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

JOB #: 8449-2017-10-67-C

October 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **November 17, 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 blue ink, appearing to read "Cheri Sinclair".

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

SUMMARY

In October 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: Due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7, five hours of downtime were recorded on all parameters. One more hour of downtime was recorded at hour 03:00, for THC/CH₄/NMHC, as the analyzer was recovering from the power failure.

SO₂: Two hours of downtime were recorded between October 2 and October 4, due to additional quality checks performed to assess span response.

Wind System: The wind system recorded anomalous data between October 25, hour 08:00 and October 26, hour 09:00, likely due to prevalent weather conditions at the time. The data was excluded, resulting in twenty-six hours of downtime.

The summary of results is presented on the following pages.

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

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 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	2	7	5.3	NW	1	2	99.1
TRS (ppb)	-	-	-	-	0.29	0.70	10	6	0.8	NNW	0.38	17	99.3
THC (ppm)	-	-	-	-	1.93	2.36	4	6	3.1	ESE	2.05	2	99.1
CH ₄ (ppm)	-	-	-	-	1.93	2.36	4	6	3.1	ESE	2.05	2	99.1
NMHC (ppm)	-	-	-	-	0.00	0.02	24	22	3.0	ENE	0.00	1	99.1
RELATIVE HUMIDITY (%)	-	-	-	-	72	100	25	2	9.9	ENE	92	25	99.3
BAROMETRIC PRESSURE (millibar)	-	-	-	-	939	959	2	9	7.5	NNW	957	2	99.3
AMBIENT TEMPERATURE (°C)	-	-	-	-	3.6	21.5	5	15	12.4	WSW	13.5	5	99.3
STATION TEMPERATURE (°C)	-	-	-	-	22.1	24.3	29	23	4.0	S	23.3	31	99.3
VECTOR WS (kph)	-	-	-	-	3.4	25.9	28	9	-	NW	16.7	28	95.8
VECTOR WD (sec)	-	-	-	-	258 (WSW)	-	-	-	-	-	-	-	95.8

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	October

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO ₂	99.1	0.001 ppm		0	0.001 ppm	0
TRS	99.3	0.001 ppm		-	0.000 ppm	-
THC	99.1	2.36 ppm		-	2.05 ppm	-
CH ₄	99.1	2.36 ppm		-	2.05 ppm	-
NMHC	99.1	0.02 ppm		-	0.00 ppm	-
RH	99.3	100 %		-	92 %	-
BP	99.3	959 mb		-	957 mb	-
Ambient TPX	99.3	21.5 °C		-	13.5 °C	-
Station TPX	99.3	24.3 °C		-	23.3 °C	-
Wind Speed	95.8	25.9 kph		-	16.7 kph	-
Wind Direction	95.8	-		-	-	-

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).

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

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period was 99.1%, equivalent to seven hours of downtime.
- An additional zero/span check was conducted on October 2 to assess span response after a drift towards the upper acceptance limit; the result was valid. The analyzer then spanned above the upper acceptance limit on October 3, prompting an immediate site visit where the routine monthly calibration was successfully completed and the perm tube was replaced. A repeat span check was performed on October 4 to provide a reference for updating the expected span value. Two hours of downtime were incurred due to the additional quality checks.
- Following the stabilization of the newly-installed perm tube, the expected span value was adjusted on October 7.
- Due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7, five hours of downtime were recorded.
- One instance of maximum instantaneous data was discarded on October 6 at hour 11:00, due to a brief power outage.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 99.3%, equivalent to five hours of downtime. These were incurred due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7.
- The routine monthly calibration was performed on October 3.
- One instance of maximum instantaneous data was discarded on October 6 at hour 11:00, due to a brief power outage.

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

- Operational time, for the monitoring period was 99.1%, equivalent to seven hours of downtime.
- Due to a power failure and the subsequent recovery period that occurred from hour 22:00 on October 6, to hour 03:00 on October 7, six hours of downtime were recorded.
- The routine monthly calibration was performed on October 4.
- The carrier gas was changed out on October 16. As a quality assessment, a zero/span check was triggered after the replacement. One hour of downtime was recorded due to the additional quality check.
- One instance of maximum instantaneous data was discarded on October 6 at hour 11:00, due to a brief power outage.
- Four instances of maximum instantaneous data, occurring between October 19 and October 27, were lost as the data logger yielded an "offscan" error.
- 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 95.8%, equivalent to thirty-one hours of downtime.
- Due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7, five hours of downtime were recorded.
- The wind system recorded anomalous data between October 25, hour 08:00 and October 26, hour 09:00, likely due to prevalent weather conditions at the time. The data was excluded, resulting in twenty-six hours of downtime.
- One instance of maximum instantaneous data was discarded on October 6 at hour 11:00, due to a brief power outage.
- 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 99.3%, equivalent to five hours of downtime. These were incurred due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7.

BAROMETRIC PRESSURE (BP)

- Operational time, for the monitoring period was 99.3%, equivalent to five hours of downtime. These were incurred due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time, for the monitoring period was 99.3%, equivalent to five hours of downtime. These were incurred due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7.

STATION TEMPERATURE (StnTPX)

- Operational time, for the monitoring period was 99.3%, equivalent to five hours of downtime. These were incurred due to a power failure that occurred from hour 22:00 on October 6, to hour 02:00 on October 7.

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

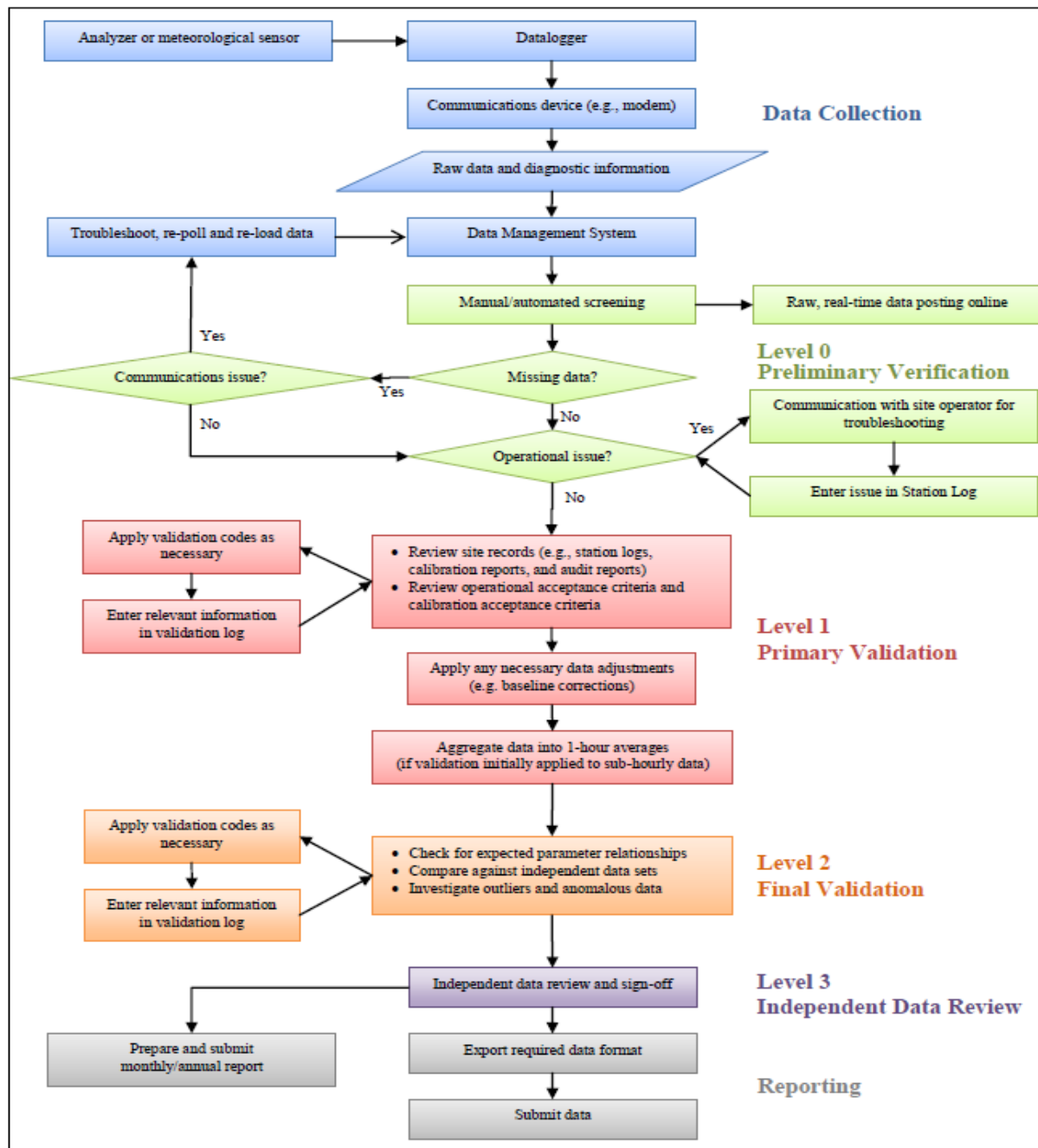
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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

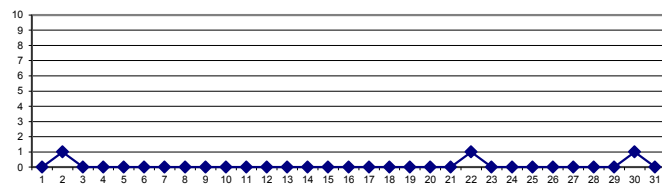
SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

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	S1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	23	
3	1	0	1	1	1	S	1	0	1	0	1	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	1	0	24
4	0	0	0	0	0	S	0	0	0	0	0	0	0	S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
5	0	0	0	0	0	0	0	S	1	1	1	1	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	0	0	0	0	22
7	P	P	P	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	21
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	0	0	0	0	0	0	0	0	0	0	0	0	0	24
10	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	24	
11	1	0	0	1	1	S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
14	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
15	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
16	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
17	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
19	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	0	24
20	0	0	0	0	0	S	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	24
23	1	1	1	1	1	S	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24
24	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
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	0	0	0	0	0	0	0	0	0	24
27	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
28	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
29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	24	
30	0	1	1	0	1	S	0	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	24
31	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	24	
HOURLY MAX	1	1	1	1	1	NA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	24	
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	0	0	0	0	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

24 HR AVERAGES October 2017



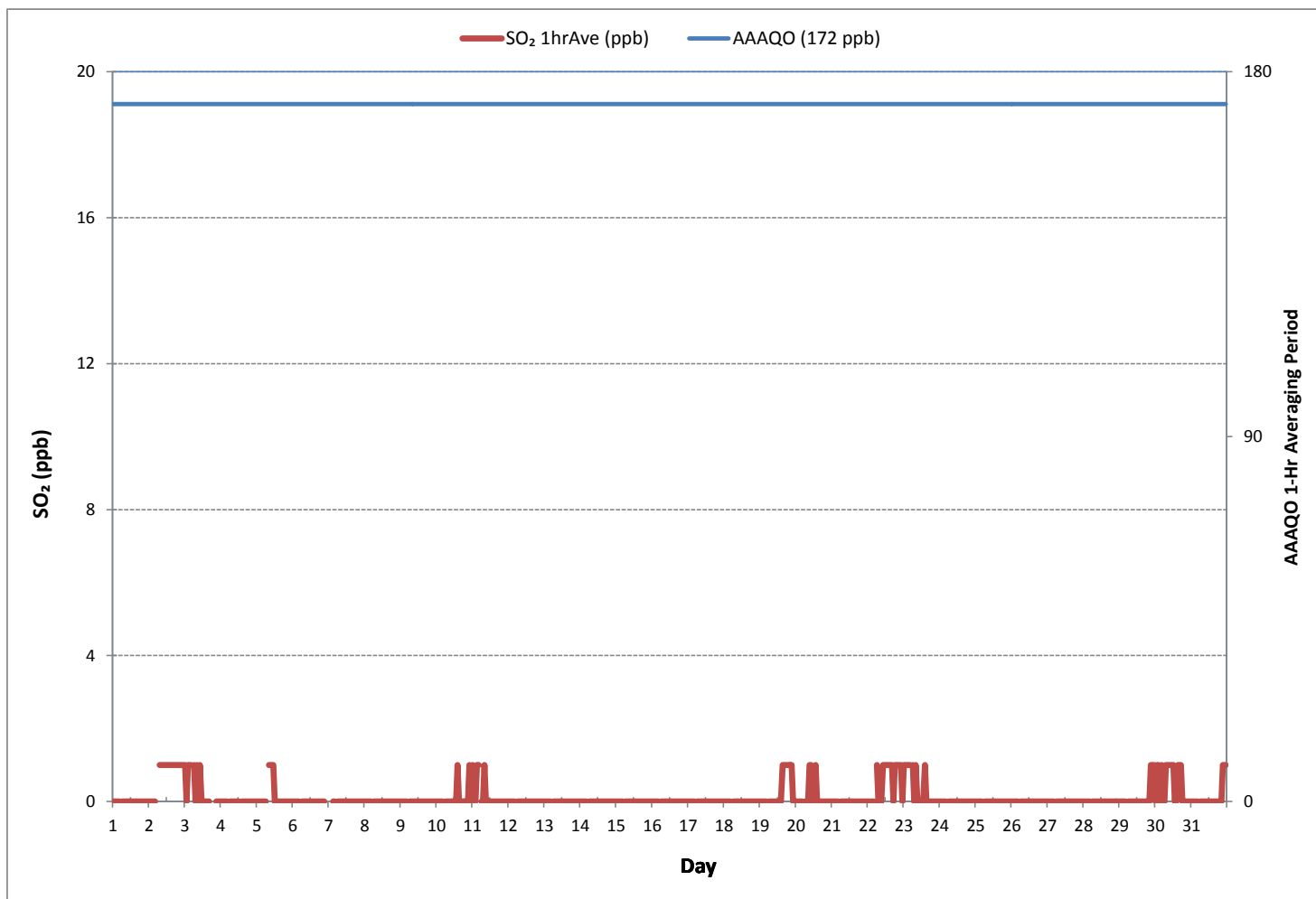
OBJECTIVE LIMIT:

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:	83
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 7 ON DAY 2
MAXIMUM 24-HR AVERAGE:	1 ppb ON DAY 2
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	737 hrs
AMD OPERATION UPTIME:	99.1 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - October 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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	
2	1	1	1	1	1	S	S1	S1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	22	
3	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	24	
4	1	1	1	1	1	S	1	1	1	1	1	1	1	S1	1	2	1	1	1	1	1	1	1	1	1	1	2	23	
5	1	1	1	1	1	1	1	S	1	2	1	2	1	1	1	1	2	0	1	1	1	1	1	1	1	0	2	24	
6	0	1	1	1	1	S	1	1	1	1	1	P	1	0	1	1	1	1	1	1	1	1	P	P	0	1	1	21	
7	P	P	P	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	21	
8	0	1	1	0	1	S	0	1	1	0	1	1	0	0	0	1	1	1	1	0	1	0	1	0	0	0	1	1	24
9	0	1	1	1	1	S	1	1	0	1	0	1	1	2	0	0	0	0	0	1	1	1	1	1	1	0	2	1	24
10	0	0	1	1	1	S	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	24
11	1	0	0	1	0	S	0	1	1	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	1	0	24	
12	0	0	1	0	0	S	0	0	1	0	0	0	0	1	0	1	0	0	1	1	1	0	0	1	0	1	0	24	
13	0	1	0	1	0	S	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	24	
14	0	1	0	0	0	S	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	24
15	0	1	0	1	0	S	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	24
16	1	0	1	1	0	S	0	0	0	1	1	0	1	0	1	1	1	0	1	0	0	0	0	1	0	1	0	24	
17	1	0	0	0	0	S	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	24
18	0	0	0	1	1	S	1	0	0	1	1	1	0	1	1	1	1	1	0	0	1	0	1	0	0	1	1	24	
19	0	1	0	0	0	S	1	1	1	0	1	1	1	0	1	1	1	1	1	0	1	1	0	1	0	1	1	24	
20	0	1	0	1	0	S	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	0	1	1	24	
21	1	0	0	0	0	S	1	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24
22	0	0	0	1	0	S	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	1	24
23	1	1	1	0	1	S	1	0	1	1	1	1	1	1	1	1	0	2	1	1	0	0	1	1	0	2	1	24	
24	0	0	1	0	0	S	1	1	1	1	1	0	0	1	0	0	1	1	0	0	1	1	0	0	0	0	1	0	24
25	0	0	1	0	0	S	0	0	1	1	0	1	0	0	0	1	0	0	1	0	1	1	1	0	0	1	0	24	
26	0	0	0	0	0	S	0	0	1	0	1	1	1	1	1	1	1	1	0	0	1	0	1	1	0	1	1	24	
27	0	1	0	1	1	S	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	24	
28	1	1	1	1	1	S	1	0	1	1	1	1	1	1	0	1	0	1	0	1	1	1	1	0	0	0	1	1	24
29	0	0	0	1	1	S	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	24	
30	0	1	1	0	0	S	0	1	1	1	1	0	1	0	1	1	1	0	0	1	0	1	0	1	0	1	1	24	
31	1	1	0	1	0	S	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	1	1	0	1	0	1	0	24
HOURLY MAX	1	1	1	1	1	NA	1	1	1	2	1	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1		
HOURLY AVG	0	1	1	1	0	NA	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

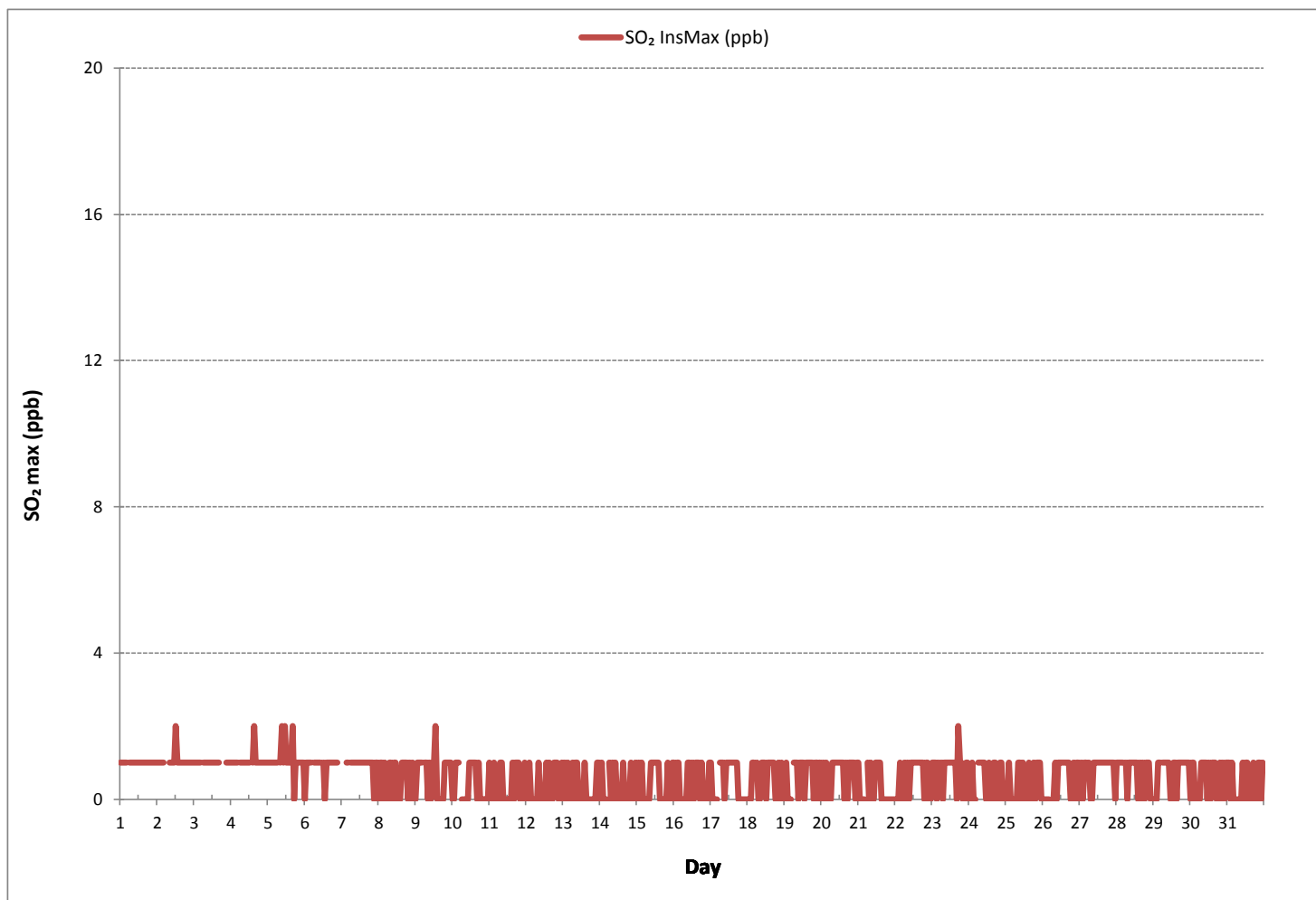
STATUS FLAG CODES

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:	436
MAXIMUM INSTANTANEOUS VALUE:	2 ppb @ HOUR 12 ON DAY 2
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	1
OPERATIONAL TIME:	735 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



Wind: PRAMP_986
Poll.: PRAMP_986-SO₂[ppb]
Monthly: 17/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

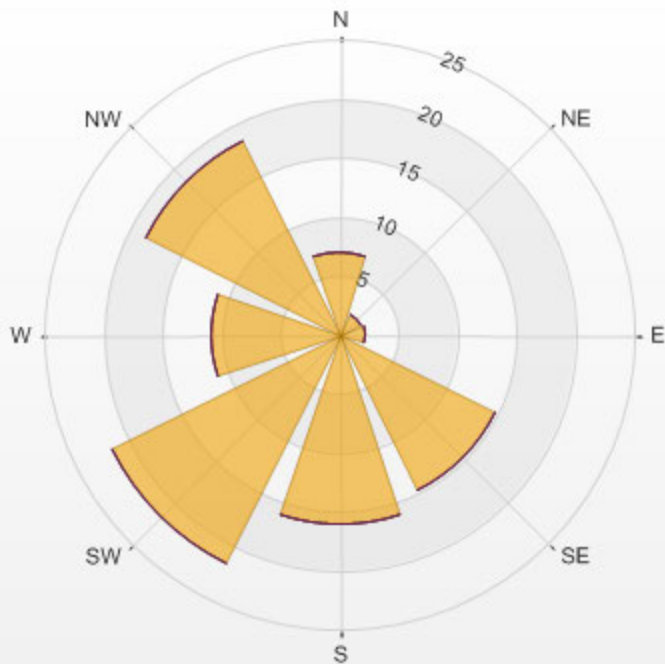
Calm: 6.98%

Calm Avg: 0.10 [ppb]

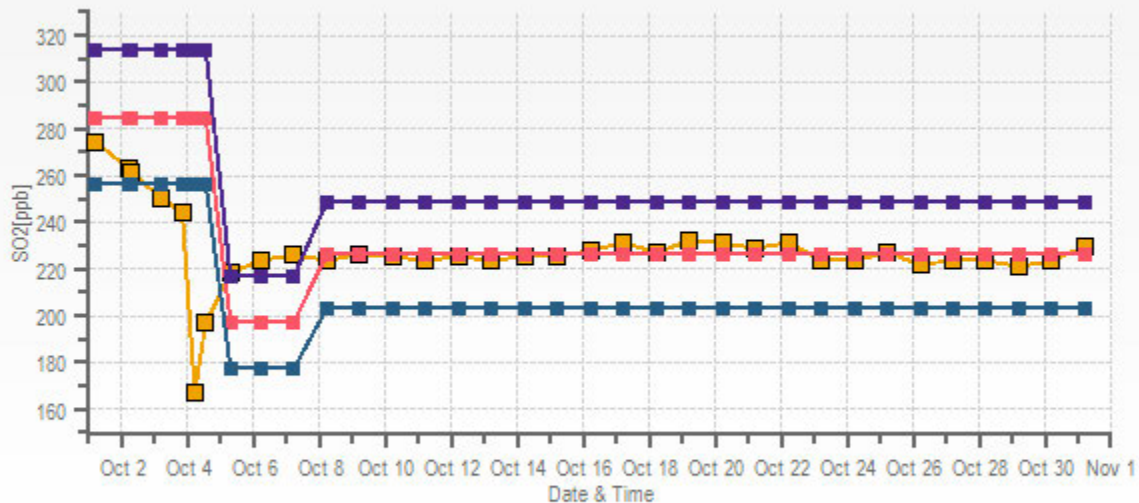
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	7.0	0.0	0.0	0.0	0.0	7.0
NE	2.0	0.0	0.0	0.0	0.0	2.0
E	2.3	0.0	0.0	0.0	0.0	2.3
SE	14.7	0.0	0.0	0.0	0.0	14.7
S	16.1	0.0	0.0	0.0	0.0	16.1
SW	21.7	0.0	0.0	0.0	0.0	21.7
W	11.0	0.0	0.0	0.0	0.0	11.0
NW	18.4	0.0	0.0	0.0	0.0	18.4
Summary	93.0	0.0	0.0	0.0	0.0	93.0

