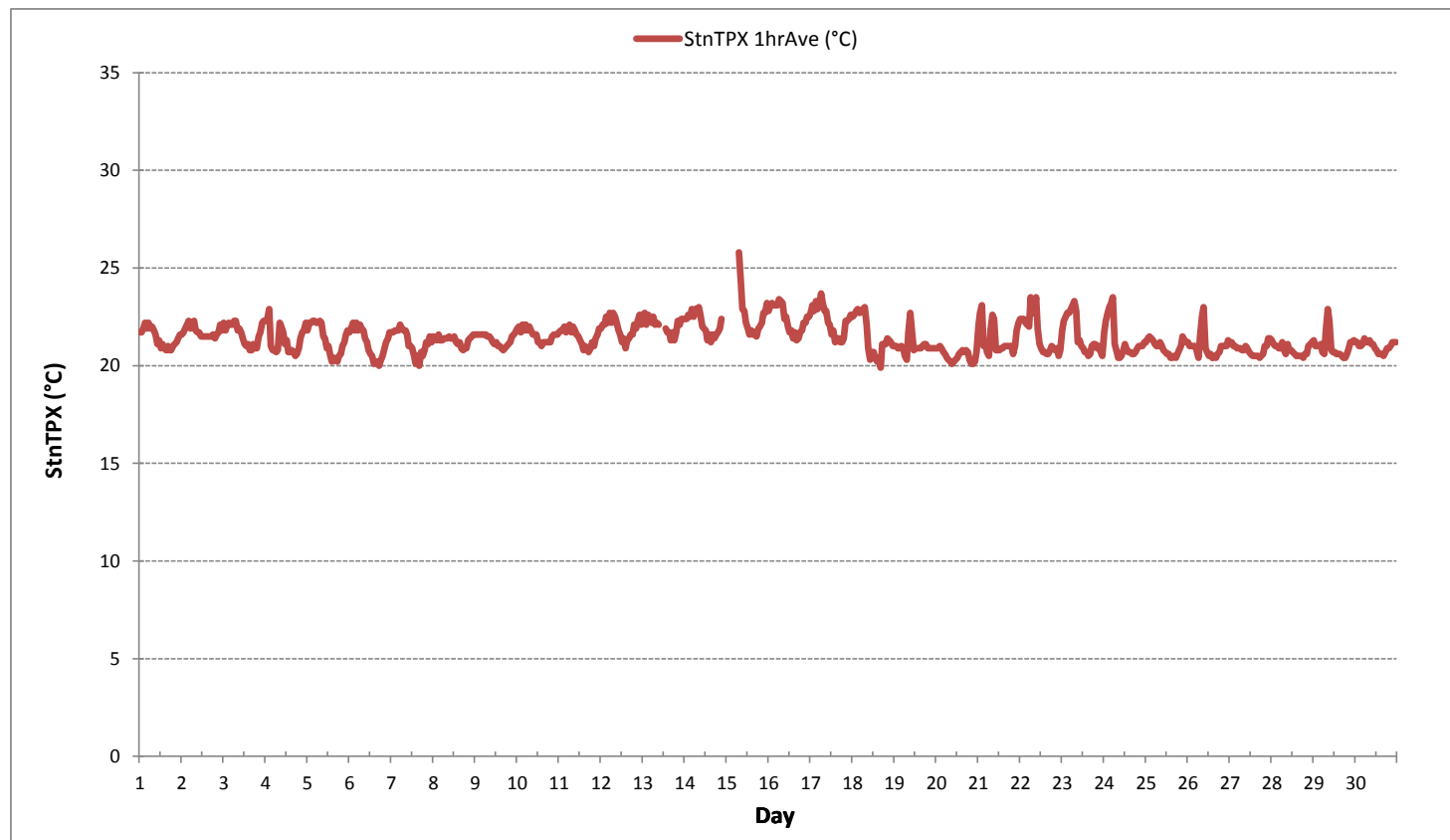
MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.9	°C	@ HOUR	16	ON DAY	18
MAXIMUM 1-HR AVERAGE:	25.8	°C	@ HOUR	7	ON DAY	15
MAXIMUM 24-HR AVERAGE:	22.5	°C			ON DAY	15

OPERATIONAL TIME: 708 hrs
AMD OPERATION UPTIME: 98.3 %

STANDARD DEVIATION:	0.8	MONTHLY AVERAGE:	21.4	°C
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STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

Thermo 43CSulphur Dioxide Analyzer Calibration

Date:	September 18, 2017	Barometer/B.P./units:	n/a	27.35	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	n/a	21.85	°C
Location/Station Name:	986	Weather Conditions:	Cloudy/Overcast		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	9:44	Performed By/Reviewer:	Raja Abid	Tom Bourque	
End Time 24 hr. (mst):	13:38	Cal Gas Expiry Date:	May 23, 2019		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		

Analyzer:	ID# or Serial Number:	43-C-62339-335	Range ppb:	500
	Last Calibration Date:	August 10, 2017	As Found C.F.:	1.021
	Previous C.F.:	1.000	New C.F.:	0.999

Calibration Standards:	Standard Calibration Points for Ranges
Low Flow Meter ID/Expiry Date: Definer Low 129069 expires February 5, 2018	
High Flow Meter ID/Expiry Date: Definer High 128686 expires February 5, 2018	
Calibrator ID/Expiry Date: API id# 690 expires March 17, 2018	
Cal Gas Cylinder I.D. #: LL 119513	
Cal Gas Conc. (ppm): 50.6	

Point	ppb
High	380
Mid	180
Low	90

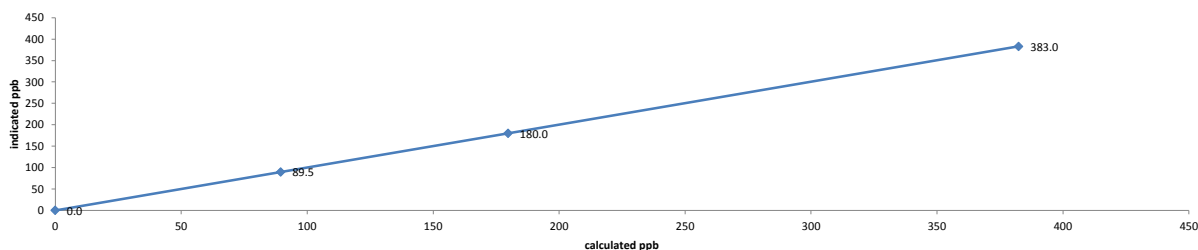
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	5751	0.00	5751	0.0	-0.5	n/a
as found high	5915	45.05	5960	382.5	374.0	1.021
adjusted zero	5751	0.00	5751	0.0	0.0	n/a
adjusted high	5915	45.05	5960	382.5	383.0	0.999
mid	5950	21.22	5971	179.8	180.0	0.999
low	5993	10.62	6003	89.5	89.5	1.000
calibrator zero	5751	0.00	5751	0.0	0.0	n/a
Average C.F. =						0.999

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)=	0.01%		± 3% F.S.
% change in C.F. from last cal=	-2.13%		± 10%

Thermo 43CSulphur Dioxide Analyzer Calibration



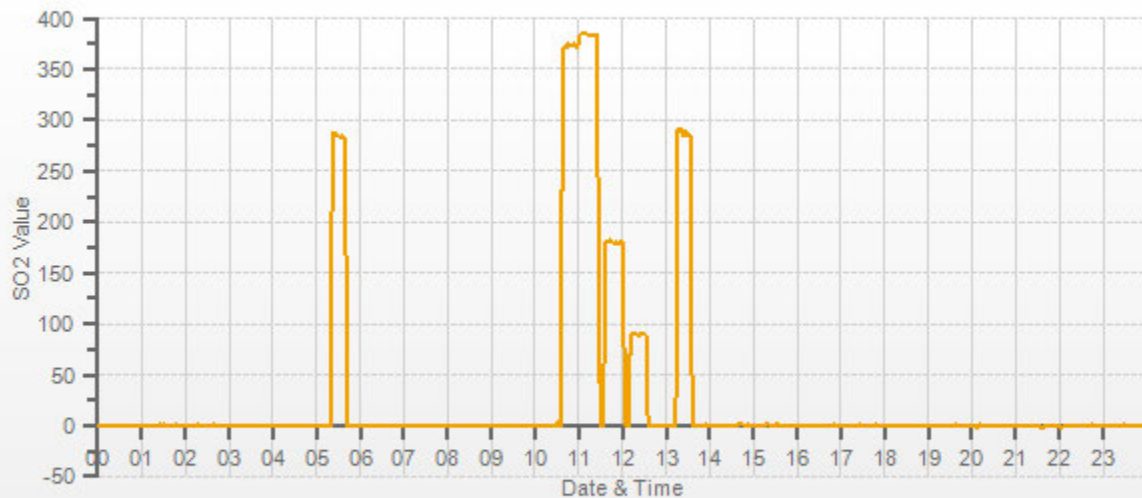
As found:		As left:	
Bkg:	75.3	Bkg:	76.8
Coef:	0.874	Coef:	0.893
Pmt:	-654	Pmt:	-654
0	850	0	850
Battery:	3.3	Battery:	3.2
Internal:	30.3	Internal:	30.2
Chamber:	45.6	Chamber:	45.6
Pressure:	445.2	Pressure:	445.4
Flow:	0.786	Flow:	0.787
Intensity:	37886	Intensity:	37717
Converter:	n/a	Converter:	n/a
Converter Set:	n/a	Converter Set:	n/a
Averaging Time:	120	Averaging Time:	120
Expected Value:	285.6	Expected Value:	284.9