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

PRAMP_986 Poll.: PRAMP_986-SO2[ppb] 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 6.98% Calm Poll Avg: 0.10[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 17/10 Type: Span



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

TOTAL REDUCED SULPHUR

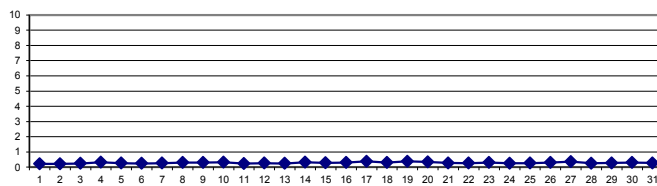
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.22	0.23	0.22	0.23	0.22	S	0.25	0.22	0.22	0.22	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.22	0.21	0.21	0.20	0.21	0.20	0.25	0.22	24
2	0.20	0.18	0.20	0.18	0.19	S	0.25	0.21	0.21	0.22	0.21	0.20	0.21	0.20	0.19	0.21	0.21	0.21	0.23	0.29	0.27	0.27	0.25	0.25	0.18	0.29	0.22	24
3	0.27	0.24	0.26	0.28	0.26	S	0.27	0.23	0.23	0.21	0.20	0.19	0.19	0.18	0.19	0.19	0.18	C	C	C	C	0.38	0.27	0.33	0.18	0.38	0.24	24
4	0.35	0.31	0.34	0.38	0.42	S	0.51	0.43	0.43	0.39	0.28	0.27	0.28	0.27	0.24	0.24	0.23	0.22	0.26	0.36	0.28	0.26	0.29	0.28	0.22	0.51	0.32	24
5	0.29	0.30	0.29	0.26	0.28	S	0.34	0.33	0.41	0.36	0.32	0.29	0.24	0.24	0.20	0.22	0.20	0.21	0.19	0.19	0.23	0.21	0.21	0.23	0.19	0.41	0.26	24
6	0.24	0.23	0.23	0.25	0.24	S	0.26	0.22	0.24	0.23	0.24	0.25	0.24	0.24	0.24	0.23	0.22	0.23	0.24	0.24	0.25	0.26	P	P	0.22	0.26	0.24	22
7	P	P	P	0.37	0.29	S	0.34	0.31	0.31	0.30	0.30	0.29	0.29	0.26	0.26	0.23	0.22	0.20	0.20	0.22	0.22	0.21	0.21	0.24	0.20	0.37	0.26	21
8	0.23	0.23	0.24	0.24	0.24	S	0.28	0.25	0.25	0.24	0.26	0.24	0.24	0.25	0.25	0.22	0.24	0.42	0.55	0.43	0.44	0.33	0.33	0.41	0.22	0.55	0.30	24
9	0.44	0.44	0.42	0.35	0.33	S	0.31	0.29	0.31	0.30	0.28	0.23	0.23	0.23	0.22	0.27	0.27	0.22	0.24	0.27	0.29	0.28	0.41	0.61	0.22	0.61	0.31	24
10	0.50	0.50	0.52	0.54	0.55	S	0.70	0.28	0.25	0.26	0.26	0.22	0.22	0.21	0.23	0.22	0.23	0.24	0.24	0.23	0.22	0.22	0.22	0.24	0.21	0.70	0.32	24
11	0.22	0.22	0.20	0.21	0.20	S	0.24	0.20	0.21	0.22	0.21	0.21	0.20	0.19	0.19	0.19	0.20	0.21	0.31	0.37	0.34	0.28	0.28	0.30	0.19	0.37	0.23	24
12	0.26	0.27	0.24	0.24	0.22	S	0.29	0.26	0.27	0.24	0.26	0.26	0.22	0.21	0.21	0.20	0.20	0.21	0.23	0.30	0.32	0.37	0.41	0.37	0.20	0.41	0.26	24
13	0.23	0.21	0.19	0.19	0.19	S	0.25	0.22	0.22	0.31	0.30	0.27	0.25	0.25	0.24	0.25	0.26	0.27	0.23	0.22	0.24	0.29	0.28	0.27	0.19	0.31	0.24	24
14	0.26	0.25	0.25	0.27	0.27	S	0.30	0.27	0.26	0.27	0.27	0.29	0.27	0.26	0.24	0.24	0.24	0.30	0.41	0.51	0.67	0.46	0.44	0.38	0.24	0.67	0.32	24
15	0.35	0.32	0.29	0.29	0.33	S	0.49	0.34	0.26	0.27	0.34	0.33	0.28	0.26	0.23	0.24	0.23	0.26	0.25	0.22	0.20	0.22	0.22	0.24	0.20	0.49	0.28	24
16	0.25	0.26	0.27	0.27	0.30	S	0.33	0.28	0.28	0.27	0.28	0.27	0.25	0.24	0.25	0.25	0.25	0.27	0.44	0.49	0.38	0.40	0.39	0.37	0.24	0.49	0.31	24
17	0.35	0.56	0.69	0.55	0.57	S	0.63	0.67	0.55	0.42	0.27	0.24	0.23	0.23	0.24	0.26	0.25	0.26	0.25	0.27	0.27	0.28	0.29	0.31	0.23	0.69	0.38	24
18	0.30	0.31	0.28	0.30	0.31	S	0.38	0.40	0.40	0.41	0.37	0.33	0.31	0.28	0.26	0.27	0.25	0.26	0.26	0.25	0.26	0.27	0.29	0.28	0.25	0.41	0.31	24
19	0.29	0.33	0.33	0.35	0.36	S	0.44	0.40	0.41	0.35	0.30	0.25	0.25	0.27	0.26	0.30	0.39	0.49	0.57	0.54	0.43	0.42	0.54	0.38	0.25	0.57	0.38	24
20	0.26	0.36	0.36	0.48	0.39	S	0.44	0.39	0.43	0.41	0.38	0.35	0.26	0.25	0.22	0.24	0.23	0.23	0.33	0.30	0.38	0.35	0.39	0.37	0.22	0.48	0.34	24
21	0.33	0.31	0.31	0.31	0.27	S	0.39	0.32	0.29	0.27	0.25	0.24	0.22	0.23	0.21	0.22	0.22	0.26	0.33	0.27	0.28	0.27	0.22	0.22	0.21	0.39	0.27	24
22	0.20	0.21	0.21	0.21	0.21	S	0.30	0.25	0.23	0.27	0.29	0.27	0.28	0.27	0.27	0.27	0.27	0.30	0.27	0.27	0.27	0.31	0.28	0.29	0.20	0.31	0.26	24
23	0.31	0.33	0.31	0.30	0.33	S	0.38	0.34	0.33	0.32	0.31	0.31	0.28	0.27	0.27	0.27	0.28	0.31	0.30	0.27	0.25	0.28	0.28	0.29	0.25	0.38	0.30	24
24	0.29	0.26	0.25	0.27	0.28	S	0.33	0.29	0.28	0.24	0.24	0.22	0.22	0.21	0.21	0.21	0.20	0.21	0.25	0.23	0.23	0.26	0.26	0.23	0.20	0.33	0.25	24
25	0.22	0.23	0.22	0.21	0.23	S	0.23	0.23	0.23	0.24	0.23	0.22	0.24	0.30	0.28	0.25	0.26	0.26	0.26	0.30	0.39	0.39	0.31	0.29	0.21	0.39	0.26	24
26	0.29	0.32	0.30	0.31	0.29	S	0.31	0.28	0.27	0.26	0.27	0.30	0.30	0.28	0.26	0.27	0.27	0.33	0.40	0.37	0.37	0.35	0.37	0.35	0.26	0.40	0.31	24
27	0.35	0.36	0.33	0.44	0.44	S	0.50	0.41	0.38	0.34	0.36	0.37	0.32	0.28	0.31	0.30	0.37	0.42	0.42	0.31	0.29	0.31	0.31	0.29	0.28	0.50	0.36	24
28	0.33	0.31	0.30	0.32	0.33	S	0.31	0.26	0.25	0.26	0.23	0.22	0.23	0.24	0.22	0.24	0.23	0.23	0.22	0.20	0.21	0.21	0.22	0.23	0.20	0.33	0.25	24
29	0.23	0.24	0.24	0.24	0.24	S	0.27	0.25	0.23	0.25	0.26	0.26	0.26	0.24	0.25	0.24	0.24	0.29	0.35	0.33	0.29	0.32	0.31	0.30	0.23	0.35	0.27	24
30	0.27	0.30	0.30	0.28	0.29	S	0.33	0.28	0.27	0.29	0.30	0.31	0.29	0.27	0.28	0.27	0.27	0.31	0.39	0.35	0.28	0.32	0.32	0.30	0.27	0.39	0.30	24
31	0.29	0.30	0.29	0.27	0.28	S	0.33	0.30	0.29	0.26	0.24	0.23	0.21	0.23	0.26	0.27	0.29	0.39	0.35	0.29	0.25	0.23	0.21	0.22	0.21	0.39	0.27	24
HOURLY MAX	0.50	0.56	0.69	0.55	0.57	NA	0.70	0.67	0.55	0.42	0.38	0.37	0.32	0.30	0.31	0.30	0.39	0.49	0.57	0.54	0.67	0.46	0.54	0.61				
HOURLY AVG	0.29	0.30	0.30	0.30	0.30	NA	0.35	0.30	0.30	0.29	0.28	0.26	0.25	0.24	0.24	0.24	0.25	0.27	0.31	0.30	0.30	0.30	0.30	0.30				

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

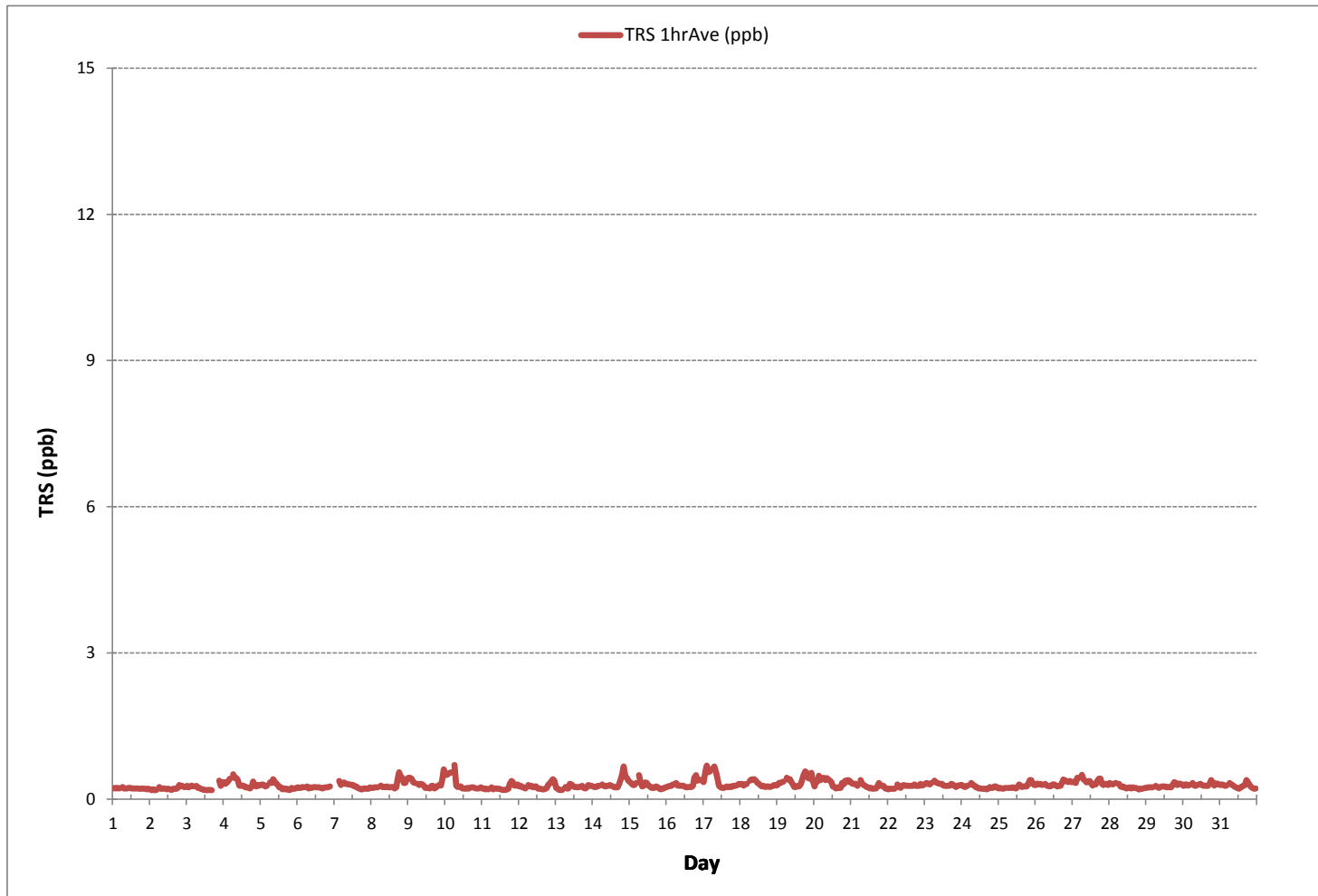
24 HR AVERAGES October 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704				
MINIMUM 1-HR AVERAGE:	0.18	ppb @ HOUR	1	ON DAY	2
MAXIMUM 1-HR AVERAGE:	0.70	ppb @ HOUR	6	ON DAY	10
MAXIMUM 24-HR AVERAGE:	0.38	ppb		ON DAY	17
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	739	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.3	%
STANDARD DEVIATION:	0.08		MONTHLY AVERAGE:	0.29	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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	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	0.26	0.28	0.26	0.28	0.26	S	0.31	0.26	0.26	0.26	0.28	0.28	0.28	0.28	0.33	0.28	0.28	0.28	0.28	0.31	0.28	0.28	0.28	0.31	0.26	0.33	0.28	24
2	0.26	0.26	0.31	0.28	0.31	S	0.36	0.31	0.33	0.28	0.31	0.29	0.31	0.31	0.31	0.31	0.31	0.31	0.34	0.41	0.36	0.44	0.36	0.34	0.26	0.44	0.32	24
3	0.37	0.34	0.39	0.37	0.37	S	0.44	0.34	0.39	0.32	0.32	0.34	0.33	0.36	0.36	0.39	0.36	C	C	C	C	C	0.46	0.50	0.32	0.50	0.38	24
4	0.52	0.46	0.44	0.50	0.53	S	0.64	0.58	0.53	0.50	0.46	0.39	0.36	0.39	0.36	0.36	0.28	0.28	0.36	0.44	0.41	0.36	0.39	0.33	0.28	0.64	0.43	24
5	0.39	0.39	0.36	0.36	0.34	S	0.45	0.49	0.52	0.44	0.39	0.36	0.28	0.31	0.28	0.28	0.28	0.29	0.28	0.26	0.29	0.28	0.31	0.33	0.26	0.52	0.35	24
6	0.28	0.28	0.31	0.31	0.31	S	0.36	0.28	0.32	0.29	0.28	P	0.31	0.26	0.31	0.26	0.26	0.26	0.26	0.26	0.28	0.28	P	P	0.26	0.36	0.29	21
7	P	P	P	0.44	0.31	S	0.41	0.39	0.33	0.33	0.31	0.33	0.31	0.31	0.41	0.23	0.26	0.25	0.23	0.26	0.28	0.23	0.26	0.28	0.23	0.44	0.31	21
8	0.26	0.26	0.28	0.28	0.31	S	0.36	0.33	0.31	0.29	0.31	0.31	0.32	0.29	0.28	0.28	0.36	0.57	0.68	0.60	0.57	0.40	0.42	0.51	0.26	0.68	0.37	24
9	0.55	0.58	0.53	0.44	0.44	S	0.41	0.36	0.42	0.39	0.39	0.34	0.33	0.33	0.34	0.39	0.36	0.31	0.33	0.39	0.49	0.46	1.09	1.15	0.31	1.15	0.47	24
10	0.63	0.70	0.66	0.66	0.68	S	1.02	0.42	0.32	0.36	0.37	0.33	0.31	0.28	0.31	0.28	0.34	0.34	0.34	0.32	0.32	0.32	0.32	0.36	0.28	1.02	0.43	24
11	0.33	0.31	0.31	0.31	0.31	S	0.39	0.32	0.32	0.32	0.32	0.29	0.32	0.31	0.28	0.28	0.28	0.32	0.45	0.55	0.50	0.44	0.39	0.50	0.28	0.55	0.35	24
12	0.39	0.37	0.34	0.35	0.36	S	0.44	0.39	0.37	0.37	0.40	0.40	0.35	0.33	0.34	0.34	0.36	0.34	0.36	0.44	0.47	0.48	0.55	0.55	0.33	0.55	0.40	24
13	0.37	0.32	0.32	0.32	0.34	S	0.45	0.34	0.34	0.50	0.40	0.40	0.41	0.36	0.36	0.42	0.39	0.39	0.34	0.34	0.37	0.40	0.42	0.37	0.32	0.50	0.38	24
14	0.39	0.34	0.39	0.39	0.39	S	0.52	0.39	0.36	0.39	0.36	0.42	0.37	0.36	0.34	0.39	0.36	0.46	0.60	0.73	0.97	0.63	0.60	0.57	0.34	0.97	0.47	24
15	0.47	0.49	0.39	0.42	0.47	S	0.61	0.50	0.35	0.37	0.47	0.44	0.44	0.34	0.31	0.36	0.33	0.33	0.34	0.33	0.31	0.31	0.31	0.31	0.31	0.61	0.39	24
16	0.31	0.33	0.34	0.34	0.39	S	0.45	0.35	0.34	0.36	0.34	0.36	0.31	0.31	0.34	0.31	0.31	0.34	0.60	0.57	0.47	0.45	0.47	0.42	0.31	0.60	0.38	24
17	0.41	1.13	1.12	0.62	0.64	S	0.70	0.76	0.73	0.52	0.33	0.29	0.26	0.28	0.31	0.33	0.31	0.31	0.29	0.31	0.31	0.34	0.37	0.40	0.26	1.13	0.48	24
18	0.37	0.37	0.34	0.36	0.44	S	0.46	0.50	0.47	0.52	0.44	0.39	0.37	0.34	0.40	0.36	0.33	0.31	0.32	0.32	0.32	0.32	0.34	0.37	0.31	0.52	0.38	24
19	0.34	0.42	0.42	0.47	0.47	S	0.53	0.50	0.58	0.47	0.40	0.34	0.34	0.34	0.36	0.41	0.49	0.76	0.70	0.73	0.57	0.60	0.66	0.58	0.34	0.76	0.50	24
20	0.37	0.50	0.53	0.64	0.50	S	0.61	0.50	0.58	0.53	0.48	0.45	0.39	0.39	0.34	0.36	0.34	0.33	0.42	0.44	0.60	0.45	0.56	0.48	0.33	0.64	0.47	24
21	0.45	0.42	0.40	0.42	0.40	S	0.53	0.45	0.40	0.42	0.40	0.34	0.36	0.36	0.37	0.36	0.34	0.49	0.47	0.43	0.43	0.37	0.34	0.35	0.34	0.53	0.40	24
22	0.32	0.32	0.35	0.32	0.32	S	0.43	0.35	0.32	0.37	0.42	0.42	0.39	0.39	0.37	0.39	0.36	0.41	0.41	0.39	0.36	0.47	0.39	0.39	0.32	0.47	0.38	24
23	0.39	0.44	0.42	0.42	0.45	S	0.47	0.43	0.45	0.43	0.42	0.40	0.37	0.36	0.37	0.36	0.39	0.42	0.39	0.34	0.34	0.39	0.37	0.40	0.34	0.47	0.40	24
24	0.37	0.34	0.34	0.39	0.39	S	0.47	0.37	0.39	0.34	0.33	0.31	0.31	0.31	0.29	0.31	0.31	0.28	0.44	0.31	0.36	0.36	0.35	0.32	0.28	0.47	0.35	24
25	0.32	0.32	0.29	0.29	0.30	S	0.34	0.29	0.32	0.32	0.32	0.32	0.35	0.40	0.40	0.33	0.36	0.34	0.37	0.50	0.55	0.55	0.40	0.40	0.29	0.55	0.36	24
26	0.40	0.45	0.40	0.40	0.40	S	0.42	0.35	0.34	0.39	0.39	0.40	0.37	0.37	0.36	0.39	0.37	0.42	0.54	0.48	0.48	0.42	0.45	0.45	0.34	0.54	0.41	24
27	0.50	0.45	0.45	0.58	0.58	S	0.64	0.50	0.47	0.47	0.45	0.45	0.44	0.36	0.42	0.39	0.42	0.55	0.55	0.39	0.36	0.44	0.41	0.36	0.36	0.64	0.46	24
28	0.43	0.42	0.42	0.39	0.42	S	0.49	0.36	0.33	0.31	0.34	0.33	0.33	0.34	0.33	0.34	0.34	0.34	0.31	0.31	0.31	0.34	0.34	0.40	0.31	0.49	0.36	24
29	0.37	0.35	0.34	0.35	0.35	S	0.40	0.40	0.34	0.37	0.37	0.37	0.37	0.37	0.37	0.39	0.37	0.49	0.49	0.47	0.42	0.45	0.45	0.45	0.34	0.49	0.40	24
30	0.40	0.42	0.42	0.42	0.40	S	0.47	0.42	0.37	0.42	0.42	0.42	0.43	0.40	0.40	0.41	0.39	0.46	0.53	0.55	0.45	0.42	0.43	0.43	0.37	0.55	0.43	24
31	0.40	0.40	0.40	0.37	0.40	S	0.48	0.42	0.42	0.40	0.37	0.34	0.32	0.34	0.39	0.40	0.38	0.53	0.47	0.43	0.37	0.34	0.34	0.34	0.32	0.53	0.39	24
HOURLY MAX	0.63	1.13	1.12	0.66	0.68	NA	1.02	0.76	0.73	0.53	0.48	0.45	0.44	0.40	0.42	0.42	0.49	0.76	0.70	0.73	0.97	0.63	1.09	1.15				
HOURLY AVG	0.39	0.42	0.41	0.40	0.41	NA	0.49	0.41	0.40	0.39	0.37	0.36	0.35	0.34	0.35	0.34	0.34	0.38	0.42	0.42	0.42	0.40	0.43	0.43				

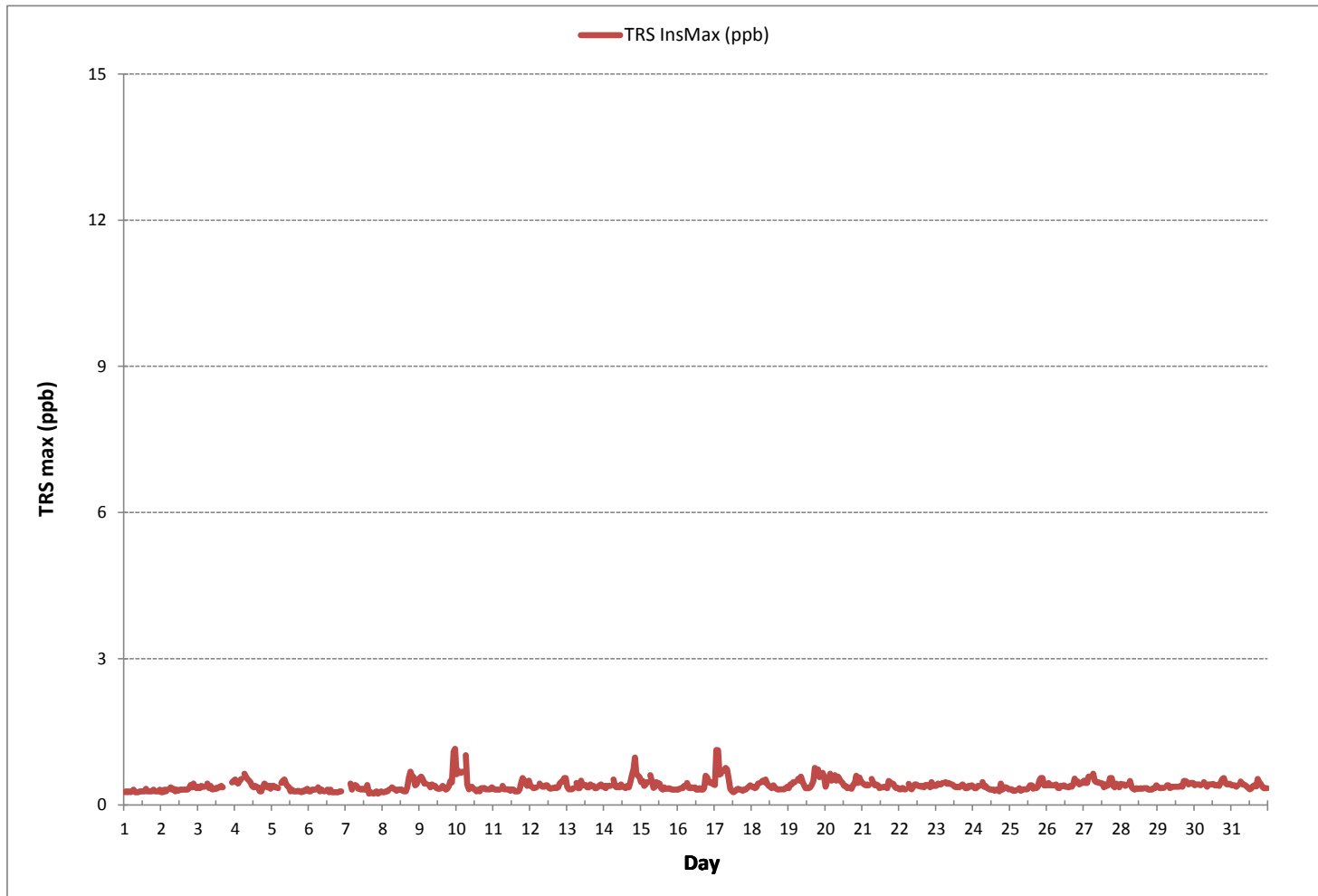
STATUS FLAG CODES

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:	702					
MAXIMUM INSTANTANEOUS VALUE:	1.15	ppb	@ HOUR	23	ON DAY	9
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	738	hrs	
MONTHLY CALIBRATION TIME:	5	hrs				
STANDARD DEVIATION:	0.11					