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.

Station temperature recorded from data logger.
Barometric Pressure recorded from Environment Canada site.
Multiple flow measurements completed.

SO2[ppb] Station: PRAMP_986 Daily: 17/09/18 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	September 18, 2017	Barometer/B.P./units:	n/a	27.35	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	n/a	21.85	°C
Location/Station Name:	986b	Weather Conditions:	Cloudy/Overcast		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	12:57	Performed By/Reviewer:	Raja Abid	Tom Bourque	
End Time 24 hr. (mst):	16:36	Cal Gas Expiry Date:	December 1, 2018		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA CDN 101 s/n 516		

Analyzer:	ID# or Serial Number:	1152940011	Range ppb:	100
	Last Calibration Date:	August 10, 2017	As Found C.F.:	0.950
	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:	Definer Low 129069 expires February 5, 2018	Start/End Time 24 hr.:	13:18/13:29
High Flow Meter ID/Expiry Date:	Definer High 128686 expires February 5, 2018	SO2 Analyzer Range:	500
Calibrator ID/Expiry Date:	API id# 829 expires January 27, 2018	Target Concentration (ppb):	380
Cal Gas Cylinder I.D. #:	BLM 001927	As Found Zero:	0.0
Cal Gas Conc. (ppm):	10.3	Analyzer Response: (ppb):	0.0
		Zero Corrected Result (ppb):	0.0

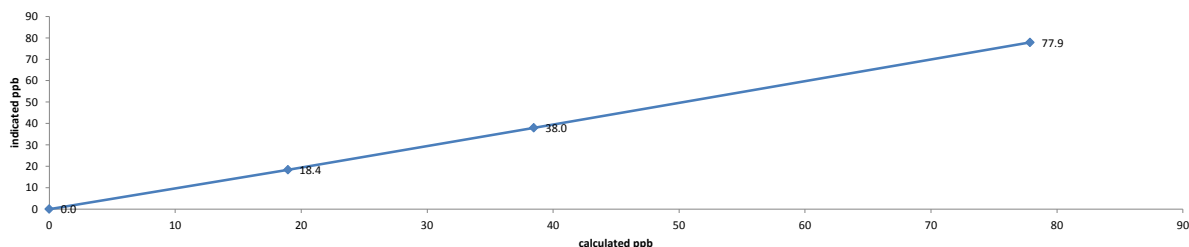
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7457	0.00	7457	0.0	0.0	n/a
as found high	7471	56.91	7528	77.9	82.0	0.950
adjusted zero	7457	0.00	7457	0.0	0.0	n/a
adjusted high	7471	56.91	7528	77.9	77.9	1.000
mid	7468	28.00	7496	38.5	38.0	1.012
low	7482	13.79	7496	18.9	18.4	1.030
calibrator zero	7457	0.00	7457	0.0	0.1	n/a
Average C.F. =						1.014

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	1.000	> or = 0.995
Slope =	0.998	0.95-1.05
b (Intercept as % of full scale) =	0.32%	± 3% F.S.
% change in C.F. from last cal =	4.95%	± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	1.84	Bkg:	1.74
Coef:	1.013	Coef:	0.958
Pmt:	-687.1	Pmt:	-686.4
Flash:	963	Flash:	965
Internal:	32.4	Internal:	32.4
Chamber:	45.0	Chamber:	45.0
Perm Oven Gas:	45.00	Perm Oven Gas:	45.00
Perm Oven Heater:	44.25	Perm Oven Heater:	44.24
Pressure:	645.9	Pressure:	646.2
Sample Flow:	0.462	Sample Flow:	0.462
Lamp Intensity:	92	Lamp Intensity:	92
Converter:	820	Converter:	820
Converter Set:	820	Converter Set:	820
Averaging Time:	120	Averaging Time:	120
Expected Value:	45.0	Expected Value:	45.4