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 17/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

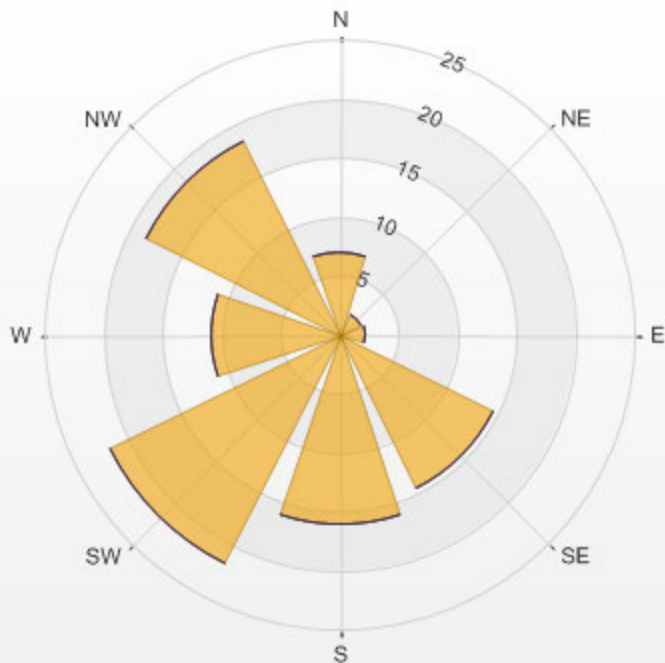
Calm: 6.96%

Calm Avg: 0.34 [ppb]

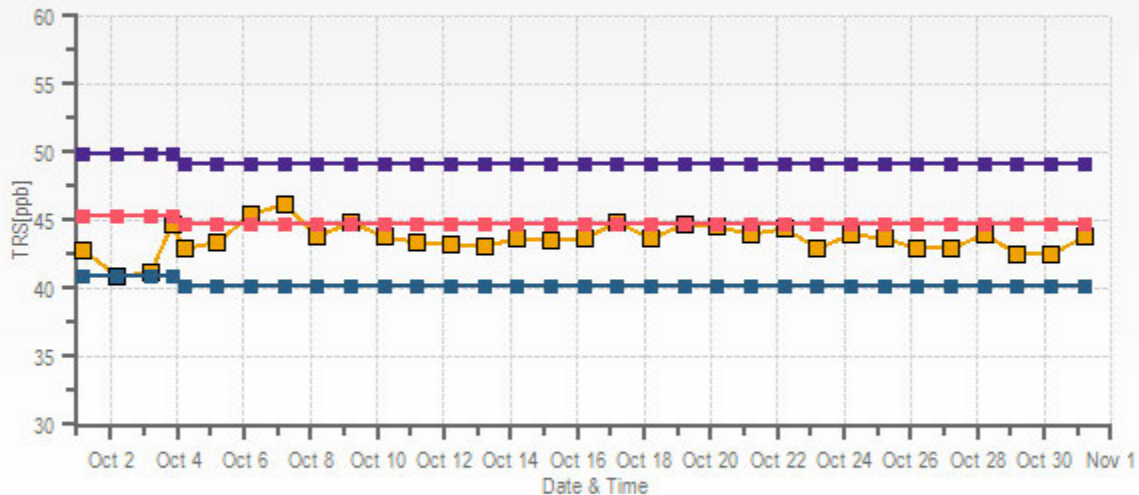
Direction	0-1	1-3	3-10	>10.0	Total
N	7.0	0.0	0.0	0.0	7.0
NE	2.0	0.0	0.0	0.0	2.0
E	2.3	0.0	0.0	0.0	2.3
SE	14.6	0.0	0.0	0.0	14.6
S	16.1	0.0	0.0	0.0	16.1
SW	21.7	0.0	0.0	0.0	21.7
W	10.9	0.0	0.0	0.0	10.9
NW	18.5	0.0	0.0	0.0	18.5
Summary	93.0	0.0	0.0	0.0	93.0

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

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 6.96% Calm Poll Avg: 0.34[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 17/10 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON

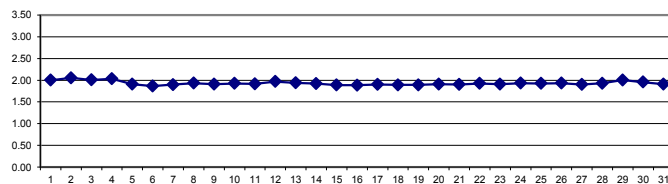
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	1.92	1.94	1.93	1.94	1.95	S	1.96	1.96	1.96	1.97	1.97	2.01	2.13	2.13	2.15	2.00	2.06	2.07	2.05	1.98	1.97	1.97	1.97	1.97	1.92	2.15	2.00	24
2	1.97	1.97	1.97	1.98	2.00	S	1.98	1.98	1.99	1.98	1.98	1.97	2.04	2.02	2.03	2.00	2.06	2.19	2.29	2.10	2.14	2.23	2.22	2.13	1.97	2.29	2.05	24
3	2.06	2.06	2.06	2.00	1.99	S	1.98	1.99	1.98	1.99	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.99	2.00	2.20	2.05	2.02	1.97	2.20	2.01	24
4	2.03	2.09	2.11	2.18	2.28	S	2.36	2.30	2.25	2.03	C	C	C	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.93	1.92	1.90	2.36	2.03	24
5	1.94	1.93	1.94	1.94	1.94	S	1.93	1.94	1.95	1.95	1.93	1.91	1.89	1.88	1.87	1.88	1.88	1.87	1.87	1.88	1.87	1.88	1.87	1.88	1.87	1.95	1.91	24
6	1.88	1.88	1.88	1.88	1.88	S	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	P	P	1.85	1.88	1.86	22
7	P	P	P	R	1.92	S	1.87	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.91	1.91	1.91	1.91	1.89	1.88	1.88	1.88	1.94	1.94	1.87	1.94	1.90	20
8	1.93	1.97	1.91	2.05	2.04	S	1.95	1.92	1.92	1.92	1.94	1.98	1.91	1.94	1.90	1.89	1.90	1.90	1.91	1.93	1.93	1.90	1.89	1.89	1.89	2.05	1.93	24
9	1.89	1.89	1.89	1.90	1.90	S	1.90	1.89	1.89	1.88	1.89	1.90	1.90	1.90	1.91	1.88	1.89	1.90	2.01	1.89	1.91	1.93	1.94	1.94	1.88	2.01	1.91	24
10	1.91	1.92	1.92	1.94	1.96	S	2.15	1.94	1.90	1.90	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.91	1.91	1.91	1.90	2.15	1.93	24
11	1.92	1.92	1.92	1.91	1.90	S	1.90	1.90	1.91	1.90	1.90	1.90	1.91	1.91	1.92	1.91	1.90	1.90	1.90	1.92	1.91	1.92	1.97	1.98	1.90	1.98	1.91	24
12	2.00	2.02	2.04	2.03	2.03	S	2.02	2.00	1.94	1.93	1.93	1.93	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.93	1.92	1.92	2.07	2.15	1.91	2.15	1.97	24
13	1.95	1.91	1.91	1.91	1.92	S	1.98	2.06	1.93	1.94	1.98	1.96	1.94	1.98	1.98	1.94	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.93	1.91	2.06	1.94	24
14	1.94	1.94	1.94	1.94	1.94	S	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.97	1.91	1.95	1.96	1.91	1.91	1.90	1.91	1.90	1.97	1.92	24
15	1.91	1.90	1.90	1.91	1.90	S	1.90	1.89	1.89	1.90	1.92	1.91	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.87	1.92	1.89	24
16	1.88	1.88	1.88	1.88	1.87	S	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	\$1	1.88	1.88	1.89	1.89	1.90	1.88	1.87	1.90	1.88	23
17	1.89	1.89	1.88	1.90	1.90	S	1.92	1.93	1.91	1.93	1.91	1.88	1.90	1.92	1.91	1.98	1.94	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.98	1.90	24
18	1.88	1.88	1.88	1.89	1.89	S	1.90	1.91	1.91	1.91	1.91	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.87	1.87	1.88	1.88	1.88	1.87	1.91	1.89	24
19	1.89	1.89	1.89	1.90	1.90	S	1.90	1.91	1.92	1.90	1.89	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.88	1.90	1.92	1.92	1.92	1.92	1.86	1.92	1.89	24
20	1.93	1.96	1.99	1.97	1.95	S	1.89	1.90	1.89	1.91	1.90	1.90	1.89	1.89	1.88	1.87	1.88	1.88	1.88	1.89	1.90	1.90	1.89	1.91	1.87	1.99	1.91	24
21	1.89	1.89	1.90	1.89	1.90	S	1.91	1.93	1.90	1.90	1.90	1.91	1.90	1.89	1.89	1.89	1.89	1.90	1.90	1.92	1.93	1.95	1.91	1.89	1.89	1.95	1.90	24
22	1.89	1.90	1.90	1.90	1.90	S	1.91	2.11	1.94	1.90	1.91	1.91	1.91	1.91	1.90	1.90	1.91	1.90	1.90	1.90	1.90	2.17	1.91	1.90	1.89	2.17	1.93	24
23	1.90	1.91	1.91	1.91	1.91	S	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.91	1.90	1.91	1.90	1.89	1.89	1.92	1.91	24
24	1.90	1.89	1.89	1.88	1.88	S	1.88	1.88	1.89	1.89	2.00	1.98	2.00	2.02	2.03	2.02	1.93	2.00	1.97	1.94	1.90	1.90	1.92	1.89	1.88	2.03	1.93	24
25	1.89	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.92	1.96	2.13	2.09	1.96	1.93	1.92	1.92	1.92	1.92	1.89	2.13	1.93	24
26	1.92	1.92	1.92	1.92	1.91	S	1.92	1.92	1.93	1.94	1.94	1.94	1.94	1.95	1.93	1.94	1.94	1.94	1.94	1.93	1.92	1.92	1.93	1.93	1.91	1.95	1.93	24
27	1.92	1.91	1.91	1.92	1.93	S	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.88	1.88	1.86	1.85	1.85	1.93	1.90	24
28	1.85	1.84	1.84	1.84	1.86	S	2.00	2.03	1.99	1.99	1.92	1.90	1.92	1.96	1.96	1.95	1.93	1.90	1.94	1.93	1.94	1.92	1.96	1.98	1.84	2.03	1.93	24
29	1.95	2.04	2.07	1.99	2.03	S	2.16	2.21	2.18	2.02	1.95	1.93	1.95	1.94	1.93	1.95	2.09	2.09	1.92	1.91	1.93	1.92	1.92	1.93	1.91	2.21	2.00	24
30	1.93	1.94	1.94	1.94	1.93	S	1.95	1.96	1.97	1.98	1.97	1.99	1.96	1.95	1.92	1.96	1.93	1.95	1.92	1.92	1.94	2.00	2.03	2.00	1.92	2.03	1.96	24
31	1.97	1.95	1.92	1.92	1.89	S	1.91	1.90	1.92	1.98	1.87	1.88	1.87	1.87	1.89	1.89	1.89	1.89	1.90	1.91	1.91	1.90	1.90	1.90	1.87	1.98	1.91	24
HOURLY MAX	2.06	2.09	2.11	2.18	2.28	NA	2.36	2.30	2.25	2.03	2.00	2.01	2.13	2.13	2.15	2.02	2.13	2.19	2.29	2.10	2.14	2.23	2.22	2.15				
HOURLY AVG	1.92	1.93	1.93	1.94	1.94	NA	1.95	1.96	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.92	1.92	1.94	1.94	1.93				

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

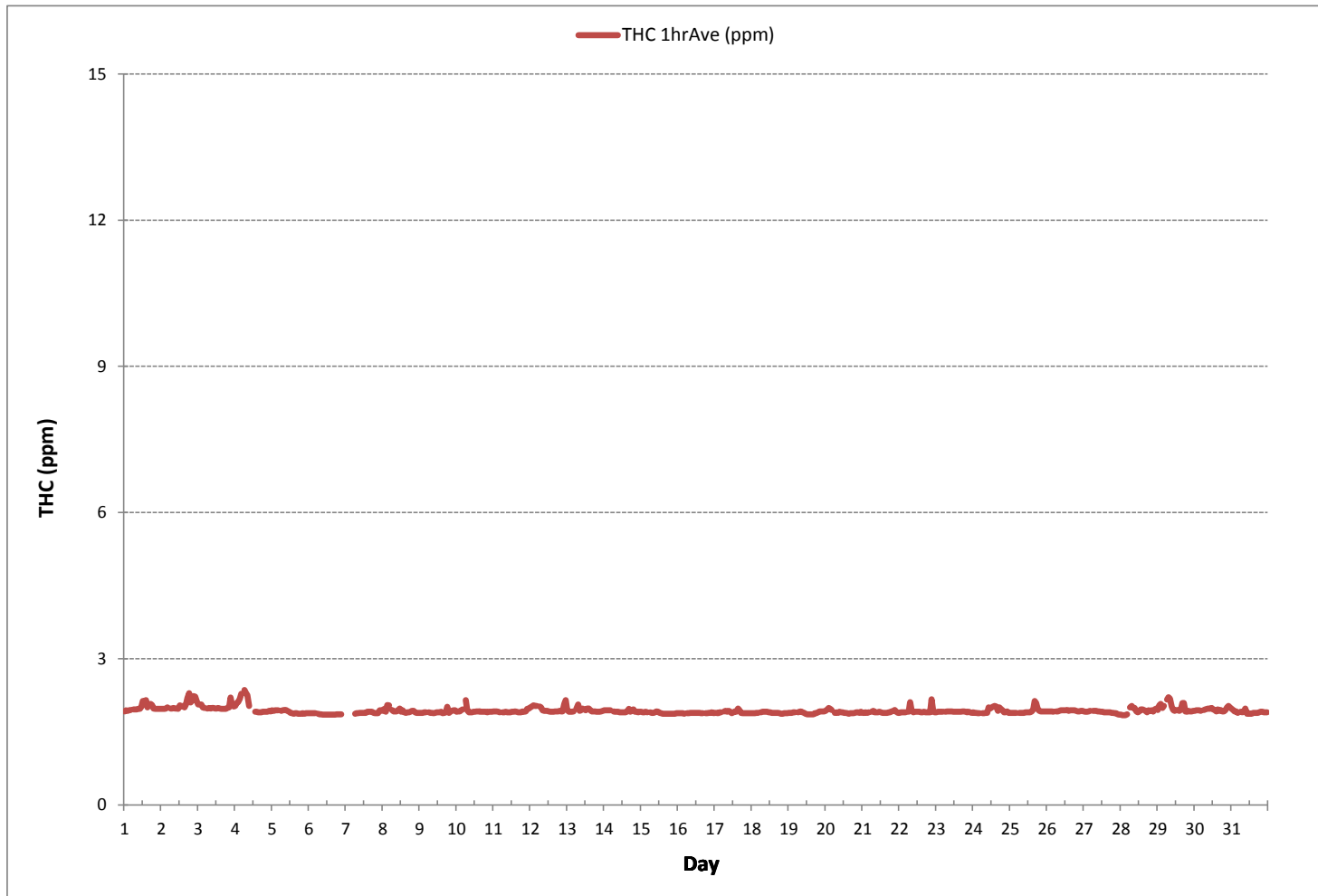
24 HR AVERAGES October 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703			
MINIMUM 1-HR AVERAGE:	1.84	ppm @ HOUR	1	ON DAY 28
MAXIMUM 1-HR AVERAGE:	2.36	ppm @ HOUR	6	ON DAY 4
MAXIMUM 24-HR AVERAGE:	2.05	ppm		ON DAY 2
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	737 hrs
MONTHLY CALIBRATION TIME:	3	hrs	AMD OPERATION UPTIME:	99.1 %
STANDARD DEVIATION:	0.07		MONTHLY AVERAGE:	1.93 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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	1.92	1.96	1.94	1.95	1.95	S	1.96	1.96	1.96	2.28	2.15	2.38	7.37	3.07	3.45	2.07	2.36	2.30	3.33	1.98	1.97	1.99	1.98	1.99	1.92	7.37	2.45	24
2	1.97	1.99	1.97	2.04	2.09	S	2.01	1.99	1.99	1.99	1.98	1.97	2.25	2.27	2.28	2.10	2.52	3.21	4.57	2.84	3.17	3.55	3.03	3.11	1.97	4.57	2.47	24
3	2.45	2.66	2.28	2.15	1.99	S	2.01	1.99	2.01	1.99	2.03	1.99	1.98	2.20	2.20	1.99	1.98	1.99	2.01	2.20	2.26	3.16	2.37	2.10	1.98	3.16	2.17	24
4	2.11	2.11	2.19	2.22	2.34	S	2.45	2.37	2.32	C	C	C	C	C	1.91	1.92	1.90	1.92	1.93	1.92	1.93	1.92	1.94	1.93	1.90	2.45	2.07	24
5	1.95	1.95	2.03	1.95	1.95	S	1.95	1.95	1.94	1.97	1.94	1.93	1.89	1.91	1.88	1.89	1.90	1.87	1.87	1.87	1.90	1.87	1.90	1.88	1.87	2.03	1.92	24
6	1.90	1.89	1.88	1.89	1.88	S	1.87	1.89	1.87	1.87	1.85	P	1.85	1.87	1.86	1.88	1.85	1.87	1.87	1.86	1.88	1.88	P	P	1.85	1.90	1.87	21
7	P	P	P	R	2.05	S	1.89	1.92	1.89	2.03	1.99	1.95	1.99	1.95	2.04	2.01	2.05	1.95	1.90	1.88	1.90	1.88	2.42	2.22	1.88	2.42	2.00	20
8	2.24	2.22	2.01	2.26	2.21	S	2.10	2.07	2.02	2.05	2.16	2.75	1.98	2.07	1.99	1.89	1.91	1.90	1.91	1.93	1.95	1.90	1.92	1.91	1.89	2.75	2.06	24
9	1.89	1.89	1.89	1.91	1.91	S	1.89	1.89	1.89	1.90	1.95	2.00	2.05	2.03	2.09	1.89	1.89	2.05	2.85	1.92	1.99	2.54	2.92	2.92	1.89	2.92	2.09	24
10	1.98	1.96	1.97	2.25	1.99	S	2.94	2.12	1.93	1.90	1.93	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.91	1.93	1.91	1.93	1.92	1.94	1.90	2.94	2.00	24
11	1.92	1.92	1.92	1.91	1.90	S	1.92	1.90	1.92	1.91	1.92	1.91	2.03	1.94	2.08	2.06	1.95	1.97	1.93	1.95	1.93	1.95	2.00	2.00	1.90	2.08	1.95	24
12	2.04	2.10	2.09	2.09	2.07	S	2.03	2.03	1.99	1.96	1.94	1.99	1.93	1.93	1.95	1.99	2.22	1.97	1.94	1.95	1.95	1.93	4.33	3.87	1.93	4.33	2.19	24
13	2.22	1.92	1.92	1.91	1.95	S	2.32	2.86	1.96	1.97	2.24	2.33	2.08	2.22	2.42	2.06	1.93	1.91	1.93	1.92	1.95	1.93	1.93	1.93	1.91	2.86	2.08	24
14	1.95	1.94	1.95	1.94	1.94	S	1.92	1.92	1.92	1.95	1.90	1.92	1.91	1.90	1.91	2.08	2.47	1.94	2.19	2.11	1.93	1.97	1.91	1.94	1.90	2.47	1.98	24
15	1.91	1.92	1.90	1.93	1.91	S	1.91	1.93	1.91	1.93	1.92	1.92	1.91	1.88	1.88	1.87	1.88	1.87	1.88	1.88	1.87	1.87	1.87	1.88	1.87	1.93	1.90	24
16	1.88	1.88	1.88	1.88	1.87	S	1.91	1.88	1.90	1.89	1.89	1.90	1.89	1.89	1.88	1.89	1.88	S1	S1	1.89	1.92	1.91	1.91	1.89	1.87	1.92	1.89	22
17	1.90	1.92	1.90	1.90	1.95	S	1.93	1.94	1.95	2.27	2.96	2.14	2.11	2.14	2.18	2.20	2.18	1.96	1.89	1.90	1.89	1.88	1.92	1.89	1.88	2.96	2.04	24
18	1.91	1.88	1.90	1.90	1.91	S	1.92	1.92	1.93	1.93	1.92	1.92	1.91	1.92	1.89	1.90	1.90	1.89	1.91	1.88	1.89	1.88	1.91	1.88	1.88	1.93	1.90	24
19	1.92	1.90	1.91	1.91	1.93	S	1.93	2.05	2.11	1.92	1.90	1.93	1.86	1.88	1.86	X	1.88	1.95	1.95	1.93	2.11	1.98	1.95	1.94	1.86	2.11	1.94	23
20	1.97	2.00	2.00	2.00	1.98	S	1.90	X	1.90	X	1.91	1.93	2.03	1.88	1.90	1.87	1.89	1.88	1.89	1.89	1.90	1.92	1.91	1.93	1.87	2.03	1.93	22
21	1.89	1.90	1.90	1.92	1.90	S	1.93	1.93	1.93	1.90	1.92	1.91	1.91	1.89	1.91	1.88	1.89	1.95	1.95	1.96	1.96	2.00	1.96	1.92	1.88	2.00	1.92	24
22	1.89	1.93	1.90	1.92	1.93	S	1.95	3.45	2.23	1.91	1.93	1.91	1.94	1.90	1.91	1.91	1.91	1.94	1.90	2.00	1.90	3.82	2.13	1.90	1.89	3.82	2.09	24
23	1.94	1.92	1.94	1.92	1.93	S	1.93	1.93	1.95	1.92	1.93	1.92	1.92	1.93	1.91	1.92	1.91	1.93	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.95	1.92	24
24	1.91	1.90	1.96	1.88	1.90	S	1.89	1.89	2.03	1.95	2.26	2.26	2.34	2.31	2.35	2.29	2.32	2.25	2.79	2.18	1.92	1.91	2.08	1.92	1.88	2.79	2.11	24
25	1.89	1.90	1.92	1.91	1.91	S	1.89	1.91	1.90	1.92	1.90	1.91	1.91	1.93	2.21	2.18	2.60	2.70	2.22	2.27	1.92	1.93	1.95	1.92	1.89	2.70	2.03	24
26	1.95	1.95	1.93	1.93	1.92	S	1.92	1.95	1.93	1.94	1.96	1.95	1.96	1.95	1.95	1.94	1.95	1.94	1.94	1.93	1.95	1.95	1.93	1.94	1.92	1.96	1.94	24
27	1.93	1.93	1.92	1.95	1.93	S	1.94	1.96	1.95	X	1.95	1.93	1.94	1.90	1.92	1.90	1.91	1.89	1.89	1.89	1.88	1.88	1.89	1.88	1.88	1.96	1.92	23
28	1.85	1.86	1.85	1.86	2.13	S	2.19	2.24	2.16	2.16	2.07	2.03	2.11	2.15	2.16	2.17	2.15	1.99	2.11	2.17	2.19	2.03	2.38	2.18	1.85	2.38	2.10	24
29	2.14	2.25	2.29	2.14	2.32	S	2.42	2.62	2.49	2.21	2.11	2.02	2.07	2.05	2.02	2.17	2.90	3.03	1.93	1.92	1.96	1.93	1.93	1.95	1.92	3.03	2.21	24
30	1.94	1.95	1.96	1.95	1.97	S	1.97	1.98	1.97	1.98	1.98	2.25	2.23	2.17	2.07	2.40	1.96	1.98	1.97	1.92	1.98	2.02	2.07	2.03	1.92	2.40	2.03	24
31	2.01	1.96	1.96	1.95	1.91	S	1.93	1.92	2.09	2.19	1.87	1.93	2.01	1.90	1.89	1.89	1.97	1.91	1.93	1.91	1.91	1.91	1.93	1.92	1.87	2.19	1.95	24
HOURLY MAX	2.45	2.66	2.29	2.26	2.34	NA	2.94	3.45	2.49	2.28	2.96	2.75	7.37	3.07	3.45	2.40	2.90	3.21	4.57	2.84	3.17	3.82	4.33	3.87				
HOURLY AVG	1.98	1.98	1.97	1.98	1.98	NA	2.02	2.08	2.00	1.99	2.01	2.03	2.18	2.03	2.06	2.00	2.06	2.06	2.14	1.99	1.99	2.10	2.14	2.09				

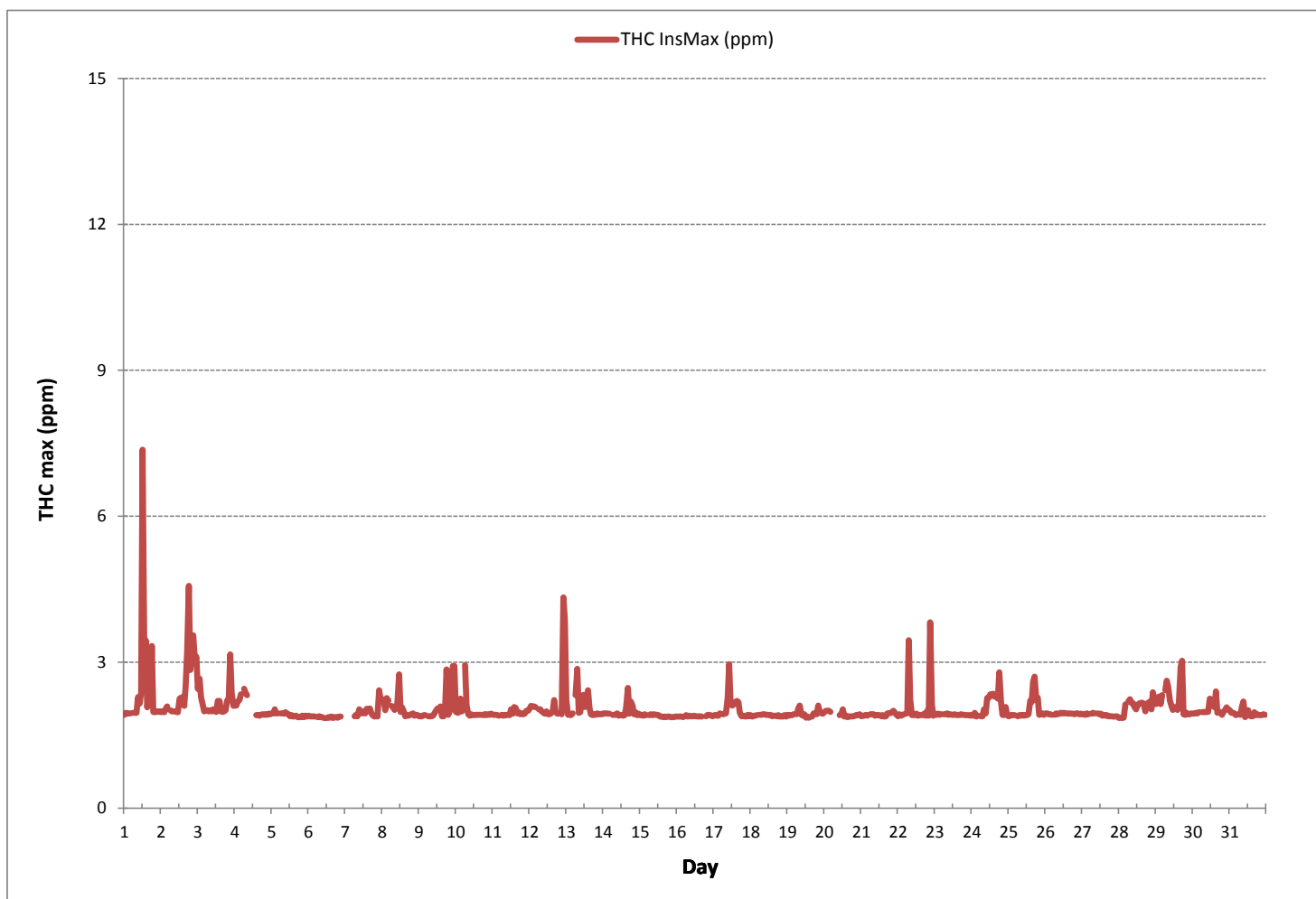
STATUS FLAG CODES

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:	695				
MAXIMUM INSTANTANEOUS VALUE:	7.37	ppm	@ HOUR	12	ON DAY 1
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	731	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.35				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 17/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

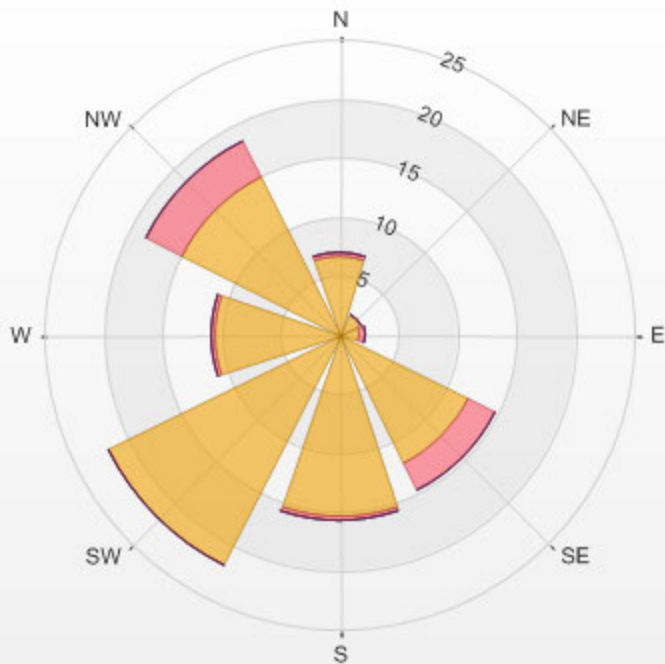
Calm: 6.97%

Calm Avg: 1.95 [ppm]

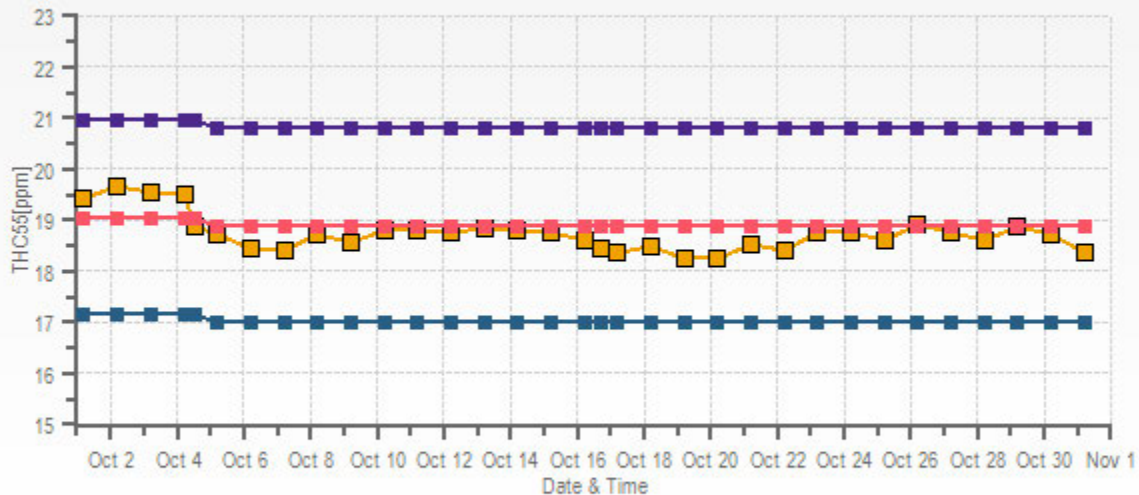
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.7	0.3	0.0	0.0	0.0	7.0
NE	2.0	0.0	0.0	0.0	0.0	2.0
E	1.7	0.6	0.0	0.0	0.0	2.3
SE	12.2	2.6	0.0	0.0	0.0	14.8
S	15.4	0.4	0.0	0.0	0.0	15.8
SW	21.9	0.0	0.0	0.0	0.0	21.9
W	10.7	0.3	0.0	0.0	0.0	11.0
NW	15.1	3.3	0.0	0.0	0.0	18.4
Summary	85.6	7.4	0.0	0.0	0.0	93.0

%	Icon	Classes (ppm)
86		0-2
7		2-3
0		3-5
0		5-10
0		>10.0

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 6.97% Calm Poll
Avg: 1.95[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 17/10 Type: Span



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

METHANE

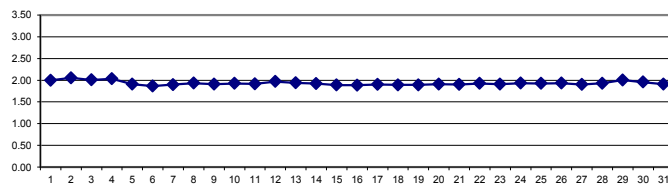
METHANE Hourly Averages (CH₄ ppm)

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	1.92	1.93	1.93	1.94	1.95	S	1.96	1.96	1.96	1.97	1.97	2.01	2.13	2.13	2.15	2.00	2.06	2.07	2.05	1.98	1.97	1.97	1.97	1.97	1.92	2.15	2.00	24	
2	1.97	1.97	1.97	1.98	2.00	S	1.98	1.98	1.99	1.98	1.97	1.97	2.04	2.02	2.03	2.00	2.06	2.19	2.29	2.10	2.14	2.23	2.22	2.13	1.97	2.29	2.05	24	
3	2.06	2.06	2.06	2.00	1.99	S	1.98	1.99	1.98	1.99	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.99	2.00	2.20	2.05	2.02	1.97	2.20	2.01	24	
4	2.03	2.09	2.11	2.18	2.28	S	2.36	2.30	2.25	2.03	C	C	C	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.93	1.92	1.90	2.36	2.03	24	
5	1.94	1.93	1.94	1.94	1.94	S	1.93	1.94	1.95	1.95	1.93	1.91	1.89	1.88	1.87	1.88	1.88	1.87	1.87	1.88	1.87	1.88	1.87	1.88	1.87	1.95	1.91	24	
6	1.88	1.88	1.88	1.88	1.88	S	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	P	P	1.85	1.88	1.86	22	
7	P	P	P	R	1.92	S	1.87	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.91	1.91	1.91	1.91	1.89	1.88	1.88	1.88	1.94	1.94	1.87	1.94	1.90	20	
8	1.93	1.97	1.91	2.05	2.04	S	1.95	1.92	1.92	1.92	1.94	1.98	1.91	1.94	1.90	1.89	1.90	1.90	1.91	1.93	1.93	1.90	1.89	1.89	1.89	2.05	1.93	24	
9	1.89	1.89	1.89	1.90	1.90	S	1.90	1.89	1.89	1.88	1.89	1.90	1.90	1.90	1.91	1.88	1.89	1.90	2.01	1.89	1.91	1.93	1.94	1.94	1.88	2.01	1.91	24	
10	1.91	1.92	1.92	1.94	1.96	S	2.15	1.94	1.90	1.90	1.90	1.91	1.91	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.91	1.91	1.91	1.90	2.15	1.93	24	
11	1.92	1.92	1.92	1.91	1.90	S	1.90	1.90	1.91	1.90	1.90	1.90	1.91	1.91	1.92	1.91	1.90	1.90	1.90	1.92	1.91	1.92	1.97	1.98	1.90	1.98	1.91	24	
12	2.00	2.02	2.04	2.03	2.03	S	2.02	2.00	1.94	1.93	1.93	1.93	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.92	1.92	2.07	2.15	1.91	2.15	1.97	24
13	1.95	1.91	1.91	1.91	1.92	S	1.98	2.06	1.93	1.94	1.98	1.96	1.94	1.98	1.98	1.94	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.93	1.91	2.06	1.94	24	
14	1.94	1.94	1.94	1.94	1.94	S	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.97	1.91	1.95	1.96	1.91	1.91	1.90	1.91	1.90	1.97	1.92	24	
15	1.91	1.90	1.90	1.91	1.90	S	1.90	1.89	1.89	1.90	1.92	1.91	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.87	1.92	1.89	24	
16	1.88	1.88	1.88	1.88	1.87	S	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	\$1	1.88	1.88	1.89	1.89	1.90	1.88	1.87	1.90	1.88	23	
17	1.89	1.89	1.88	1.90	1.90	S	1.92	1.93	1.91	1.93	1.91	1.88	1.90	1.92	1.91	1.98	1.94	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.98	1.90	24	
18	1.88	1.88	1.88	1.89	1.89	S	1.90	1.91	1.91	1.91	1.91	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.87	1.87	1.88	1.88	1.88	1.87	1.91	1.89	24	
19	1.89	1.89	1.89	1.90	1.90	S	1.90	1.91	1.92	1.90	1.89	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.88	1.90	1.92	1.92	1.92	1.92	1.86	1.92	1.89	24	
20	1.93	1.96	1.99	1.97	1.95	S	1.89	1.90	1.89	1.91	1.90	1.90	1.89	1.89	1.88	1.87	1.88	1.88	1.88	1.89	1.90	1.90	1.89	1.91	1.87	1.99	1.91	24	
21	1.89	1.89	1.90	1.89	1.90	S	1.91	1.93	1.90	1.90	1.90	1.91	1.90	1.89	1.89	1.89	1.89	1.90	1.90	1.92	1.93	1.95	1.91	1.89	1.89	1.95	1.90	24	
22	1.89	1.90	1.90	1.90	1.89	S	1.91	2.11	1.94	1.90	1.91	1.91	1.91	1.91	1.90	1.90	1.91	1.90	1.90	1.90	1.90	2.17	1.91	1.90	1.89	2.17	1.92	24	
23	1.90	1.91	1.91	1.91	1.91	S	1.91	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.91	1.90	1.91	1.90	1.89	1.89	1.92	1.91	24	
24	1.90	1.89	1.89	1.88	1.88	S	1.88	1.88	1.89	1.89	2.00	1.98	2.00	2.02	2.03	2.02	1.93	2.00	1.97	1.94	1.90	1.90	1.91	1.89	1.88	2.03	1.93	24	
25	1.89	1.89	1.89	1.89	1.89	S	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.92	1.96	2.13	2.09	1.96	1.93	1.92	1.92	1.92	1.92	1.89	2.13	1.93	24	
26	1.92	1.92	1.92	1.92	1.91	S	1.92	1.92	1.93	1.94	1.94	1.94	1.94	1.95	1.93	1.94	1.94	1.94	1.94	1.93	1.92	1.92	1.93	1.93	1.91	1.95	1.93	24	
27	1.92	1.91	1.91	1.92	1.93	S	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.88	1.88	1.86	1.85	1.85	1.93	1.90	24	
28	1.85	1.84	1.84	1.84	1.86	S	2.00	2.03	1.99	1.99	1.92	1.90	1.92	1.96	1.96	1.95	1.93	1.90	1.94	1.93	1.94	1.92	1.96	1.98	1.84	2.03	1.93	24	
29	1.95	2.04	2.07	1.99	2.03	S	2.16	2.21	2.18	2.02	1.95	1.93	1.95	1.94	1.93	1.95	2.09	2.09	1.92	1.91	1.93	1.92	1.92	1.93	1.91	2.21	2.00	24	
30	1.93	1.94	1.94	1.94	1.93	S	1.95	1.96	1.97	1.98	1.97	1.99	1.96	1.95	1.92	1.96	1.93	1.95	1.92	1.91	1.94	2.00	2.03	2.00	1.91	2.03	1.96	24	
31	1.97	1.95	1.92	1.92	1.89	S	1.91	1.90	1.92	1.98	1.87	1.88	1.87	1.87	1.89	1.89	1.89	1.89	1.90	1.91	1.91	1.90	1.90	1.90	1.87	1.98	1.91	24	
HOURLY MAX	2.06	2.09	2.11	2.18	2.28	NA	2.36	2.30	2.25	2.03	2.00	2.01	2.13	2.13	2.15	2.02	2.13	2.19	2.29	2.10	2.14	2.23	2.22	2.15					
HOURLY AVG	1.92	1.93	1.93	1.94	1.94	NA	1.95	1.96	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.92	1.92	1.94	1.94	1.93					

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

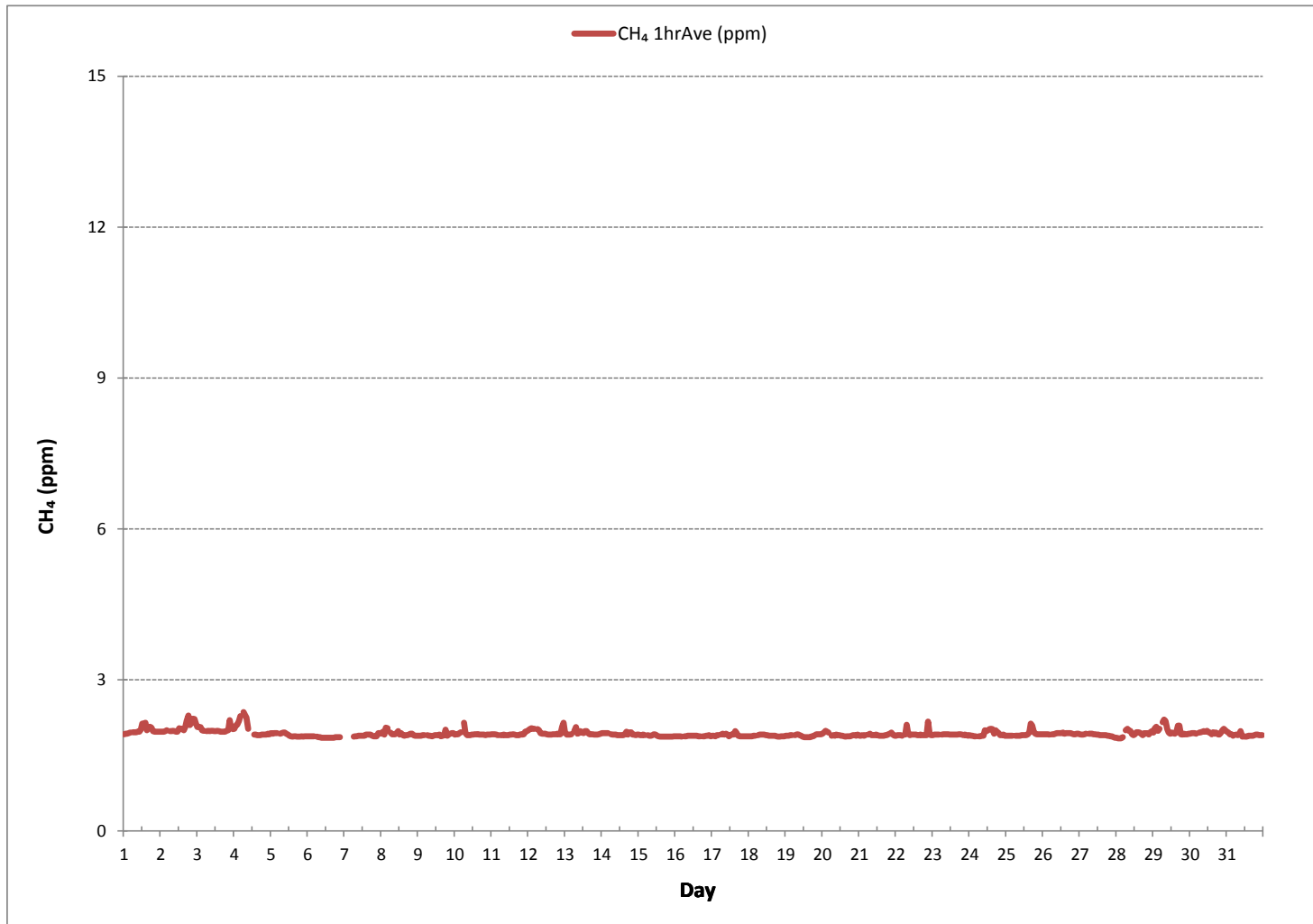
24 HR AVERAGES October 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703			
MINIMUM 1-HR AVERAGE:	1.84	ppm @ HOUR	1	ON DAY 28
MAXIMUM 1-HR AVERAGE:	2.36	ppm @ HOUR	6	ON DAY 4
MAXIMUM 24-HR AVERAGE:	2.05	ppm		ON DAY 2
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	737 hrs
MONTHLY CALIBRATION TIME:	3	hrs	AMD OPERATION UPTIME:	99.1 %
STANDARD DEVIATION:	0.07		MONTHLY AVERAGE:	1.93 ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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	1.93	1.97	1.95	1.96	1.97	S	1.97	1.97	1.97	2.29	2.16	2.40	7.38	3.09	3.47	2.08	2.37	2.32	3.35	1.99	1.98	2.00	1.98	2.00	1.93	7.38	2.46	24	
2	1.98	2.01	1.98	2.04	2.11	S	2.02	2.00	2.00	2.00	2.00	1.98	2.27	2.29	2.29	2.10	2.54	3.22	4.59	2.86	3.19	3.57	3.05	3.13	1.98	4.59	2.49	24	
3	2.46	2.68	2.30	2.16	2.00	S	2.01	2.01	2.02	2.00	2.04	2.00	1.99	2.21	2.21	2.01	1.98	2.00	2.01	2.21	2.28	3.18	2.38	2.11	1.98	3.18	2.18	24	
4	2.12	2.12	2.20	2.24	2.35	S	2.45	2.38	2.33	C	C	C	C	C	C	1.92	1.93	1.91	1.93	1.95	1.94	1.94	1.93	1.96	1.95	1.91	2.45	2.09	24
5	1.96	1.96	2.04	1.96	1.97	S	1.95	1.96	1.96	1.98	1.95	1.95	1.90	1.92	1.89	1.90	1.91	1.89	1.88	1.88	1.90	1.89	1.91	1.89	1.88	2.04	1.93	24	
6	1.91	1.90	1.89	1.90	1.89	S	1.88	1.90	1.88	1.88	1.86	P	1.86	1.88	1.86	1.89	1.86	1.88	1.89	1.87	1.89	1.89	P	P	1.86	1.91	1.88	21	
7	P	P	P	R	2.06	S	1.90	1.94	1.90	2.03	2.01	1.96	2.01	1.96	2.04	2.01	2.06	1.96	1.92	1.89	1.91	1.90	2.43	2.24	1.89	2.43	2.01	20	
8	2.25	2.24	2.02	2.27	2.22	S	2.11	2.08	2.03	2.06	2.17	2.77	1.99	2.07	1.99	1.91	1.92	1.91	1.93	1.94	1.96	1.91	1.93	1.92	1.91	2.77	2.07	24	
9	1.90	1.90	1.90	1.92	1.92	S	1.90	1.91	1.90	1.91	1.96	2.01	2.06	2.03	2.11	1.90	1.90	2.05	2.86	1.93	2.01	2.56	2.93	2.93	1.90	2.93	2.10	24	
10	2.00	1.98	1.98	2.26	2.00	S	2.96	2.14	1.93	1.91	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.94	1.92	1.94	1.91	1.94	1.92	1.94	1.91	2.96	2.01	24	
11	1.93	1.93	1.93	1.92	1.92	S	1.93	1.91	1.93	1.91	1.93	1.91	2.04	1.96	2.09	2.06	1.96	1.98	1.94	1.96	1.94	1.97	2.02	2.00	1.91	2.09	1.96	24	
12	2.05	2.11	2.09	2.09	2.07	S	2.04	2.04	1.99	1.96	1.94	1.99	1.94	1.94	1.97	2.00	2.24	1.98	1.96	1.96	1.96	1.94	4.35	3.89	1.94	4.35	2.20	24	
13	2.23	1.92	1.92	1.92	1.95	S	2.33	2.88	1.97	1.98	2.26	2.35	2.09	2.23	2.44	2.08	1.94	1.93	1.94	1.93	1.95	1.93	1.94	1.94	1.92	2.88	2.09	24	
14	1.96	1.95	1.96	1.96	1.95	S	1.93	1.93	1.93	1.96	1.91	1.93	1.92	1.91	1.92	2.09	2.49	1.95	2.20	2.11	1.94	1.98	1.92	1.95	1.91	2.49	1.99	24	
15	1.93	1.93	1.91	1.95	1.92	S	1.91	1.93	1.92	1.94	1.93	1.93	1.92	1.89	1.89	1.89	1.89	1.88	1.89	1.89	1.87	1.88	1.88	1.89	1.87	1.95	1.91	24	
16	1.89	1.89	1.89	1.89	1.88	S	1.91	1.89	1.91	1.90	1.90	1.91	1.90	1.91	1.90	1.90	1.89	S1	S1	1.91	1.93	1.92	1.92	1.90	1.88	1.93	1.90	22	
17	1.92	1.93	1.91	1.91	1.95	S	1.94	1.95	1.96	2.28	2.97	2.15	2.13	2.15	2.19	2.21	2.20	1.97	1.90	1.91	1.90	1.89	1.92	1.90	1.89	2.97	2.05	24	
18	1.92	1.90	1.91	1.92	1.92	S	1.93	1.92	1.94	1.94	1.93	1.93	1.92	1.92	1.90	1.91	1.91	1.91	1.91	1.89	1.91	1.89	1.91	1.90	1.89	1.94	1.91	24	
19	1.92	1.91	1.92	1.91	1.93	S	1.93	2.06	2.12	1.92	1.90	1.95	1.87	1.89	1.87	X	1.88	1.96	1.96	1.94	2.12	1.98	1.96	1.95	1.87	2.12	1.95	23	
20	1.98	2.00	2.00	2.01	1.99	S	1.90	X	1.91	X	1.91	1.93	2.04	1.90	1.90	1.88	1.90	1.89	1.90	1.90	1.91	1.92	1.91	1.93	1.88	2.04	1.93	22	
21	1.90	1.90	1.90	1.92	1.90	S	1.93	1.94	1.93	1.91	1.92	1.92	1.93	1.90	1.92	1.90	1.90	1.97	1.97	1.96	1.96	2.00	1.96	1.92	1.90	2.00	1.93	24	
22	1.91	1.93	1.91	1.93	1.93	S	1.95	3.47	2.24	1.91	1.93	1.92	1.94	1.92	1.92	1.92	1.92	1.95	1.91	2.01	1.91	3.84	2.15	1.91	1.91	3.84	2.10	24	
23	1.95	1.92	1.94	1.92	1.94	S	1.94	1.93	1.95	1.93	1.94	1.93	1.93	1.94	1.92	1.94	1.92	1.94	1.93	1.93	1.92	1.92	1.92	1.90	1.90	1.95	1.93	24	
24	1.93	1.92	1.97	1.89	1.90	S	1.90	1.90	2.04	1.96	2.28	2.27	2.35	2.32	2.36	2.31	2.33	2.27	2.81	2.19	1.93	1.92	1.95	1.92	1.89	2.81	2.11	24	
25	1.90	1.90	1.92	1.91	1.91	S	1.90	1.92	1.90	1.92	1.90	1.91	1.91	1.94	2.22	2.19	2.61	2.71	2.24	2.29	1.94	1.93	1.95	1.93	1.90	2.71	2.04	24	
26	1.95	1.95	1.93	1.94	1.92	S	1.93	1.95	1.94	1.95	1.96	1.95	1.97	1.95	1.96	1.95	1.96	1.95	1.95	1.94	1.95	1.95	1.94	1.95	1.92	1.97	1.95	24	
27	1.93	1.94	1.93	1.95	1.94	S	1.94	1.96	1.95	X	1.95	1.94	1.95	1.91	1.93	1.91	1.92	1.91	1.91	1.90	1.89	1.89	1.90	1.89	1.89	1.96	1.92	23	
28	1.87	1.88	1.86	1.87	2.14	S	2.21	2.26	2.17	2.17	2.08	2.04	2.13	2.16	2.17	2.19	2.16	2.00	2.14	2.18	2.20	2.04	2.39	2.19	1.86	2.39	2.11	24	
29	2.15	2.27	2.30	2.15	2.34	S	2.44	2.63	2.49	2.23	2.12	2.02	2.08	2.06	2.03	2.18	2.91	3.05	1.94	1.93	1.96	1.93	1.94	1.95	1.93	3.05	2.22	24	
30	1.95	1.95	1.97	1.95	1.98	S	1.97	1.99	1.98	2.00	1.98	2.25	2.25	2.18	2.08	2.42	1.97	1.99	1.98	1.93	1.99	2.03	2.08	2.03	1.93	2.42	2.04	24	
31	2.01	1.96	1.97	1.96	1.91	S	1.93	1.92	2.10	2.21	1.88	1.94	2.02	1.91	1.90	1.90	1.98	1.91	1.93	1.92	1.92	1.91	1.93	1.93	1.88	2.21	1.95	24	
HOURLY MAX	2.46	2.68	2.30	2.27	2.35	NA	2.96	3.47	2.49	2.29	2.97	2.77	7.38	3.09	3.47	2.42	2.91	3.22	4.59	2.86	3.19	3.84	4.35	3.89					
HOURLY AVG	1.99	1.99	1.98	1.99	1.99	NA	2.03	2.09	2.01	2.00	2.02	2.04	2.19	2.04	2.07	2.02	2.07	2.07	2.15	2.00	2.00	2.11	2.14	2.10					