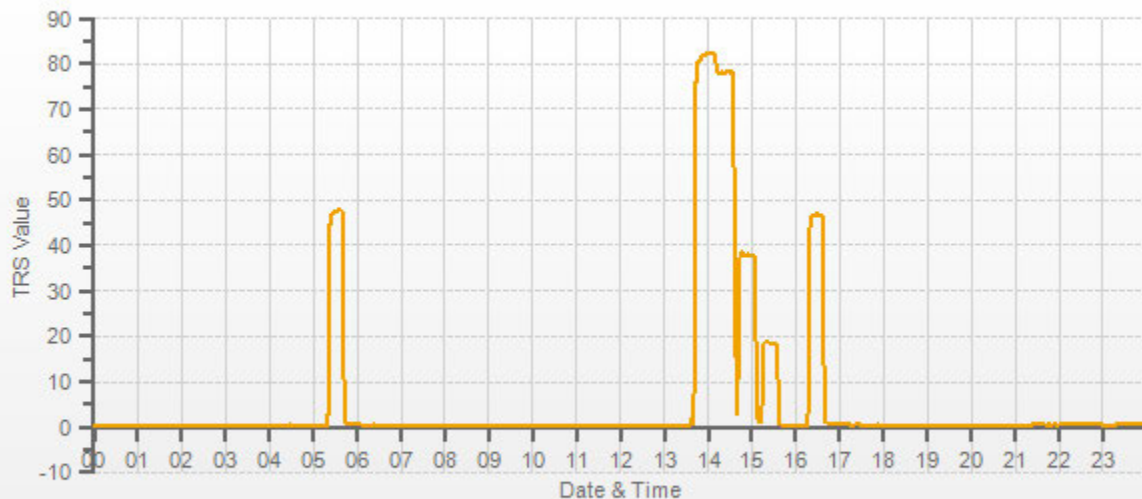
Comments:

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

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

Station temperature recorded from data logger.
Barometric Pressure recorded from Environment Canada site.
Multiple flow measurements completed.

TRS[ppb] Station: PRAMP_986 Daily: 17/09/18 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	September 18, 2017	Barometer/B.P./units:	n/a	27.35	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	n/a	21.85	°C
Location/Station Name:	986	Weather Conditions:	Cloudy/Overcast		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	9:44/13:32	Performed By/Reviewer:	Raja Abid	Tom Bourque	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	January 9, 2021		

Analyzer:		Correction Factors:		
ID# or Serial Number:	1022143392	Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow:	985.3	CH ₄ = 1.000	1.005	1.000
Last Calibration Date:	August 17, 2017	NMHC = 1.000	1.010	1.000
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC = 1.000	1.008	1.000

Calibration Standards:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Low Flow Meter ID/Expiry Date:	Definer Low 129069 expires February 5, 2018	Point	CH ₄	NMHC	THC
High Flow Meter ID/Expiry Date:	Definer High 128686 expires February 5, 2018	High	13.00	13.00	26.00
Calibrator ID/Expiry Date:	API id# 829 expires January 27, 2018	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL 19272	Low	3.00	3.00	6.00
CH ₄ Cylinder Conc.:	880.0 304.0 =C ₃ H ₈ Cylinder Conc.				
CH ₄ expressed as C ₃ H ₈ :	836.0 1716.0 =total CH ₄ equivalent				

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015										Correction Factors:		
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
Point	Diluent	Cal Gas	Total Flow									
as found zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2949	50.89	3000	14.93	14.18	29.11	14.85	14.04	28.87	1.005	1.010	1.008
adjusted zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2949	50.89	3000	14.93	14.18	29.11	14.93	14.18	29.11	1.000	1.000	1.000
mid	2971	26.07	2997	7.66	7.27	14.93	7.74	7.33	15.06	0.989	0.992	0.991
low	3001	13.08	3015	3.82	3.63	7.45	3.85	3.64	7.46	0.992	0.997	0.998
calibrator zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F.=										0.994	0.996	0.997

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)=	0.14%	0.08%	0.08%	± 3% F.S.		
% change in C.F. from last cal=	-0.53%	-1.02%	-0.84%	± 10%		