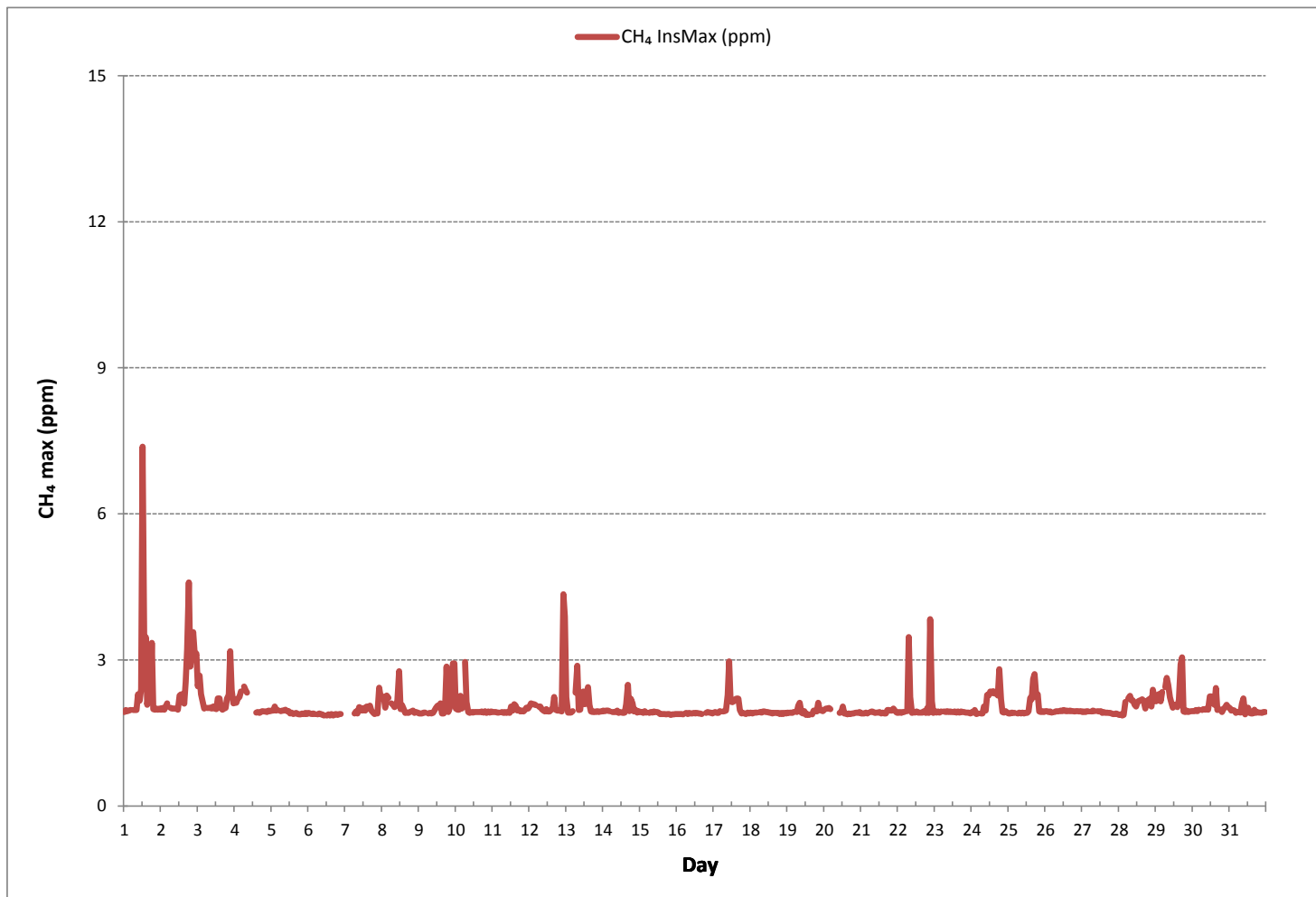
STATUS FLAG CODES

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:	695
MAXIMUM INSTANTANEOUS VALUE:	7.38 ppm @ HOUR 12 ON DAY 1
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.35
OPERATIONAL TIME:	731 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)



Wind: PRAMP_986
Poll.: PRAMP_986-CH₄[ppm]
Monthly: 17/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

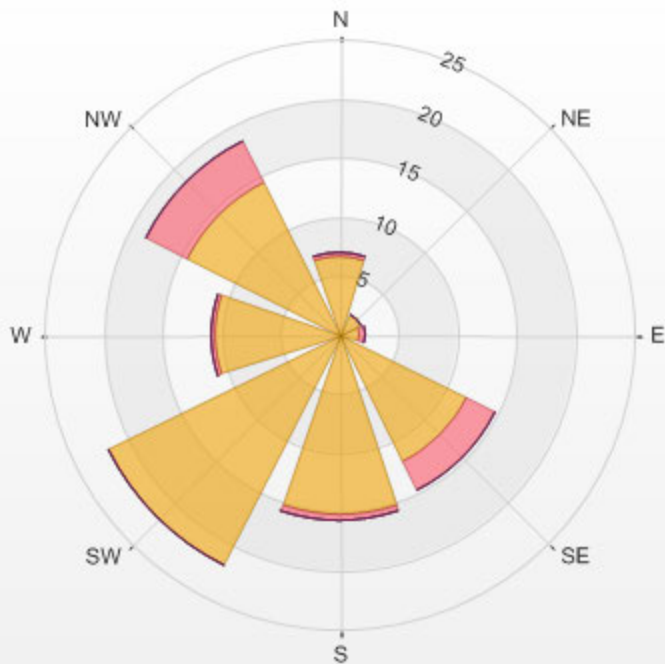
Calm: 6.97%

Calm Avg: 1.96 [ppm]

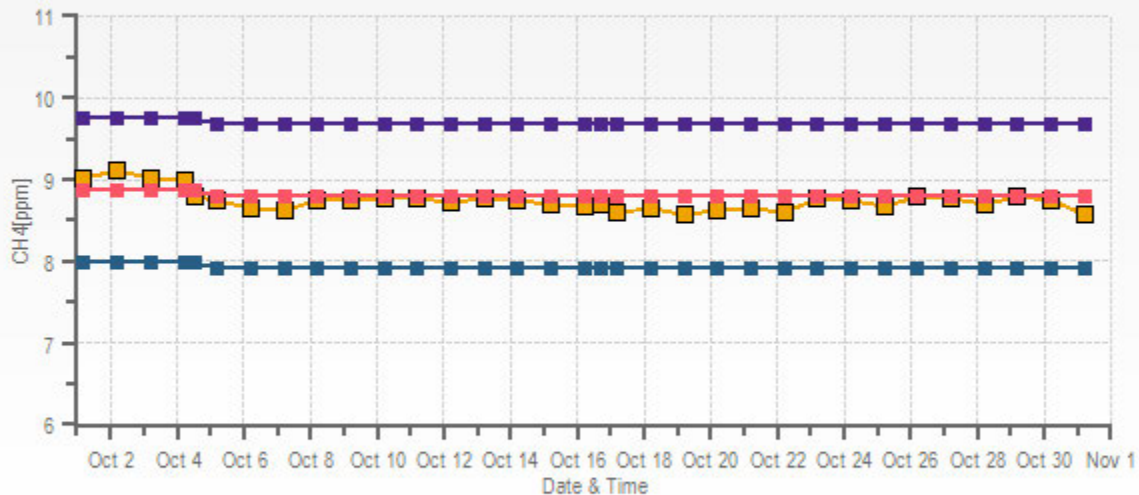
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.7	0.3	0.0	0.0	0.0	7.0
NE	2.0	0.0	0.0	0.0	0.0	2.0
E	1.7	0.6	0.0	0.0	0.0	2.3
SE	12.1	2.7	0.0	0.0	0.0	14.8
S	15.2	0.6	0.0	0.0	0.0	15.8
SW	21.9	0.0	0.0	0.0	0.0	21.9
W	10.5	0.4	0.0	0.0	0.0	11.0
NW	14.5	3.8	0.0	0.0	0.0	18.4
Summary	84.7	8.4	0.0	0.0	0.0	93.0

% Icon	Classes (ppm)	85	0-2	8	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 6.97% Calm Poll Avg: 1.96[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 17/10 Type: Span



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

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 2017

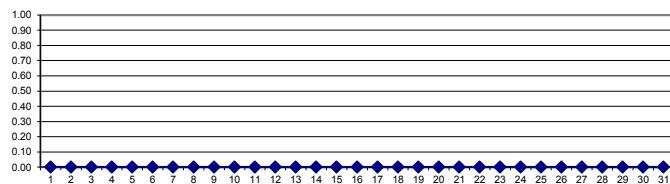
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	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
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	P	P	0.00	0.00	0.00	22
7	P	P	P	R	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	20
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	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
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
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	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.00	0.00	0.02	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
31	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	0.02	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			

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

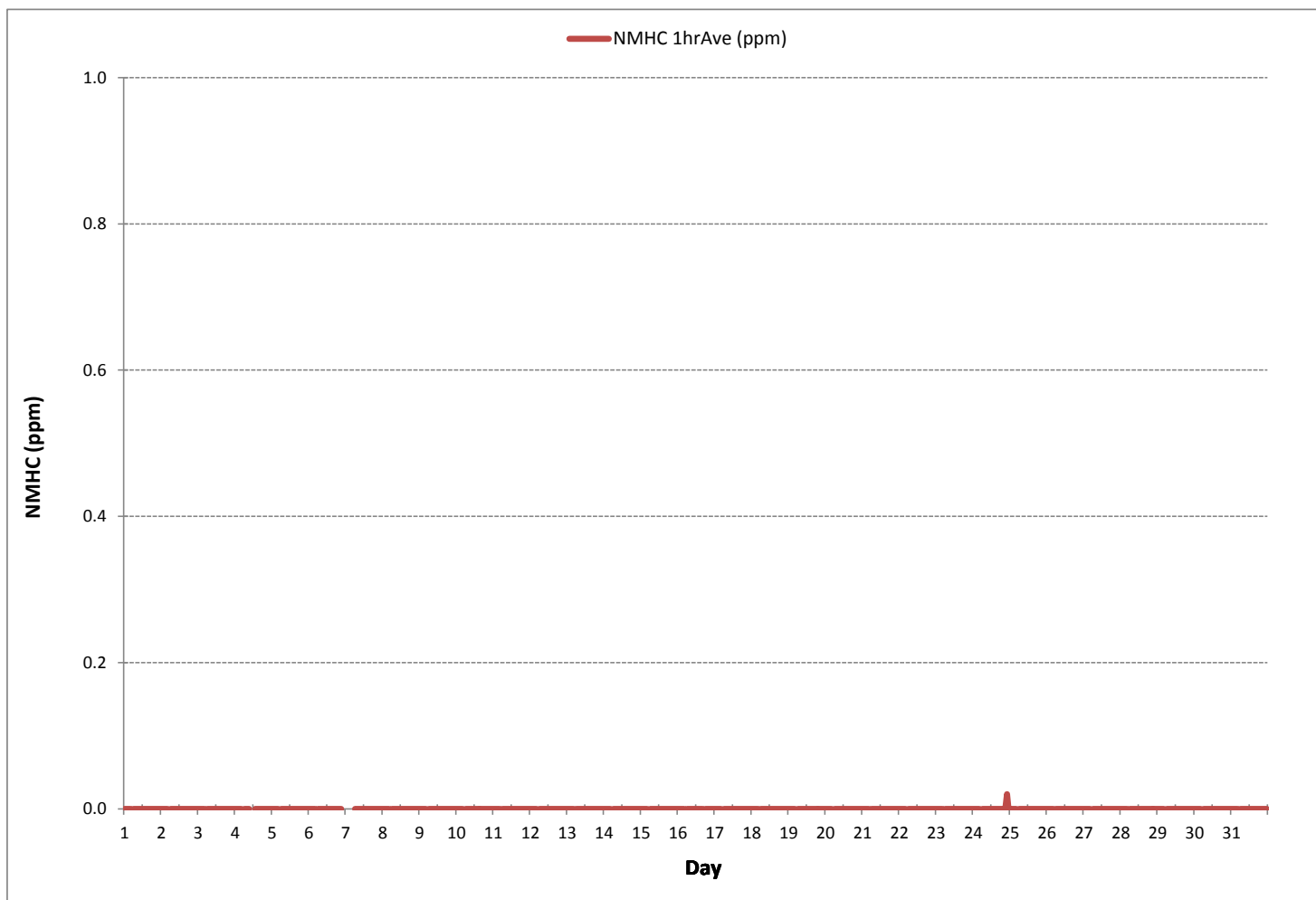
24 HR AVERAGES October 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	1				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.02	ppm	@ HOUR	22	ON DAY 24
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY 1
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	737	hrs
MONTHLY CALIBRATION TIME:	3	hrs	AMD OPERATION UPTIME:	99.1	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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 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	0.00	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.09	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	0.09	0.01	24
5	0.00	0.00	0.00	0.00	0.01	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	0.01	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	P	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	21
7	P	P	P	R	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	20
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	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
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S1	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
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	0.00	0.00	0.00	0.00	0.00	0.00	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	X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
20	0.00	0.00	0.00	0.00	0.00	S	0.00	X	0.00	X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
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	0.01	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
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	0.15	0.00	0.00	0.15	0.01	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
28	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	24
30	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	0.01	0.00	24
31	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	0.01	NA	0.09	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.15	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	0.01	0.00				

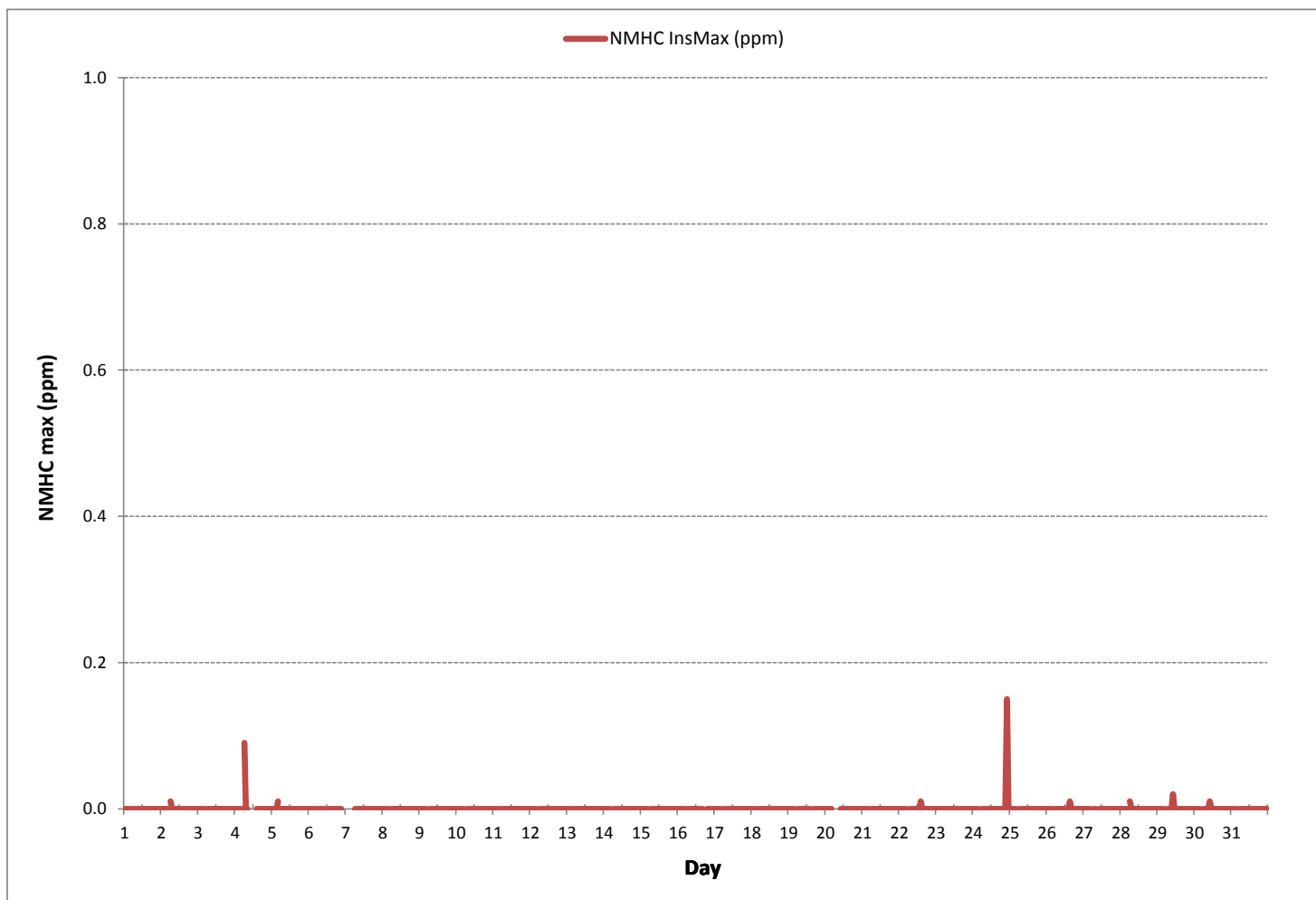
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	9				
MAXIMUM INSTANTANEOUS VALUE:	0.15	ppm	@ HOUR	22	ON DAY 24
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	731	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.01				

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



Wind: PRAMP_986
Poll.: PRAMP_986-NMHC[ppm]
Monthly: 17/10
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

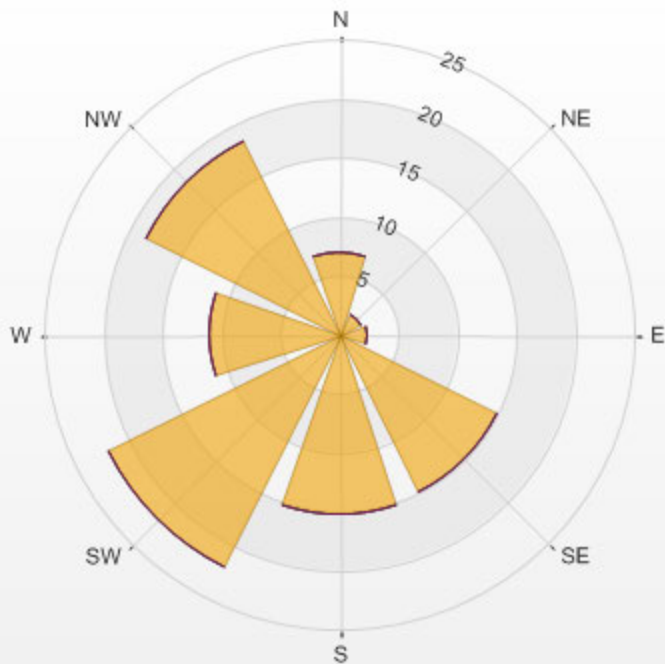
Calm: 7.01%

Calm Avg: 0.00 [ppm]

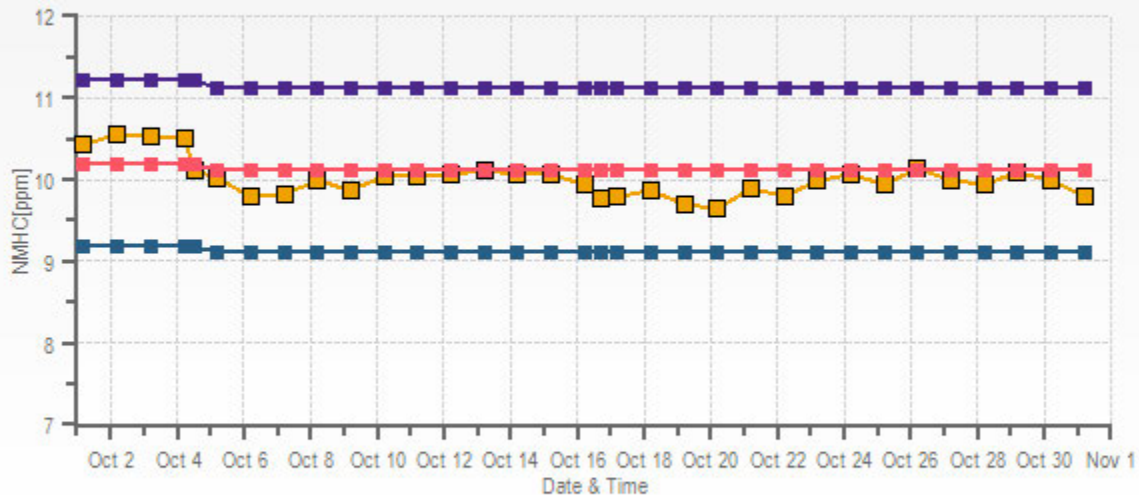
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.0	0.0	0.0	0.0	0.0	7.0
NE	2.0	0.0	0.0	0.0	0.0	2.0
E	2.3	0.0	0.0	0.0	0.0	2.3
SE	14.9	0.0	0.0	0.0	0.0	14.9
S	15.3	0.0	0.0	0.0	0.0	15.3
SW	22.0	0.0	0.0	0.0	0.0	22.0
W	11.0	0.0	0.0	0.0	0.0	11.0
NW	18.5	0.0	0.0	0.0	0.0	18.5
Summary	93.0	0.0	0.0	0.0	0.0	93.0

%	Icon	Classes (ppm)
93		0-0.1
0		0.1-0.3
0		0.3-1
0		1-2
0		>2.0

PRAMP_986 Poll.: PRAMP_986-NMHC[ppm] 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 7.01% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 17/10 Type: Span



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

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

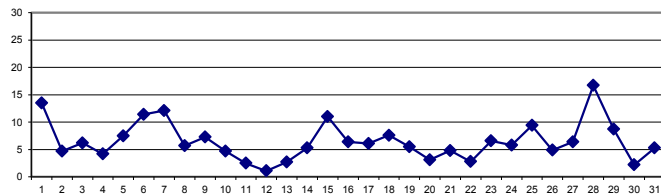
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	9.8	10.6	13.0	12.6	13.1	13.6	15.9	14.2	17.7	15.8	14.8	16.1	15.6	15.4	14.9	16.2	13.0	11.5	11.3	13.4	12.5	11.1	14.7	12.3	9.8	17.7	13.5	24	
2	8.5	7.0	6.3	6.4	5.7	5.4	8.5	5.3	6.0	7.5	8.8	10.6	9.6	10.7	9.1	10.3	6.7	3.9	2.5	3.7	3.6	4.3	4.3	3.3	2.5	10.7	4.7	24	
3	4.2	4.3	5.8	5.7	7.0	9.4	10.7	8.7	10.3	13.1	11.5	11.0	11.2	9.8	8.6	8.0	5.4	4.6	2.3	3.2	1.9	0.7	1.3	2.6	0.7	13.1	6.2	24	
4	1.9	2.7	2.6	3.3	3.0	2.9	3.1	2.2	1.9	4.4	9.0	7.4	8.2	8.5	9.2	10.1	9.2	6.0	3.2	6.0	3.7	4.6	5.3	6.1	1.9	10.1	4.2	24	
5	4.9	4.2	5.4	9.7	7.5	6.6	8.7	7.4	8.6	9.4	9.5	9.4	11.9	12.6	12.7	12.4	11.3	9.0	10.1	10.8	7.3	8.3	8.0	9.5	4.2	12.7	7.5	24	
6	10.8	9.9	8.6	7.6	7.3	7.9	8.9	11.9	12.7	17.2	22.0	17.1	15.1	14.0	13.9	11.4	10.4	9.7	9.4	10.6	9.6	9.6	P	P	7.3	22.0	11.4	22	
7	P	P	P	12.3	13.6	10.9	12.0	11.5	10.5	13.4	13.7	11.7	13.2	18.6	17.7	15.6	13.4	13.1	13.6	10.2	12.1	10.3	7.5	14.2	7.5	18.6	12.1	21	
8	12.1	14.5	15.3	11.9	12.1	14.2	13.1	13.8	15.8	14.2	14.1	10.1	5.2	11.6	6.8	7.0	6.2	5.6	7.5	8.1	8.4	11.2	13.2	12.5	5.2	15.8	5.7	24	
9	12.8	12.2	11.9	8.7	8.3	9.2	9.8	8.7	8.8	11.1	16.4	21.9	19.2	16.4	7.8	4.8	6.7	9.5	4.9	4.2	2.0	3.5	0.7	1.6	0.7	21.9	7.3	24	
10	2.1	2.4	1.5	0.8	2.2	1.5	0.8	4.8	6.2	7.4	7.6	8.5	9.4	9.4	10.0	8.3	7.8	6.0	6.2	6.7	6.2	5.7	4.1	4.0	0.8	10.0	4.7	24	
11	4.7	4.7	5.0	5.7	4.5	4.4	4.2	3.8	4.2	4.6	5.1	5.4	4.9	3.3	3.8	2.3	2.7	2.0	1.9	2.2	2.2	3.0	3.0	3.2	1.9	5.7	2.5	24	
12	2.8	2.9	2.9	3.0	2.8	2.7	2.0	3.4	3.6	3.2	2.0	3.1	5.8	5.7	3.0	4.4	5.6	3.8	2.3	0.8	1.3	2.2	0.7	0.8	0.7	5.8	1.1	24	
13	4.9	5.7	3.4	2.9	2.6	3.3	4.3	2.4	3.7	4.6	7.3	8.9	7.7	8.1	5.4	2.9	3.3	5.1	6.4	6.5	5.8	6.9	10.3	10.5	2.4	10.5	2.7	24	
14	11.9	10.1	10.2	10.2	9.0	8.3	7.0	7.5	7.2	7.5	8.8	8.0	9.0	8.4	9.9	8.5	4.5	1.9	1.5	0.5	1.1	1.5	3.8	2.4	0.5	11.9	5.3	24	
15	4.7	6.3	6.9	9.4	9.5	11.0	11.5	15.1	11.7	12.5	13.3	15.1	16.7	14.0	15.9	13.6	13.1	14.8	12.6	15.1	14.9	13.6	12.1	12.0	4.7	16.7	11.0	24	
16	12.5	10.0	10.3	10.0	8.3	7.3	7.7	6.8	7.4	8.1	8.7	7.7	7.5	6.8	6.7	8.4	9.4	8.1	4.8	3.8	4.6	4.5	6.7	7.0	3.8	12.5	6.4	24	
17	4.1	3.9	7.8	6.8	4.3	5.0	6.8	4.3	1.0	1.4	5.4	9.0	12.5	14.3	16.8	18.1	18.4	18.8	18.3	18.4	14.8	8.6	5.1	5.5	1.0	18.8	6.1	24	
18	6.5	6.6	7.1	4.2	2.8	3.1	3.3	5.5	6.9	7.6	9.2	9.6	10.0	12.8	13.4	11.6	13.7	14.1	12.7	17.1	17.6	18.1	6.9	5.1	2.8	18.1	7.6	24	
19	6.5	5.2	4.5	3.8	5.5	5.6	5.6	4.6	5.0	7.5	7.7	11.2	11.8	12.6	9.3	10.1	7.7	4.7	2.7	3.6	3.4	2.6	2.3	4.0	2.3	12.6	5.5	24	
20	3.3	2.5	3.3	3.7	3.0	3.4	2.9	3.3	2.5	4.3	3.2	5.3	5.5	7.1	8.1	9.8	7.7	3.2	4.3	4.2	3.6	3.3	4.0	2.5	2.5	9.8	3.1	24	
21	5.4	4.4	4.2	5.0	6.1	5.6	6.1	6.4	7.0	7.6	9.3	11.4	11.3	11.4	10.9	8.7	6.5	2.9	2.7	2.8	3.7	5.0	5.0	6.1	2.7	11.4	4.8	24	
22	7.1	7.1	8.4	6.5	3.3	4.4	2.7	0.4	2.6	2.6	2.3	5.5	6.0	6.9	9.2	8.9	4.5	5.0	6.9	6.6	5.8	3.9	4.1	5.5	0.4	9.2	2.8	24	
23	6.4	5.3	6.0	5.4	4.0	4.3	4.1	4.7	6.7	6.1	8.1	10.3	11.9	8.7	7.7	6.1	5.7	7.8	9.4	10.5	12.3	12.7	15.6	16.1	4.0	16.1	6.6	24	
24	14.0	14.0	15.4	16.0	14.1	11.6	13.1	13.8	16.3	16.1	20.6	20.5	18.7	17.7	11.6	11.2	4.5	1.7	1.8	1.9	3.3	1.6	3.0	7.9	1.6	20.6	5.8	24	
25	10.5	9.0	9.9	10.2	10.3	9.9	10.9	5.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	5.8	10.9	9.4	8	
26	X	X	X	X	X	X	X	X	X	X	X	6.7	7.6	6.7	5.8	5.4	5.9	6.4	5.0	6.7	6.9	5.8	4.2	4.9	5.7	4.2	7.6	4.9	14
27	4.8	5.7	5.3	5.5	4.9	3.8	4.4	5.7	5.4	5.9	7.1	8.6	9.7	10.4	10.0	8.0	6.8	7.7	7.7	7.9	7.5	7.6	6.4	11.7	3.8	11.7	6.4	24	
28	12.4	10.8	12.5	11.2	12.1	18.9	20.6	20.7	23.8	25.9	22.7	21.1	20.2	19.8	19.4	19.0	15.8	17.2	20.3	16.7	17.4	19.0	16.9	16.6	10.8	25.9	16.7	24	
29	15.9	21.2	16.2	18.0	13.7	11.5	13.5	11.1	11.2	14.6	13.7	15.5	15.8	11.6	9.1	10.1	6.7	0.8	3.2	4.1	3.6	2.9	5.4	4.0	0.8	21.2	8.7	24	
30	4.7	8.3	3.6	5.0	5.9	6.5	9.5	7.1	3.9	4.8	4.5	6.1	4.3	4.6	5.6	4.7	1.5	0.8	2.4	2.3	5.6	4.9	4.8	4.5	0.8	9.5	2.2	24	
31	6.8	7.8	6.2	5.2	7.6	5.8	6.3	5.3	13.7	15.4	12.7	13.1	13.6	12.6	13.0	11.3	10.9	10.1	9.8	9.2	8.0	8.6	7.3	6.5	5.2	15.4	5.3	24	
HOURLY MAX	15.9	21.2	16.2	18.0	14.1	18.9	20.6	20.7	23.8	25.9	22.7	21.9	20.2	19.8	19.4	19.0	18.4	18.8	20.3	18.4	17.6	19.0	16.9	16.6					
HOURLY AVG	2.0	2.7	2.6	2.5	2.6	3.0	3.4	3.6	4.8	5.2	5.9	6.4	6.7	6.7	5.9	5.6	4.1	3.1	2.4	2.3	1.7	1.5	1.8	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

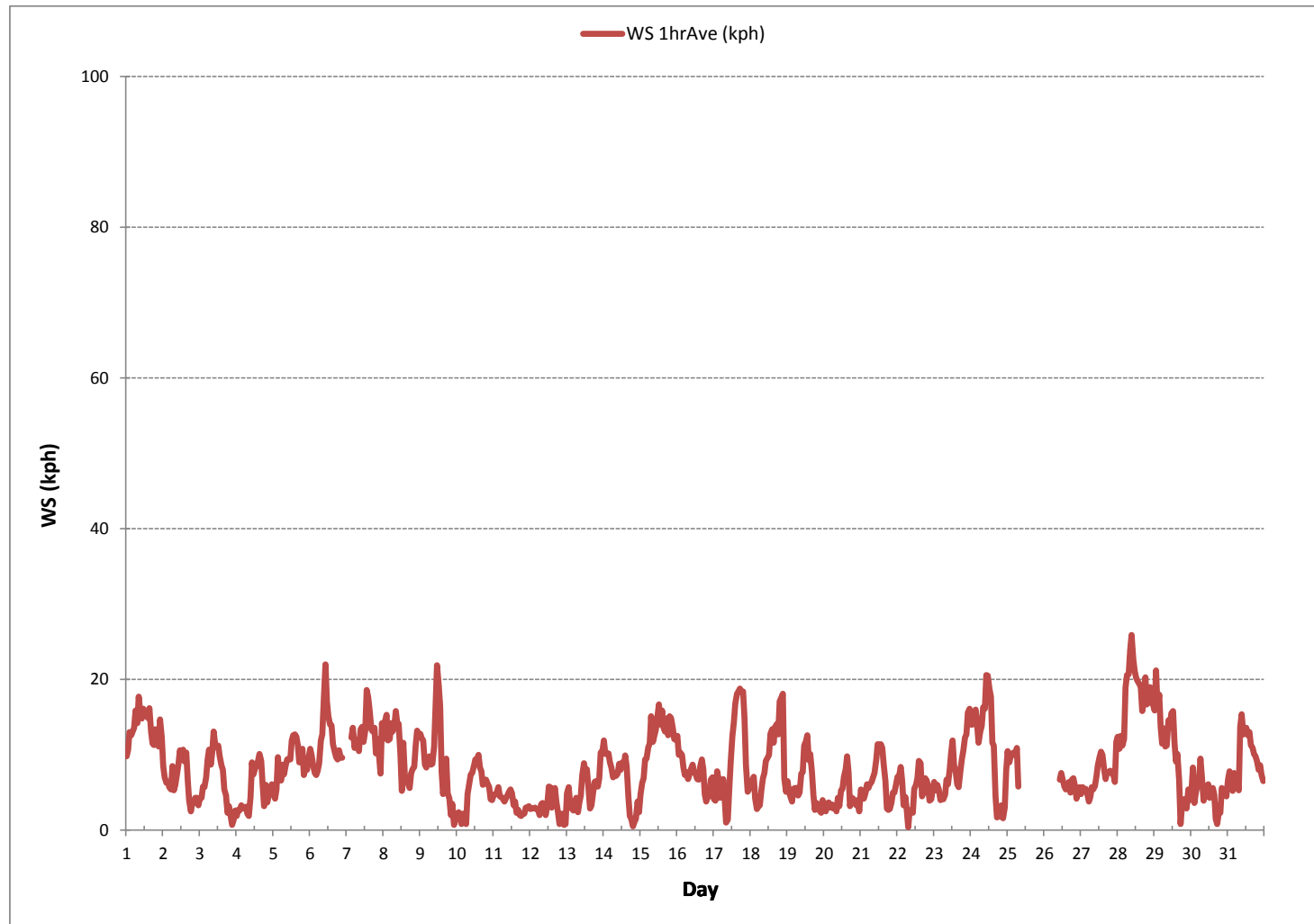
24 HR AVERAGES October 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	713				
MINIMUM 1-HR AVERAGE:	0.4	kph	@ HOUR	7	ON DAY 22
MAXIMUM 1-HR AVERAGE:	25.9	kph	@ HOUR	9	ON DAY 28
MAXIMUM 24-HR AVERAGE:	16.7	kph			ON DAY 28
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	713	hrs
STANDARD DEVIATION:	4.7		AMD OPERATION UPTIME:	95.8	%
			MONTHLY AVERAGE:	3.4	kph

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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	23.2	22.5	30.7	29.8	39.8	36.1	38.6	30.1	32.0	41.9	43.9	41.6	38.5	42.6	42.1	38.7	32.7	30.4	35.3	35.8	38.8	35.7	40.3	36.5	22.5	43.9	35.7	24	
2	22.3	18.2	13.6	10.6	9.3	9.3	16.5	14.4	16.6	19.4	26.2	26.6	27.5	25.3	23.7	23.7	19.6	11.5	7.3	6.8	5.7	6.7	8.2	6.9	5.7	27.5	15.7	24	
3	7.3	9.3	11.5	12.1	15.9	20.7	22.7	27.3	29.7	33.1	33.1	34.4	26.2	27.8	25.2	20.9	16.1	12.2	7.5	9.8	6.0	4.3	3.8	5.1	3.8	34.4	17.6	24	
4	3.7	4.3	4.8	5.7	6.5	5.0	6.9	5.3	4.4	14.4	18.5	21.5	18.7	22.7	21.4	23.7	24.7	17.6	8.5	11.0	6.9	7.4	7.8	9.5	3.7	24.7	11.7	24	
5	8.4	7.2	11.7	13.4	12.6	13.1	15.9	15.7	17.8	28.7	23.1	25.2	31.3	36.7	36.5	37.3	31.8	32.7	35.7	37.3	23.6	25.6	20.6	25.5	7.2	37.3	23.6	24	
6	25.6	36.3	27.7	22.4	22.7	23.1	26.1	34.6	38.5	55.2	73.3	P	40.8	35.9	40.1	38.2	30.8	29.2	25.7	32.2	32.8	33.6	P	P	22.4	73.3	34.5	21	
7	P	P	P	24.0	25.6	23.3	22.8	20.7	20.7	31.7	26.3	24.8	30.0	38.6	39.4	39.9	38.1	36.7	36.0	27.8	36.2	33.1	21.4	31.1	20.7	39.9	29.9	21	
8	28.2	31.6	33.4	20.7	21.8	26.9	25.4	30.2	34.7	34.5	31.2	22.9	20.9	28.7	19.7	19.8	15.3	12.5	14.3	14.0	17.8	18.6	23.1	21.0	12.5	34.7	23.6	24	
9	23.7	25.9	28.2	26.5	23.9	28.8	26.0	27.2	23.2	37.6	39.3	42.8	43.2	36.4	29.0	17.3	20.7	23.7	21.4	14.8	12.0	13.4	4.4	7.8	4.4	43.2	24.9	24	
10	4.9	5.6	3.7	2.5	6.3	6.2	6.3	13.3	20.5	20.4	22.7	22.9	30.0	25.1	26.5	27.0	25.9	18.3	18.7	17.6	17.7	17.6	10.9	8.8	2.5	30.0	15.8	24	
11	12.1	12.8	13.5	16.7	14.6	12.0	10.5	9.3	10.4	13.8	14.3	15.5	14.9	12.7	14.0	14.1	8.5	6.6	3.6	4.4	4.2	5.7	4.6	5.8	3.6	16.7	10.6	24	
12	5.2	5.1	6.2	6.0	5.2	4.8	3.8	5.5	9.3	11.3	8.3	10.4	16.3	14.4	13.4	13.9	12.1	9.8	8.0	2.5	5.6	5.9	3.1	5.1	2.5	16.3	8.0	24	
13	16.1	17.3	8.3	7.7	6.9	8.5	9.4	5.5	9.3	10.5	16.0	19.6	16.7	18.1	12.0	8.1	9.4	12.8	16.4	18.4	18.4	12.7	19.7	21.5	5.5	21.5	13.3	24	
14	22.9	23.5	26.4	22.5	22.9	24.2	20.6	20.9	22.0	19.4	22.5	25.0	25.4	21.9	20.9	17.7	17.3	4.3	5.6	4.9	4.9	5.7	7.2	7.0	4.3	26.4	17.3	24	
15	9.2	13.6	14.5	16.6	19.9	19.2	19.7	34.8	30.9	34.3	29.3	35.9	47.9	44.7	51.1	42.0	39.4	45.8	39.9	51.8	50.3	40.1	32.3	29.9	9.2	51.8	33.0	24	
16	32.1	24.0	30.3	29.5	25.0	21.7	26.1	19.0	24.4	20.6	22.1	26.0	22.6	20.6	14.6	27.6	24.5	20.0	9.3	7.6	8.6	9.8	15.1	11.8	7.6	32.1	20.5	24	
17	9.0	8.2	12.8	11.3	9.5	9.3	11.6	9.9	3.4	12.6	12.9	21.8	28.3	35.6	32.8	30.7	38.4	35.4	32.4	35.0	30.2	26.8	17.6	20.9	3.4	38.4	20.7	24	
18	18.9	16.7	15.7	12.1	12.2	9.1	10.5	9.1	12.5	12.9	14.8	17.3	19.5	27.3	27.0	27.7	31.6	29.9	29.7	35.3	37.1	29.0	17.7	13.6	9.1	37.1	20.3	24	
19	15.2	12.0	11.0	10.6	13.0	12.5	10.6	9.7	8.7	13.5	17.5	20.4	24.7	26.9	21.3	20.8	13.7	15.1	6.6	8.6	10.7	5.8	6.4	7.9	5.8	26.9	13.5	24	
20	7.4	5.7	5.2	7.1	6.7	8.0	7.9	7.8	5.9	10.6	10.4	10.2	16.8	21.7	21.5	32.6	24.2	10.1	6.5	7.3	6.8	5.2	5.8	10.7	5.2	32.6	10.9	24	
21	13.5	12.0	10.3	12.5	14.7	13.0	11.9	13.9	19.8	20.9	30.3	34.1	31.0	30.7	27.7	25.1	22.6	5.0	6.5	8.0	11.0	14.7	14.6	15.1	5.0	34.1	17.5	24	
22	17.4	16.4	18.5	17.4	15.1	12.2	11.7	3.0	10.0	11.7	10.6	13.9	14.9	17.0	25.3	24.9	12.9	16.0	24.1	23.5	19.5	10.1	19.4	14.1	3.0	25.3	15.8	24	
23	20.9	18.4	18.9	16.5	11.5	12.4	12.4	13.4	20.3	20.3	21.2	28.6	36.0	23.1	21.9	20.7	12.9	13.2	28.7	32.9	28.5	20.0	27.1	31.6	11.5	36.0	21.3	24	
24	35.7	36.1	34.2	30.9	31.6	30.9	44.7	39.2	49.8	43.2	47.5	54.5	45.8	38.7	27.7	27.4	11.7	7.3	12.3	9.8	7.5	5.1	8.1	20.3	5.1	54.5	29.2	24	
25	25.7	29.9	26.2	27.6	27.3	27.5	33.6	38.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	25.7	38.4	29.5	8	
26	X	X	X	X	X	X	X	X	X	X	X	X	17.6	26.5	21.2	15.3	13.1	14.9	15.3	9.8	11.2	10.0	8.5	8.4	9.0	8.0	26.5	13.5	14
27	7.6	11.9	10.3	8.8	8.4	8.8	10.4	11.6	13.1	15.9	13.5	18.8	26.3	25.8	23.0	23.2	18.5	14.8	17.6	18.3	17.0	17.9	23.8	38.1	7.6	38.1	16.8	24	
28	40.5	32.3	41.3	33.1	27.7	39.2	38.9	32.8	40.1	40.8	43.7	47.3	47.9	36.6	36.8	40.2	35.7	43.5	47.7	39.5	38.5	42.2	41.4	34.6	27.7	47.9	39.3	24	
29	33.5	37.1	33.7	32.6	25.4	21.5	23.8	22.0	22.0	26.8	38.3	38.1	38.4	30.4	25.2	22.6	20.9	5.3	6.1	7.5	7.9	6.0	10.4	11.1	5.3	38.4	22.8	24	
30	11.2	11.3	9.0	9.6	15.4	15.9	22.0	18.7	11.2	18.5	14.2	12.6	11.7	12.8	12.9	11.7	5.0	7.0	4.7	4.3	9.2	9.8	8.9	9.1	4.3	22.0	11.5	24	
31	12.6	13.3	13.2	14.1	14.1	10.9	12.1	16.9	33.8	35.0	31.2	32.7	34.6	34.0	37.7	32.4	28.4	26.5	24.9	26.2	24.4	23.1	19.1	18.1	10.9	37.7	23.7	24	
HOURLY MAX	40.5	37.1	41.3	33.1	39.8	39.2	44.7	39.2	49.8	55.2	73.3	54.5	47.9	44.7	51.1	42.0	39.4	45.8	47.7	51.8	50.3	42.2	41.4	38.1					
HOURLY AVG	17.7	17.9	18.1	17.0	17.1	17.1	18.6	18.7	20.5	24.5	25.8	26.6	28.3	27.6	26.1	25.5	22.0	18.8	18.4	18.8	18.2	16.7	15.5	16.8					

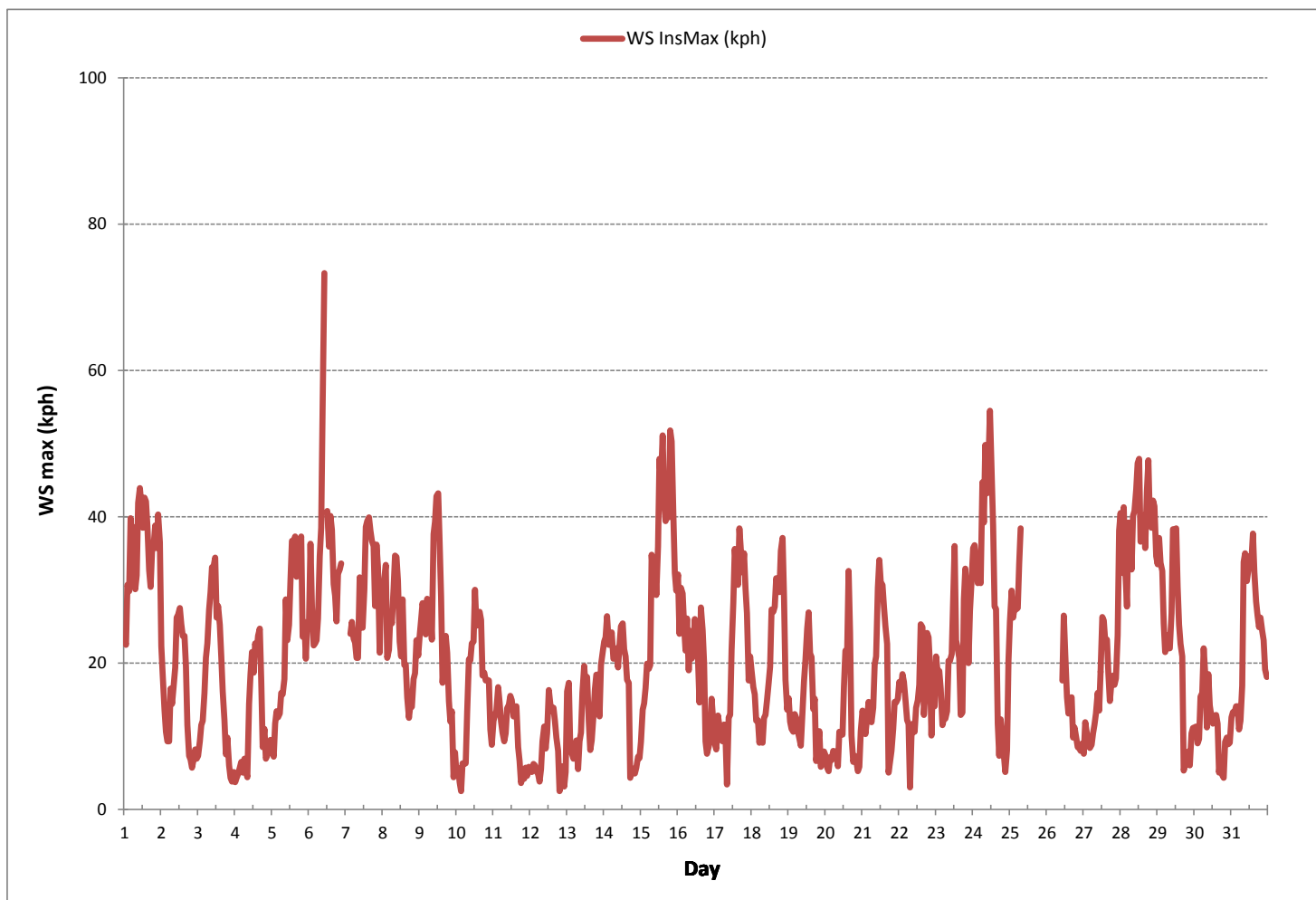
STATUS FLAG CODES

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:	73.3	kph	@ HOUR	10	ON DAY	6
OPERATIONAL TIME:	712	hrs				