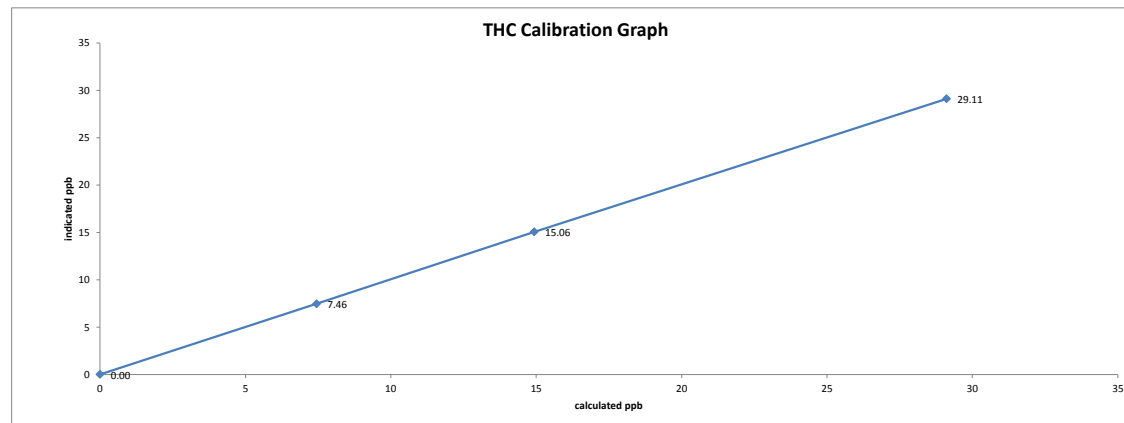
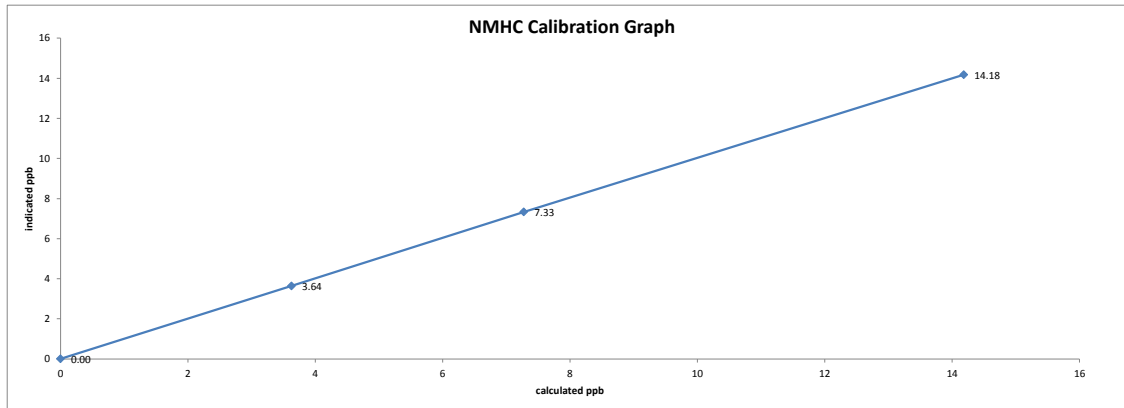
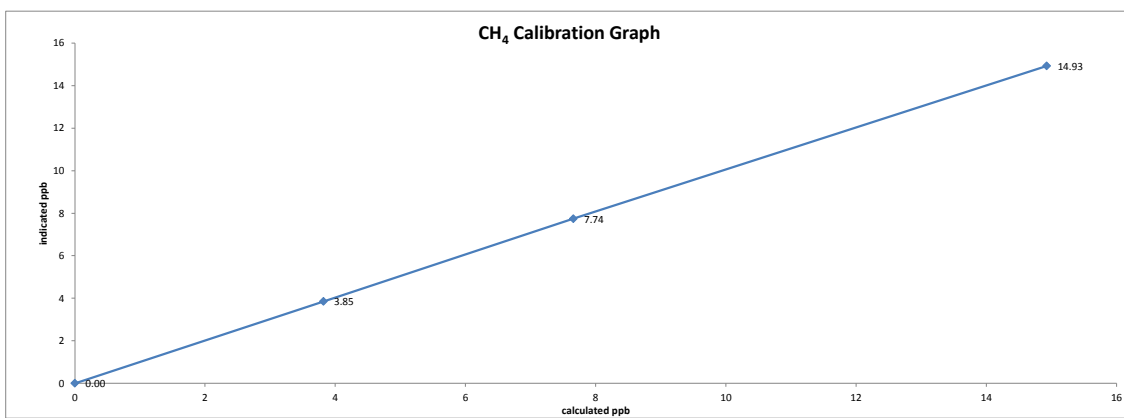
As Left Instrument Diagnostics:										Expected Values:	
Interface Board Voltages:	Bias Supply:	-311.8	Calibration History cnt'd:	NM Peak Area:	n/a						
Temperatures:	Detector Oven:	175.0	Crucial Settings:	Methane Start:	n/a						
	Filter:	175.0		Methane End:	n/a						
	Column Oven:	74.9		Backflush:	n/a						
	Internal:	37.5		NMHV Start:	n/a						
Cylinder Pressures/reg.:	Carrier:	800 50	Run History>1:	NMHC End:	n/a						
	Fuel:	750 50		Date:	18Sep17						
	Span Gas:	1500 28		Time:	10:14						
	Zero Air Generator:	46		CH ₄ PK HT:	0						
Internal Pressures:	Carrier:	31.4		CH ₄ RT:	12.4						
	Fuel:	40.5		CH ₄ Baseline:	1591						
	Air:	28.9		CH ₄ LOD:	18						
FID Status:	Status:	LIT		CH ₄ SD:	6						
	Counts:	19971		CH ₄ CONC:	0.00						
	Flame:	321.7		NM PK HT:	0						
	Det Base:	175.0		NM Peak Area:	0						
Flame and Power Stats:	Last Power On:	15Sep2017@7:01		NM CONC:	0.00						
	Flameouts:	1		NM Base Start:	1587						
	Det Oven at Start:	19.1		NM Base End:	1585						
	Col Oven at Start:	20.0		NM LOD:	9						
Calibration History:	Time:	n/a		NM Start IDX:	33						
	Type:	n/a		NM End IDX:	64						
	Status:	n/a		NM Max Slope:	3.7e-01						
	Check/Adjust:	n/a		NM Min Slope:	-6.5e-01						
	CH ₄ Span Conc:	n/a		NM PT Count:	0						
	CH ₄ SP Ratio:	n/a		Previous CH ₄ :	8.79						
	CH ₄ RT:	n/a		Previous NMHC:	10.13						
	CH ₄ PK IDX:	n/a		Previous THC:	18.92						
	CH ₄ PK HT:	n/a		New CH ₄ :	8.86						
	NM Span Conc:	n/a		New NMHC:	10.19						
	NM SP Ratio:	n/a		New THC:	19.05						