WIND SPEED Instantaneous Maximum (WS kph)



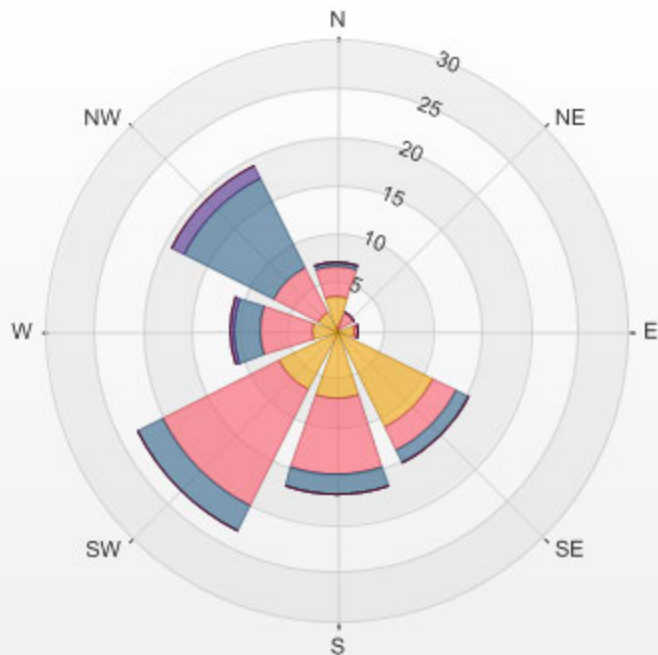
Wind: PRAMP_986
 Monitor: WSP [kph]
 Monthly: 17/10
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 3.51%

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	3.5	3.1	0.4	0.0	0.0	0.0	7.0
NE	0.3	1.8	0.0	0.0	0.0	0.0	2.1
E	1.8	0.4	0.0	0.0	0.0	0.0	2.2
SE	11.1	2.8	1.4	0.0	0.0	0.0	15.3
S	7.0	7.9	2.0	0.0	0.0	0.0	16.8
SW	6.7	13.5	2.8	0.0	0.0	0.0	23.0
W	2.7	5.2	2.8	0.3	0.0	0.0	10.9
NW	2.2	5.1	10.2	1.5	0.0	0.0	19.1
Summary	35.3	39.7	19.6	1.8	0.0	0.0	96.5

% Icon	Classes (kph)	40	6.0-12.0	20	12.0-20.0	2	20.0-29.0	0	29.0-39.0	0	>39.0
35	1.8-6.0										

PRAMP_986 2017/10/01 00:00 - 2017/10/31 23:00 Calm: 3.51% Calm Wind Avg Speed: 1.12(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 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	NW	WNW	NW	NW	NNW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	24
2	NNW	NNW	NNW	NW	NW	WNW	NW	NW	NNW	NNW	NNW	NW	NW	NW	NW	NNW	NNW	SSE	SE	ESE	SE	SE	SE	SE	NW	NNW	24
3	SSE	S	SSE	SSW	S	S	SSW	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SSW	SSW	WSW	SE	SSE	NW	SSE	SSW	S	24
4	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	S	S	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	SSE	SE	SE	SSE	S	24	
5	SE	SE	SSE	SSE	SSE	SSE	S	S	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	24
6	WSW	WSW	SW	SW	SW	SW	WSW	SW	WSW	WSW	W	WSW	WSW	WSW	W	W	WSW	W	WSW	WSW	WSW	W	P	P	WSW	22	
7	P	P	P	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NW	21
8	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	WSW	SW	S	SSE	SSE	SSE	SSE	S	S	WNW	WNW	24	
9	S	S	SSW	SSW	SSW	SW	WSW	WSW	WSW	WSW	W	WNW	WNW	WNW	WNW	WSW	WSW	W	WNW	WSW	WSW	W	SW	SW	WSW	24	
10	ESE	SE	SE	E	ESE	ESE	NNW	N	N	N	N	N	NNE	NNE	NE	NNE	NE	NNE	N	NNE	NNE	NNE	NNE	N	NNE	24	
11	N	N	N	N	N	N	N	NNW	NNW	N	NNW	N	NNW	N	NNW	NNW	NNW	NNW	SW	SSE	SE	ESE	ESE	SE	SE	N	24
12	SE	SSE	SE	SE	ESE	ESE	ESE	SE	S	WSW	SW	W	W	WSW	W	W	W	W	SW	SE	E	ESE	ESE	NNW	SSW	24	
13	N	N	NNW	NNW	NNW	WNW	NW	WNW	W	W	WNW	WNW	NW	NW	WNW	W	SSW	SSW	SW	SW	SSW	S	S	S	W	24	
14	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	NW	NW	SW	WSW	NNW	SW	SE	SSE	S	SW	24	
15	S	SSW	SSE	SSE	S	SSE	S	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	WSW	SW	SW	SW	WSW	WSW	SW	24	
16	WSW	SW	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SSW	SW	SSW	SSW	S	SE	SE	SE	SSE	SSE	SW	24	
17	SE	SSE	S	SSE	ESE	SE	S	SSE	NE	NW	NNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	W	W	SW	W	WNW	24	
18	W	WSW	WSW	WSW	SW	SSW	S	SE	SSE	SSE	SSE	SE	SE	SE	SE	ESE	ESE	SE	ESE	SE	SE	SE	SE	ESE	SE	24	
19	SE	SSE	S	SSE	SSE	S	SE	SE	SSE	SSE	S	S	S	S	SSW	S	S	SSE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	24	
20	ESE	ESE	SE	SE	ESE	SSE	SSW	SSW	S	SSW	SSW	S	W	WSW	WSW	WSW	WSW	SW	S	S	S	SSE	SE	SSE	SSW	24	
21	SW	SW	SSW	SSW	SSW	SSW	S	S	SSW	SSW	SW	WSW	SW	SW	SW	WSW	SW	SE	ESE	ESE	E	ESE	ESE	ESE	SSW	24	
22	ESE	ESE	ESE	ESE	ESE	SE	SE	NNE	SW	W	SW	SW	SSW	SSW	SW	SW	SW	WSW	W	W	W	W	SW	SW	SSW	24	
23	WSW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	WSW	W	W	WSW	SW	SW	S	S	SSW	SSW	S	SE	SSE	S	SSW	24	
24	SSW	SSW	SSW	S	SSW	SSW	SW	W	WNW	NNW	NW	NW	NW	NW	NW	NNW	NNW	W	SSW	SE	ESE	ENE	NE	W	24		
25	NE	ENE	ENE	NE	NE	NNE	NNE	NNE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NE	8	
26	X	X	X	X	X	X	X	X	X	X	SSW	SW	WSW	SW	SSW	SSW	SSW	SSE	SSE	SSE	SSE	SE	SE	SE	S	14	
27	SSE	S	S	SSE	SSE	SSE	S	S	SSW	SSW	S	S	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SW	W	SSW	24	
28	WSW	WSW	WSW	WSW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	24	
29	NW	NW	NW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	WSW	SSE	SSE	S	SSE	SSW	S	NW	24	
30	SSE	SSE	SE	SE	S	SSW	SSW	SSW	SSW	SSW	WSW	WNW	NW	NW	NW	WNW	SSW	SSE	ESE	E	ESE	ESE	ESE	ESE	S	24	
31	SE	SE	SE	SE	SE	SE	SSE	SW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	24

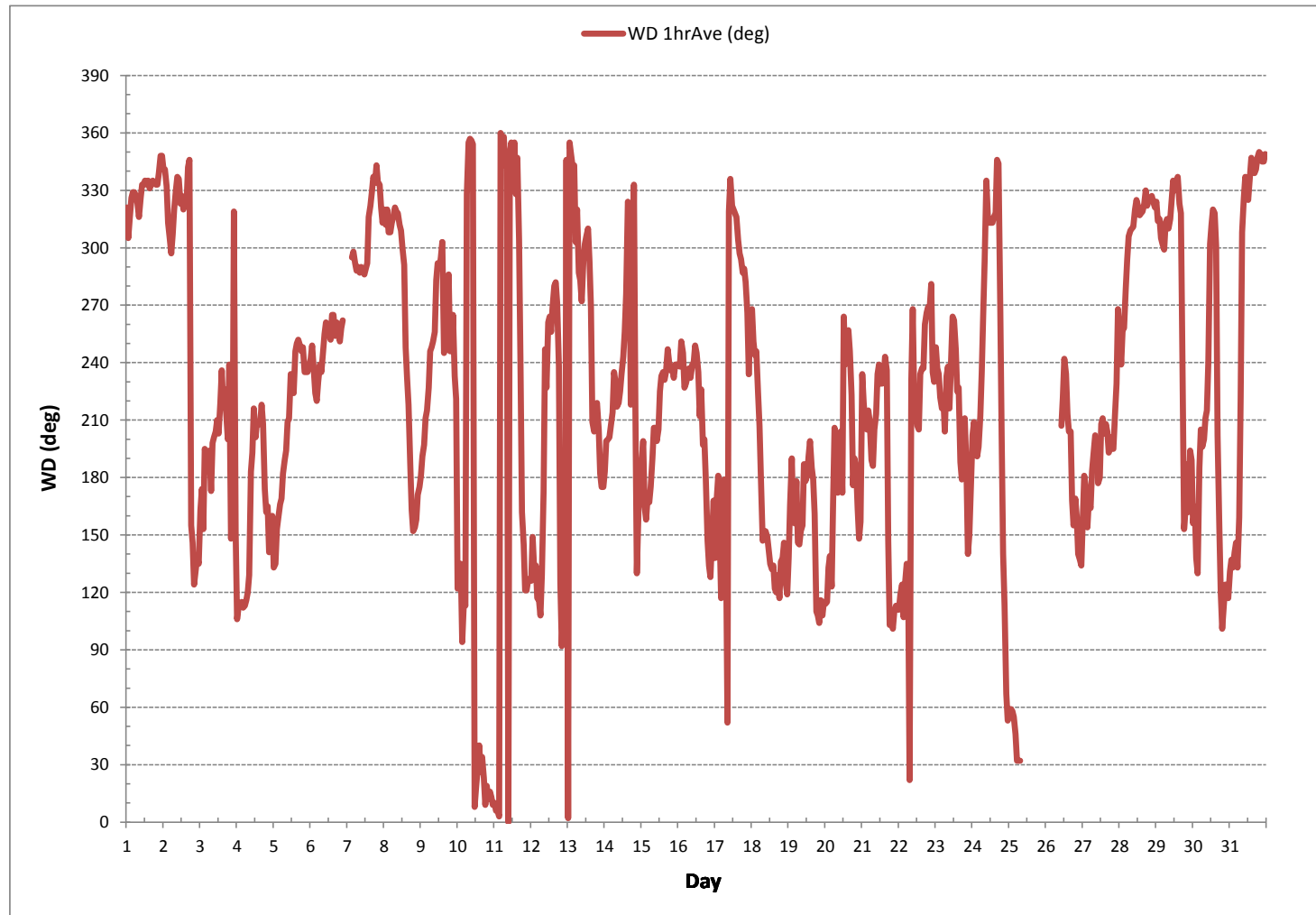
STATUS FLAG CODES

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:	713	hrs
STANDARD DEVIATION:	81		AMD OPERATION UPTIME:	95.8	%
			MONTHLY AVERAGE:	258 (WSW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

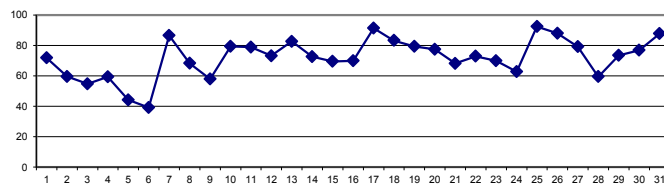
RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	64	67	69	72	73	75	74	77	81	77	76	72	74	71	74	74	72	72	76	77	70	69	60	59	59	81	72	24
2	63	67	73	76	76	76	76	73	70	62	55	51	44	40	37	34	31	37	50	63	69	71	67	69	31	76	60	24
3	75	74	74	69	67	67	67	68	63	52	46	43	39	36	34	32	33	34	41	42	53	62	68	73	32	75	55	24
4	76	79	82	83	84	84	85	85	78	58	46	41	39	35	33	30	29	34	44	55	55	59	64	66	29	85	59	24
5	67	69	74	68	68	72	70	70	62	55	51	45	38	32	23	19	18	19	18	18	22	27	27	27	18	74	44	24
6	28	31	32	34	35	36	35	35	37	39	39	41	42	41	38	38	39	42	45	46	50	59	P	P	28	59	39	22
7	P	P	P	95	93	92	92	91	92	88	86	82	83	78	81	86	83	84	88	92	86	81	81	84	78	95	87	21
8	81	80	72	74	80	74	72	72	69	69	67	64	61	56	53	50	49	59	71	75	76	71	71	71	49	81	68	24
9	69	66	66	70	70	66	64	65	64	60	50	44	43	43	52	49	40	42	51	55	59	57	69	77	40	77	58	24
10	82	86	87	89	90	90	89	89	86	81	76	72	71	70	70	69	69	70	73	78	79	78	80	81	69	90	79	24
11	83	83	83	82	83	83	84	85	84	79	76	73	71	69	68	63	60	65	79	84	87	89	90	89	60	90	79	24
12	89	88	88	88	88	87	87	86	88	82	76	63	55	52	48	42	47	55	61	69	75	79	80	83	42	89	73	24
13	81	87	92	93	94	95	95	96	95	89	86	82	78	80	77	77	76	71	68	65	69	75	79	83	65	96	83	24
14	79	78	77	76	76	77	75	74	73	71	66	63	59	55	53	56	62	67	73	84	88	89	86	85	53	89	73	24
15	86	88	86	87	83	81	80	73	75	89	91	83	66	59	54	53	51	48	50	51	54	57	60	63	48	91	70	24
16	64	69	67	65	68	70	68	65	63	59	56	52	48	47	48	54	67	82	92	95	95	95	94	94	47	95	70	24
17	95	96	97	97	97	97	96	96	97	97	98	97	97	95	96	93	90	83	77	75	75	76	84	90	75	98	91	24
18	87	86	91	92	91	92	91	91	92	89	87	81	77	74	70	72	73	72	72	70	77	84	92	94	70	94	83	24
19	94	92	91	91	93	90	92	92	92	83	71	64	56	50	53	54	59	66	79	84	86	89	91	93	50	94	79	24
20	91	92	93	93	92	91	87	88	89	88	82	72	59	57	52	47	48	55	72	74	78	84	87	88	47	93	77	24
21	77	77	83	87	84	84	87	86	82	71	59	51	48	45	42	39	38	54	71	73	75	76	75	71	38	87	68	24
22	72	73	73	74	78	80	77	82	82	87	86	82	77	73	64	60	63	64	62	61	62	67	76	75	60	87	73	24
23	76	78	79	81	87	88	90	84	77	72	64	57	53	52	52	51	55	59	53	60	78	86	81	66	51	90	70	24
24	60	57	57	60	64	66	62	56	55	57	56	50	47	44	44	46	51	56	64	75	89	94	97	98	44	98	63	24
25	99	99	100	100	100	100	100	99	97	95	93	91	89	86	87	87	85	83	82	83	90	92	89	90	82	100	92	24
26	88	89	90	89	89	89	89	89	90	89	86	83	81	78	75	76	81	89	94	96	94	94	95	96	75	96	88	24
27	97	96	94	93	95	93	91	87	84	80	77	73	69	64	71	73	72	74	75	74	73	71	66	59	59	97	79	24
28	59	63	62	62	63	63	63	64	58	51	48	47	49	50	49	48	50	55	68	69	70	68	72	76	47	76	59	24
29	76	75	76	78	80	82	82	82	83	75	66	60	57	53	51	51	56	66	81	84	85	87	88	88	51	88	73	24
30	89	89	87	87	83	80	80	78	77	76	73	71	63	59	53	55	63	77	86	88	84	82	82	82	53	89	77	24
31	79	76	75	74	80	84	87	87	84	85	85	85	85	91	90	91	95	96	97	97	96	96	95	95	74	97	88	24
HOURLY MAX	99	99	100	100	100	100	100	99	97	97	98	97	97	95	96	93	95	96	97	97	97	96	96	97	98			
HOURLY AVG	78	78	79	80	81	81	80	80	78	74	70	66	62	59	58	57	58	62	68	71	74	76	78	79				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
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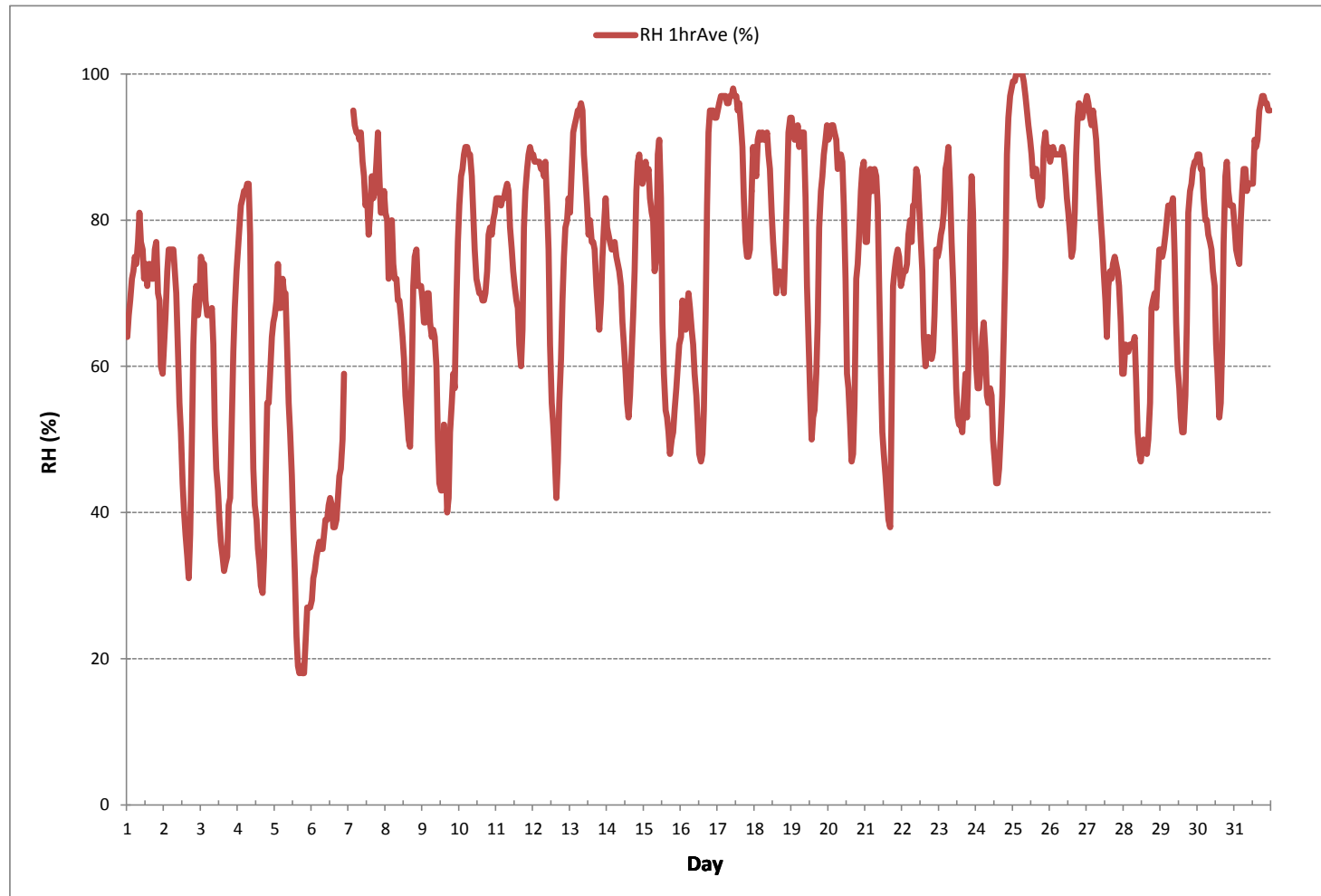
24 HR AVERAGES October 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	18	%	@ HOUR	16	ON DAY	5
MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR	2	ON DAY	25
MAXIMUM 24-HR AVERAGE:	92	%			ON DAY	25
OPERATIONAL TIME:						739 hrs
AMD OPERATION UPTIME:						99.3 %
STANDARD DEVIATION:	18					MONTHLY AVERAGE: 72 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 2017

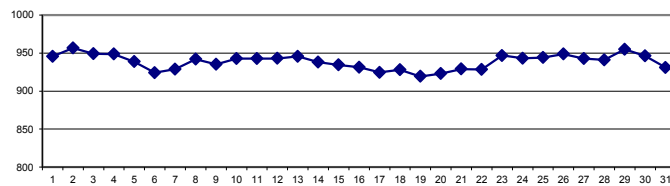
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	937	937	938	939	939	940	941	942	943	944	945	945	946	947	948	948	949	950	951	952	953	953	954	954	937	954	946	24	
2	955	955	955	956	956	957	957	958	958	959	959	958	958	958	957	957	957	956	956	955	955	955	955	955	955	955	959	957	24
3	954	954	953	952	952	951	950	949	949	948	948	948	948	947	947	947	948	947	947	947	948	948	949	949	947	954	949	24	
4	949	950	950	950	951	951	951	950	950	951	950	950	950	949	949	948	948	947	947	946	946	946	945	945	945	945	951	949	24
5	945	944	944	944	943	942	942	941	941	941	940	940	939	938	937	937	936	935	934	934	933	933	933	932	932	945	939	24	
6	931	931	930	929	928	927	926	925	924	924	923	923	923	922	921	921	920	920	920	920	920	920	P	P	920	931	924	22	
7	P	P	P	922	923	923	924	924	925	925	926	926	927	927	928	929	930	932	932	934	935	936	937	938	922	938	929	21	
8	938	939	940	940	941	942	942	943	944	944	944	945	944	944	944	943	943	943	942	941	940	939	939	938	938	945	942	24	
9	937	936	935	935	934	934	934	934	934	934	934	934	934	935	935	935	935	935	936	936	937	937	937	938	934	938	935	24	
10	938	939	939	940	940	940	941	942	942	943	944	944	944	944	944	944	944	944	944	944	944	944	944	944	938	944	943	24	
11	944	944	944	944	943	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	944	943	24	
12	942	942	942	941	942	942	942	943	942	943	943	943	943	943	943	943	943	943	943	943	944	944	944	944	941	944	943	24	
13	945	945	946	946	946	946	946	947	947	947	947	947	947	947	947	946	946	946	945	945	944	943	942	941	941	947	946	24	
14	940	939	938	937	937	937	937	937	936	936	936	937	937	937	937	937	938	938	939	940	940	941	941	941	936	941	938	24	
15	941	941	940	940	939	937	936	936	935	935	934	933	932	932	932	931	931	931	931	931	931	931	931	931	931	941	934	24	
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17	926	926	926	925	924	923	923	922	921	920	920	920	920	920	921	923	925	926	927	928	929	930	931	932	920	932	925	24	
18	932	933	934	934	934	934	934	933	933	933	932	931	930	929	928	926	924	923	922	921	919	919	918	918	918	920	919	24	
19	918	918	918	918	918	919	919	919	919	919	920	920	920	920	920	920	920	920	920	919	919	919	919	920	918	920	919	24	
20	920	920	920	920	920	921	921	921	922	922	923	923	923	923	923	924	924	925	925	926	926	927	927	927	920	927	923	24	
21	927	928	928	929	929	930	930	930	931	931	931	931	931	930	930	930	930	929	929	928	927	926	925	924	924	931	929	24	
22	924	923	923	922	922	923	923	923	924	925	926	926	927	928	929	930	931	932	933	935	936	937	938	939	922	939	928	24	
23	940	941	942	944	945	945	946	947	949	950	950	951	951	951	951	950	949	948	948	948	946	944	942	941	940	951	947	24	
24	940	940	940	940	940	940	940	941	943	945	946	947	947	947	947	947	946	946	945	944	942	942	939	938	938	947	943	24	
25	936	935	933	932	932	933	933	935	938	941	943	945	947	948	950	951	952	952	953	953	953	954	954	954	932	954	944	24	
26	953	952	951	950	949	949	948	948	948	948	948	948	948	948	948	949	949	948	948	948	947	947	947	946	946	953	949	24	
27	946	946	946	946	946	945	945	945	945	945	944	943	943	942	942	941	941	940	940	939	939	938	937	936	936	946	943	24	
28	936	936	936	936	936	937	937	938	938	939	939	940	941	941	942	942	943	944	945	946	946	947	948	949	936	949	941	24	
29	950	950	951	952	952	953	954	954	955	955	956	956	957	957	957	958	958	958	957	957	956	956	955	954	950	958	955	24	
30	953	952	951	950	949	948	948	947	947	946	946	946	946	946	946	945	945	944	944	942	941	939	938	938	938	953	946	24	
31	936	934	932	931	930	929	927	927	927	927	927	927	928	928	929	930	931	932	933	934	935	936	936	937	927	937	931	24	
HOURLY MAX	955	955	955	956	956	957	957	958	958	959	959	958	958	958	957	958	958	958	957	957	956	956	955	955					
HOURLY AVG	939	939	939	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939					