Comments:											
The analyzer sample inlet filter was changed.											
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.											
The analyzer cooling fan filter(s) were cleaned.											
The manifold blower was found to be working normally.											

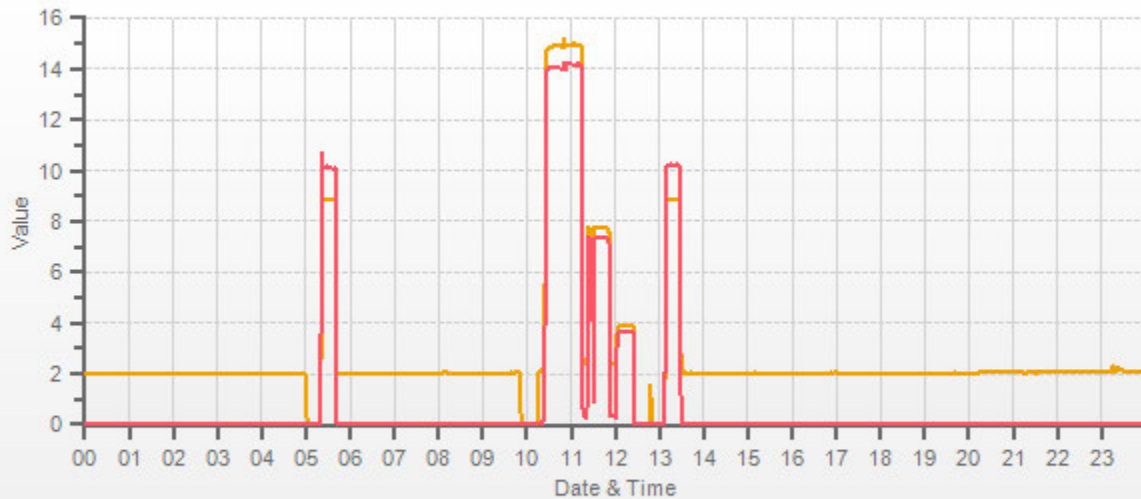
Station temperature recorded from data logger.11:32 Mid point started again
Barometric Pressure recorded from Environment Canada site.
Multiple flow measurements completed.

Date: September 18, 2017
Company/Airshed: PRAMP
Location/Station Name: 986

Start/End Time 24 hr. (mst): 9:44/13:32
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution



Station: PRAMP_986 Daily: 17/09/18 Type: AVG 1 Min. [1 Min.]



— 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.

CALIBRATORS

Company <u>Maxxam</u>		Operator: <u>Mike</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Bios Defender 530</u>
Serial Number	<u>690</u>	Serial Number	<u>HI148944 Lo 152019</u>
Last Verification Date	<u>March 30, 2016\</u>	Temperature (°C)	<u>23.3</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>704.3mmHg</u>
NO [PPM]	<u>49.0 NOx [PPM]</u>		
Expiry Date	<u>December 8, 2019</u>		

Dilution Flow (sccm)			
Pt. #1	<u>4898</u>	Pt. #2	<u>4942</u>
Pt. #3	<u>4953</u>		
Gas Flow (sccm)			
Pt. #1	<u>79.2</u>	Pt. #2	<u>38.6</u>
Pt. #3	<u>19.3</u>		

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4977	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	Limit ± 10%	
4977	79.2	0.7792	0.7792	0.7841	0.0012	0.7854	1%	1%
4981	38.6	0.3797	0.3797	0.3813	0.0006	0.3819	0%	1%
492	19.3	0.1902	0.1902	0.1927	0.0002	0.1929	1%	1%
Absolute Average Percent Difference							1%	1%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO		LIMITS		NOx			
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000		
m (Slope)=	1.0056	0.90-1.10		m (Slope)=	1.0073		
b (Intercept % of FS)=	0.0357	± 3% F.S.		b (Intercept % of FS)=	0.0304		

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4977	0.000	0.0000	0.7928	0.0014	0.7941	NO ₂	% Diff. Limit
4977	0.500	0.5448	0.2480	0.5391	0.7871	-1%	± 10%
4977	0.250	0.2862	0.5066	0.2861	0.7926	-1%	± 10%
4977	0.100	0.1221	0.6707	0.1193	0.7914	-3%	± 10%
Absolute Average Percent Difference						2%	± 10%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO₂		LIMITS					
Correlation=	1.0000	≥ 0.995					
m (Slope)=	0.9894	0.90-1.10					
b (Intercept % of FS)=	0.0719	± 3% F.S.					

AENV Standards		NOx Analyzer	
Audit Calibrator			
Make/Model	<u>Thermo 146i</u>	Make/Model	<u>Thermo 42i</u>
Serial/AMU Number	<u>1809</u>	Serial/AMU Number	<u>1868</u>
SRM Gas Cylinder No.	<u>CAL018140</u>	Last Calibration Date	<u>March 15, 2017</u>
Cylinder Conc. (ppm)	<u>48.79</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>March 28, 2019</u>

COMMENTS: Gas has ~50ppm SO2

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: March 17, 2017
Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Chris</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Definer 530</u>
Serial Number	<u>829</u>	Serial Number	<u>H-148944, L-152019</u>
Last Verification Date	<u>February 3, 2016</u>	Temperature (°C)	<u>23.5</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>707.1 mmHg</u>
NO [PPM]	<u>49.0</u> NOx [PPM] <u>49.0</u>		
Expiry Date	<u>December 8, 2019</u>		

Dilution Flow (sccm)			
Pt. #1 <u>4846</u>	Pt. #2 <u>4888</u>	Pt. #3 <u>4908</u>	
Gas Flow (sccm)			
Pt. #1 <u>80.6</u>	Pt. #2 <u>38.9</u>	Pt. #3 <u>18.4</u>	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
	0.0	0.0000	0.0000	0.0000	0.0001	0.0001	Limit ± 10%	
4927	80.6	0.8016	0.8016	0.8021	0.0015	0.8036	0.1%	0.2%
4927	38.9	0.3867	0.3867	0.3862	0.0001	0.3863	-0.1%	-0.1%
4927	18.4	0.1830	0.1830	0.1820	0.0004	0.1824	-0.5%	-0.4%
Absolute Average Percent Difference							0.2%	0.1%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO		LIMITS		NOx			
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000		
m (Slope)=	1.0010	0.90-1.10		m (Slope)=	1.0027		
b (Intercept % of FS)=	-0.0604	± 3% F.S.		b (Intercept % of FS)=	-0.0652		

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4927	0	0.0000	0.8016	0.0010	0.8020	NO ₂	% Diff. Limit
4927	500	0.5450	0.2566	0.5421	0.7987	-0.7%	± 10%
4927	250	0.2797	0.5219	0.2797	0.8016	-0.4%	± 10%
4927	80	0.0954	0.7062	0.0958	0.8026	-0.6%	± 10%
Absolute Average Percent Difference						1%	± 10%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO ₂		LIMITS					
Correlation=	1.0000	≥ 0.995					
m (Slope)=	0.9931	0.90-1.10					
b (Intercept % of FS)=	0.1220	± 3% F.S.					

AENV Standards		NO_x Analyzer	
Audit Calibrator			
Make/Model	<u>Thermo 146i</u>	Make/Model	<u>Thermo 42i</u>
Serial/AMU Number	<u>AMU1809</u>	Serial/AMU Number	<u>AMU 1868</u>
SRM Gas Cylinder No.	<u>CAL018140</u>	Last Calibration Date	<u>January 25, 2017</u>
Cylinder Conc. (ppm)	<u>48.79</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>March 25, 2019</u>

COMMENTS: _____

Auditor: Shana Beaton Date: January 27, 2017

Operator Signature: [Signature] Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-086CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: LL119513 Concentration PPM: 50.6 Tolerance(%) 1 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model: Teco 146i
Serial Number: AMU 1809
Last Verification Date: June 17, 2016
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
Last Calibration: Date: June 17/16 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000			
4976	82.3	0.828	0.01654	60.462	50.1
4985	40.8	0.411	0.00818	122.181	50.2
4965	20.2	0.203	0.00407	245.792	49.9
Average Cylinder Concentration:					50.1

Previous Stated Concentration PPM: 50.6

Percent variance from Stated: 1.1

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐ COMMENTS: _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☒ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark
Operator Signature: [Signature]

Date: June 17, 2016
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-109CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: BLM001927 Concentration PPM: 10.3 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: February 2, 2016
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015584

Flow Measurement Device:

Make/Model: Bios DC-2
Serial Number: Bios D
Temp. °C: 24.5
B.P. 702mmHg

Reference Analyzer:

Make/Model: Thermo 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 15.3 Span: 1.126 Range: 0.1
Last Calibration: Date: 1-Feb-16 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5025	0.0	0.000			
5058	37.84	0.078	0.00748	133.668	10.4
5059	17.85	0.036	0.00353	283.417	10.3
5031	9.15	0.019	0.00182	549.836	10.2
Average Cylinder Concentration:					10.3

Previous Stated Concentration PPM: 10.3

Percent variance from Stated: 0.1

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: _____
< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: February 2, 2016
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-031CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: LL19272 Conc CH₄ (PPM) 880/304 Tolerance (%) 2 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1691
Last Verification Date May 21, 2015
Gas Type CH₄ Conc. 999.2
Cylinder Number D751932
Gas Type C₃H₈ Conc. 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1650
Temp. °C 24.0 C
B.P. 703 mmhg

Reference Analyzer:

Make/Model Teco 55C Serial/AMU Number: 1643
Instrument Settings Zero: N/A Span: N/A Range: 20
Last Calibration: Date: May 21/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
2600	0.0	0.00	0.00				
2569	51.5	17.77	16.76	0.02005	49.883	886	304
3549	22.3	5.56	5.27	0.00628	159.148	885	305
3523	10.4	2.63	2.49	0.00295	338.750	891	307
Average Cylinder Concentration:						887	305

CH₄ **C₃H₈**
Previous Stated Concentration PPM: 880 304
Percent variance from Stated: 0.8 0.4

Cylinder gas tolerances based on CH₄ only

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: _____
< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark Date: May 21, 2015
Operator Signature: *Al Clark* Location: McIntyre Center Edmonton

APPENDIX III
REPORT CERTIFICATION FORM

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
YES	NA
Company Name (if applicable)	Industrial Operation Name (if applicable)
Peace River Area Monitoring Program Committee	Three Creeks 986b Station
Name of the Representative of the Person Responsible (Last, First, Middle)	Position / Title of the Representative of the Person Responsible
Wunmi Adekanmbi	Project Manager, Customer Service, Air Services
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
☐ Yes ☒ No	
Name of External Person Certifying the Report (Last, First, Middle)	Position / Title of External Person Certifying the Report
NA	NA
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
NA	NA

I certify that I have reviewed and verified the submitted report. I also certify that the report presented with this certification form is complete, accurate and representative of the monitoring results and timeframe.



Signature of the Representative of the Person
Responsible / External Person Certifying the Report

October 19, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2017-09-67-C

Site: Three Creeks 986b Station

Contact: Karla Reesor

Level 0 Preliminary Verification

Carla Reesor

Date October 13, 2017

Level 1 Primary Validation

Carla Reesor

Date October 13, 2017

Level 2 Final Validation

Carla Reesor

Date October 19, 2017

Level 3 Independent Data Review

Cheri Sinclair

Date October 19, 2017

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.