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

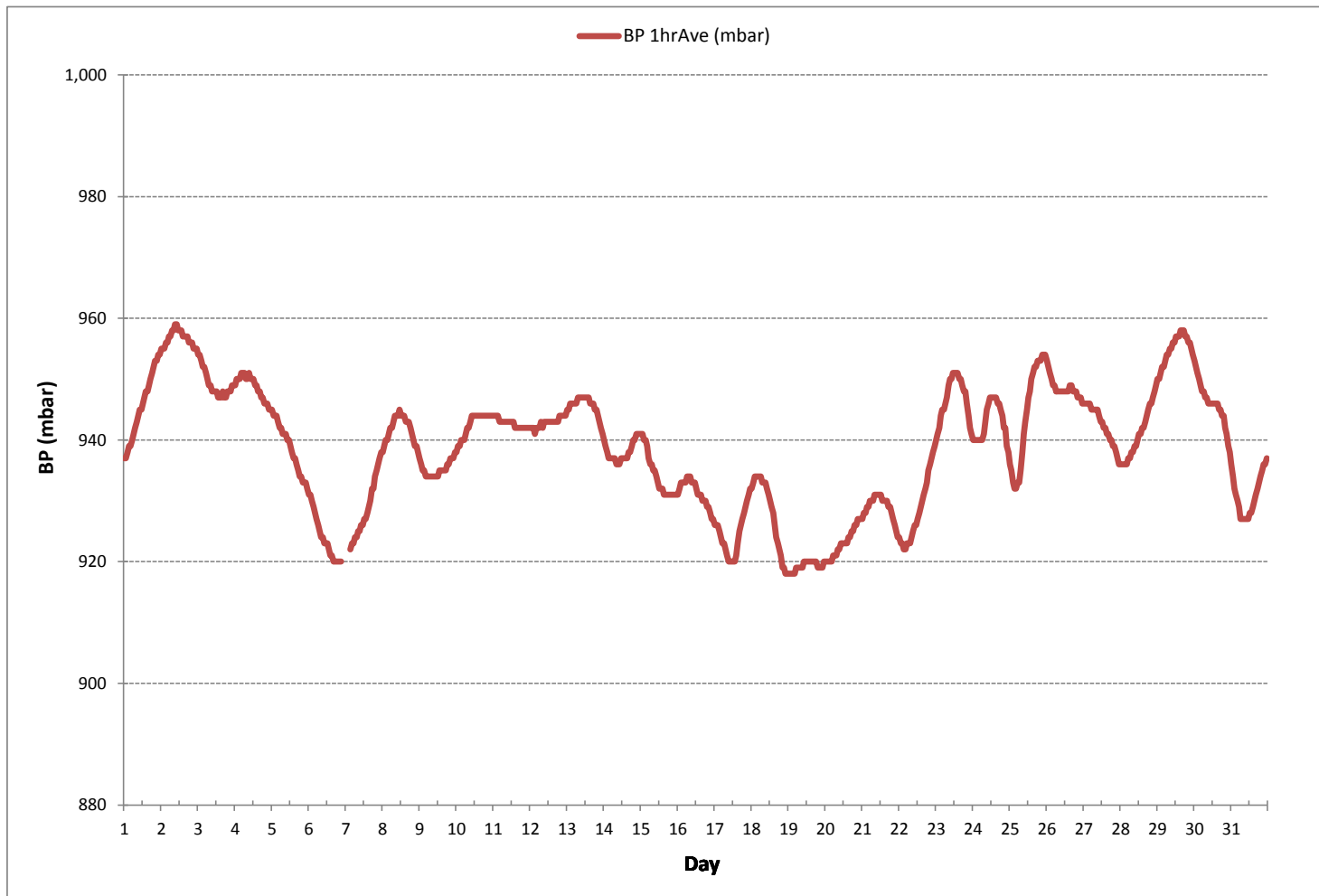
24 HR AVERAGES October 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	918	mbar	@ HOUR	22	ON DAY	18
MAXIMUM 1-HR AVERAGE:	959	mbar	@ HOUR	9	ON DAY	2
MAXIMUM 24-HR AVERAGE:	957	mbar			ON DAY	2
OPERATIONAL TIME:						739 hrs
AMD OPERATION UPTIME:						99.3 %
STANDARD DEVIATION:	10					MONTHLY AVERAGE: 939 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - October 2017

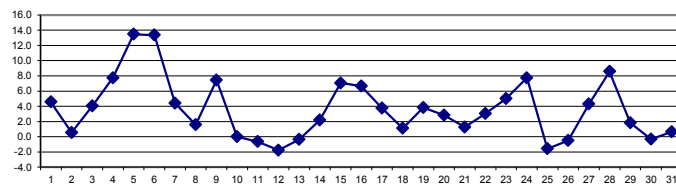
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	8.0	7.5	6.9	6.2	5.6	4.2	4.2	3.9	3.8	4.4	4.6	5.2	5.0	5.3	4.9	4.5	4.3	4.2	3.6	3.2	3.0	2.7	2.7	1.5	1.5	8.0	4.6	24
2	0.2	-0.8	-2.0	-3.1	-3.5	-3.6	-2.8	-2.4	-1.6	0.7	2.3	3.3	4.4	5.1	6.2	7.0	8.0	6.7	2.3	-1.3	-2.9	-3.4	-3.0	-3.0	-3.6	8.0	0.5	24
3	-3.5	-3.0	-3.3	-2.5	-1.9	-1.2	-0.9	-1.2	0.5	3.4	5.3	6.5	8.5	10.5	11.5	12.9	12.4	12.4	9.6	8.9	6.1	3.8	1.8	0.7	-3.5	12.9	4.1	24
4	0.6	-0.2	-1.3	-1.9	-2.0	-2.4	-2.1	-0.7	2.9	9.0	12.7	14.3	15.7	17.1	18.0	18.7	18.8	16.8	12.1	8.7	9.3	8.2	6.9	6.4	-2.4	18.8	7.7	24
5	6.2	5.4	5.0	6.7	6.6	5.8	6.6	7.2	10.2	12.6	14.8	16.6	18.1	19.4	20.5	21.5	21.4	20.2	18.9	18.2	16.4	15.6	14.9	14.7	5.0	21.5	13.5	24
6	14.4	13.9	13.4	12.7	12.2	12.3	13.2	13.2	13.3	14.1	14.5	14.3	14.1	14.6	15.4	14.6	14.2	13.4	12.6	12.0	11.3	10.2	P	P	10.2	15.4	13.4	22
7	P	P	P	5.7	5.4	5.2	5.1	5.2	5.3	5.8	6.2	6.6	6.7	7.1	6.5	5.7	5.3	4.1	2.4	1.0	1.1	0.6	0.8	0.9	0.6	7.1	4.4	21
8	0.4	0.4	0.2	0.0	0.0	-0.1	-0.4	-0.8	-1.2	-0.9	-0.2	0.9	2.0	3.5	5.1	6.2	6.5	4.3	2.0	0.9	0.8	2.2	2.5	3.2	-1.2	6.5	1.6	24
9	4.0	5.1	6.0	6.6	6.9	7.5	7.5	7.0	7.4	9.0	11.3	11.4	11.4	11.0	9.9	10.3	11.6	10.4	8.0	6.0	4.8	4.4	1.4	-0.5	-0.5	11.6	7.4	24
10	-2.1	-3.2	-4.0	-4.3	-5.1	-4.0	-2.9	-1.0	0.9	1.5	1.9	2.7	2.4	2.2	2.0	2.0	2.0	1.9	1.7	1.3	1.2	1.3	1.1	0.9	-5.1	2.7	0.0	24
11	0.7	0.5	0.4	0.2	0.0	-0.4	-0.5	-0.8	-0.4	0.2	0.6	0.8	1.1	1.4	1.3	2.7	3.1	1.6	-1.8	-3.4	-5.0	-5.6	-6.0	-6.2	-6.2	3.1	-0.6	24
12	-6.8	-7.3	-7.6	-7.8	-8.0	-8.5	-8.8	-9.2	-5.5	-2.2	0.2	2.4	4.1	4.6	5.5	6.4	6.2	4.0	2.0	-0.1	-1.0	-1.6	-1.9	-1.8	-9.2	6.4	-1.8	24
13	-0.8	-0.7	-1.1	-1.4	-1.5	-1.6	-1.6	-1.9	-1.7	-0.6	0.0	0.9	1.5	1.2	1.2	1.3	1.5	1.2	1.0	0.7	-0.4	-1.7	-2.2	-1.8	-2.2	1.5	-0.4	24
14	-0.6	-0.3	-0.4	-0.7	-0.6	-0.3	0.0	0.1	0.8	1.9	3.5	4.8	6.3	7.5	8.0	7.6	6.9	5.9	3.9	0.3	-2.2	-1.7	0.2	1.3	-2.2	8.0	2.2	24
15	0.8	-0.2	0.1	-0.4	1.1	2.1	2.8	4.7	6.0	5.3	5.7	8.4	11.0	11.7	12.0	12.0	12.2	12.6	12.2	11.6	10.6	9.4	9.0	8.6	-0.4	12.6	7.1	24
16	8.4	7.4	7.0	6.5	5.7	4.8	4.7	4.8	5.7	7.0	8.0	9.5	10.0	10.2	10.0	9.0	7.7	6.1	5.0	4.7	4.6	4.5	4.3	3.9	3.9	10.2	6.6	24
17	3.6	4.1	4.7	4.7	4.8	4.9	5.3	5.2	5.1	5.3	4.9	4.6	4.0	3.9	3.7	3.9	3.7	3.5	3.1	2.8	2.0	1.5	0.8	0.3	0.3	5.3	3.8	24
18	0.2	0.3	-0.3	-0.9	-1.6	-2.8	-2.8	-3.8	-2.6	-0.9	0.4	2.5	3.7	4.5	4.4	4.2	3.7	3.2	3.1	3.4	2.9	2.4	1.7	1.3	-3.8	4.5	1.1	24
19	1.6	1.6	0.9	0.2	-0.5	0.2	-1.1	-0.7	0.3	3.6	7.0	9.4	11.2	12.2	11.2	11.5	10.4	7.8	4.2	2.1	1.0	-0.2	-1.1	-1.1	-1.1	12.2	3.8	24
20	-1.0	-1.5	-1.8	-1.6	-0.7	-0.2	1.6	1.6	1.1	2.1	4.2	7.1	9.0	9.7	10.3	10.2	9.5	7.1	2.6	2.2	0.9	-0.7	-1.6	-2.1	-2.1	10.3	2.8	24
21	1.1	0.7	-0.7	-1.5	-0.6	-1.0	-2.2	-2.2	-0.7	2.0	4.0	5.1	6.2	7.0	7.3	7.8	7.3	3.3	-0.8	-2.0	-2.3	-2.9	-2.8	-2.0	-2.9	7.8	1.3	24
22	-1.9	-1.2	-0.7	-0.5	-0.6	-0.4	0.2	-0.4	0.1	0.8	1.5	2.7	3.7	5.1	7.8	8.5	8.0	7.5	7.6	7.4	6.9	5.1	2.4	3.2	-1.9	8.5	3.0	24
23	3.1	2.3	2.3	1.7	0.0	-0.2	-0.8	0.6	2.0	3.6	5.2	6.9	8.5	9.0	9.3	9.4	8.3	7.3	8.0	7.9	6.4	5.6	6.3	7.8	-0.8	9.4	5.0	24
24	8.5	9.8	10.2	10.1	9.9	10.4	11.6	12.9	12.8	10.0	8.8	8.8	8.7	8.8	8.5	7.7	7.0	6.0	5.1	4.4	2.9	1.3	0.7	0.7	0.7	12.9	7.7	24
25	0.6	0.6	0.5	0.6	0.6	0.5	0.4	0.1	-0.4	-0.6	-0.3	-0.4	-0.6	-0.8	-1.1	-1.4	-1.7	-1.9	-2.3	-3.9	-7.4	-6.9	-6.1	-6.1	-7.4	0.6	-1.6	24
26	-4.9	-5.3	-4.2	-3.5	-2.9	-2.0	-1.7	-2.0	-2.2	-0.9	0.9	1.8	2.4	3.4	4.1	4.0	2.7	0.7	-1.3	0.0	0.9	0.3	-0.7	-1.2	-5.3	4.1	-0.5	24
27	-0.9	-1.0	-0.5	-2.1	-1.4	-0.7	-0.2	1.1	2.2	3.3	4.3	5.9	7.2	9.1	7.3	7.2	7.7	7.2	6.9	6.7	6.8	7.3	8.7	11.0	-2.1	11.0	4.3	24
28	11.0	10.3	10.9	11.0	11.1	11.3	10.6	9.9	9.4	9.6	9.3	9.7	9.7	9.7	10.1	9.9	9.2	8.0	5.7	4.7	4.3	4.0	3.4	2.7	2.7	11.3	8.6	24
29	2.4	2.4	2.2	2.2	1.6	1.3	1.1	0.9	0.9	2.4	3.8	4.5	5.1	6.0	6.3	6.2	4.8	2.0	-1.1	-2.2	-1.7	-2.4	-2.5	-2.4	-2.5	6.3	1.8	24
30	-3.0	-3.1	-3.0	-3.0	-1.8	-1.3	-1.2	-1.2	-1.1	-0.6	-0.1	0.9	2.2	3.1	4.3	4.5	2.9	-0.1	-1.6	-1.9	-1.2	-0.6	-0.6	-0.3	-3.1	4.5	-0.3	24
31	0.3	0.4	0.7	1.0	1.3	1.0	0.9	1.5	3.0	3.4	3.2	3.4	3.5	2.1	0.8	-0.1	-0.6	-0.8	-1.0	-1.2	-1.4	-1.6	-2.1	-2.5	-2.5	3.5	0.6	24
HOURLY MAX	14.4	13.9	13.4	12.7	12.2	12.3	13.2	13.2	13.3	14.1	14.8	16.6	18.1	19.4	20.5	21.5	21.4	20.2	18.9	18.2	16.4	15.6	14.9	14.7				
HOURLY AVG	1.7	1.5	1.4	1.3	1.3	1.3	1.5	1.7	2.5	3.7	4.8	5.9	6.7	7.3	7.5	7.6	7.3	6.0	4.3	3.3	2.5	2.0	1.3	1.3				

STATUS FLAG CODES

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

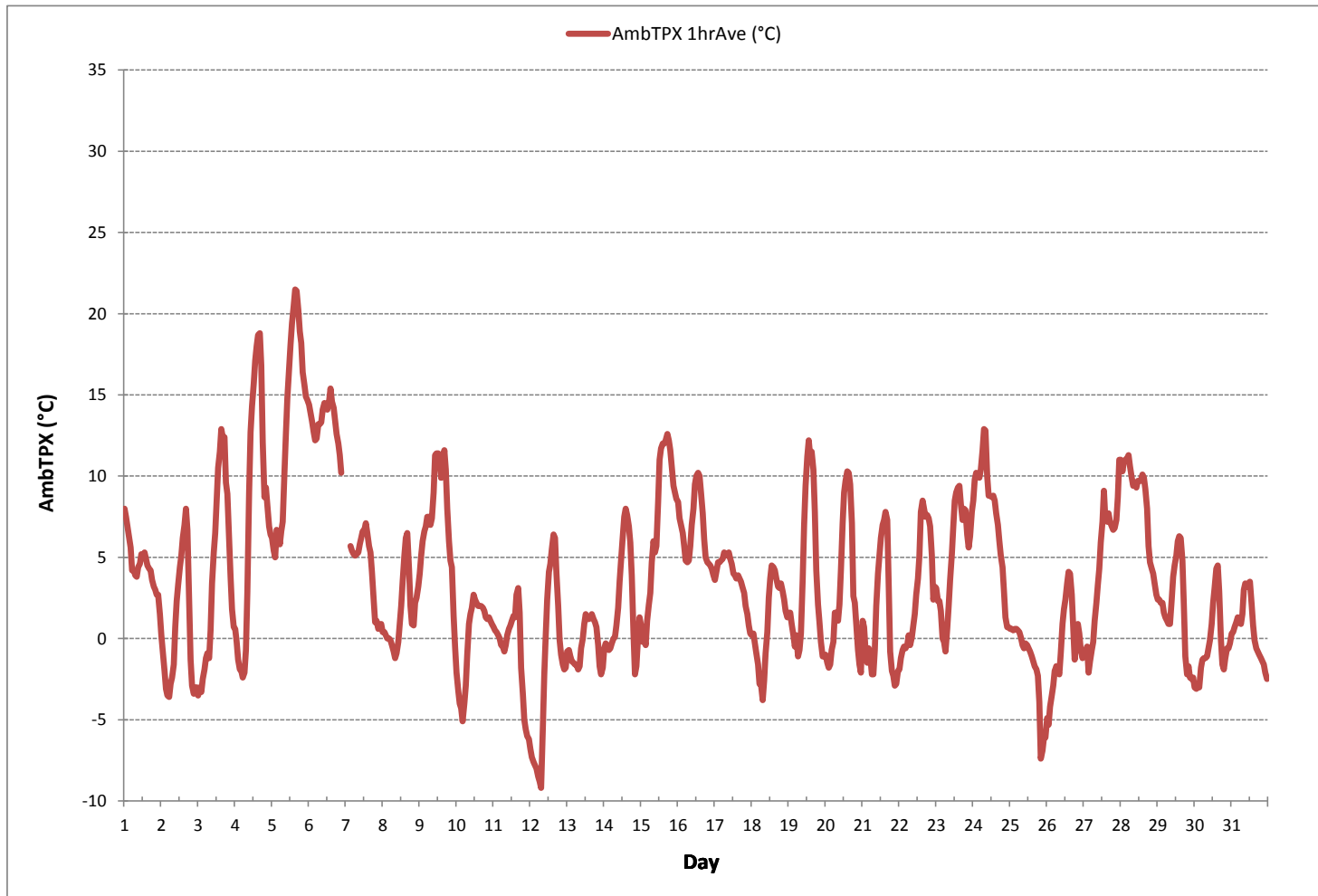
24 HR AVERAGES October 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-9.2	°C	@ HOUR	7	ON DAY	12
MAXIMUM 1-HR AVERAGE:	21.5	°C	@ HOUR	15	ON DAY	5
MAXIMUM 24-HR AVERAGE:	13.5	°C			ON DAY	5
OPERATIONAL TIME:					739	hrs
AMD OPERATION UPTIME:					99.3	%
STANDARD DEVIATION:	5.2				MONTHLY AVERAGE:	3.6 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

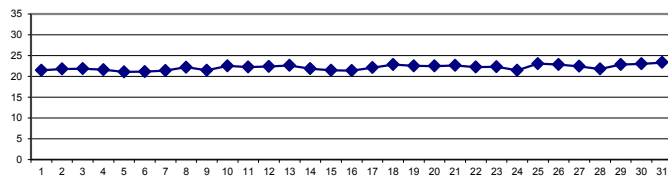
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	21.0	21.1	21.1	21.1	21.2	21.1	20.8	20.9	21.7	22.3	22.8	22.9	21.1	20.9	20.9	21.0	21.1	20.6	20.3	21.4	22.0	22.4	22.7	22.9	20.3	22.9	21.5	24	
2	23.0	22.9	22.8	22.5	22.2	22.1	21.9	21.7	21.8	22.3	23.0	21.9	20.9	20.9	20.9	21.1	21.1	21.0	20.6	20.4	20.5	22.4	22.1	22.0	20.4	23.0	21.8	24	
3	23.8	22.7	22.2	23.3	22.9	22.5	22.3	22.1	23.9	23.5	22.9	21.0	21.0	21.0	21.2	21.1	20.4	21.0	20.9	21.1	21.2	21.1	20.9	21.0	20.4	23.9	21.9	24	
4	20.3	21.7	23.2	23.3	23.4	23.6	23.7	23.7	21.0	21.7	21.5	21.4	20.9	20.6	20.3	20.6	20.4	20.7	20.8	21.4	21.3	21.0	21.0	20.9	20.3	23.7	21.6	24	
5	21.0	20.6	20.3	21.7	22.6	23.2	23.0	21.0	20.9	21.3	21.0	20.7	20.6	20.7	20.5	20.7	20.5	20.5	20.5	20.5	21.0	21.0	21.1	21.1	20.3	23.2	21.1	24	
6	21.2	21.1	21.2	21.4	21.5	21.3	21.3	21.4	21.3	21.1	20.9	21.0	20.9	20.8	20.6	20.8	21.0	21.0	21.2	21.2	21.5	21.5	P	P	20.6	21.5	21.1	22	
7	P	P	P	24.1	21.6	21.2	21.1	20.9	20.6	20.5	20.4	20.4	20.4	20.9	21.0	21.0	20.6	20.0	22.0	22.5	22.5	22.5	22.7	22.6	20.0	24.1	21.4	21	
8	22.5	22.4	22.2	22.2	22.2	22.1	22.1	22.0	23.7	22.8	22.5	22.7	23.3	23.2	21.2	21.0	20.9	20.7	20.4	20.4	23.1	23.1	23.0	23.1	20.4	23.7	22.2	24	
9	23.2	23.4	21.9	20.8	20.6	20.3	20.2	21.7	22.6	23.4	21.6	21.2	21.2	21.2	21.4	21.3	21.4	21.4	21.1	21.0	21.0	20.3	21.4	22.0	20.2	23.4	21.5	24	
10	22.2	22.2	23.7	23.1	22.6	22.2	23.2	23.6	23.3	23.4	23.5	21.0	20.6	19.9	20.5	21.8	22.3	22.8	23.1	23.3	23.4	23.5	23.7	21.6	19.9	23.7	22.5	24	
11	20.4	21.3	22.0	22.3	22.5	22.7	22.9	23.0	23.1	23.2	23.3	23.6	22.0	20.7	20.0	21.3	22.6	23.4	22.6	20.2	22.6	22.4	22.9	23.0	20.0	23.6	22.3	24	
12	22.6	23.3	22.8	23.1	23.2	22.6	23.5	22.7	23.6	23.0	23.4	24.0	21.8	21.0	21.0	21.0	20.9	20.8	20.5	20.3	22.6	23.4	23.1	23.0	20.3	24.0	22.4	24	
13	23.0	23.0	23.1	23.1	23.1	23.1	23.2	23.2	23.1	23.2	23.4	23.5	21.1	20.8	20.1	21.3	22.2	22.6	22.9	23.0	23.0	23.0	22.7	22.5	20.1	23.5	22.6	24	
14	22.3	22.2	22.3	22.2	22.2	22.2	22.3	22.4	22.4	22.6	22.9	23.3	21.6	20.9	20.9	20.9	20.8	20.5	20.1	21.3	21.8	22.0	22.2	22.4	20.1	23.3	21.9	24	
15	22.6	22.7	22.7	22.7	22.6	22.7	22.9	23.0	22.4	20.9	20.5	20.0	20.2	20.6	20.7	20.7	20.8	20.9	20.9	21.0	21.0	20.9	20.9	20.8	20.0	23.0	21.5	24	
16	20.5	20.1	21.1	22.3	22.9	23.4	23.7	22.3	21.0	20.7	20.5	20.6	20.7	20.8	20.8	20.8	20.9	19.6	21.3	22.4	23.0	23.2	20.9	20.3	19.6	23.7	21.4	24	
17	19.9	21.6	22.4	22.9	23.4	22.2	20.8	20.4	20.1	22.6	23.3	21.9	21.4	21.2	21.2	22.0	22.4	22.7	22.8	22.9	22.9	23.1	23.2	23.3	19.9	23.4	22.1	24	
18	23.2	23.1	23.0	22.9	22.7	22.7	23.3	23.6	22.9	22.8	22.8	23.0	23.3	23.7	22.3	20.9	20.2	21.8	23.6	23.3	23.2	23.2	23.3	23.5	20.2	23.7	22.8	24	
19	23.7	23.8	23.9	23.8	23.8	23.7	23.6	23.4	23.2	23.7	23.1	21.4	21.4	21.2	21.2	21.3	21.3	21.4	21.1	21.2	20.7	22.3	23.2	23.2	20.7	23.9	22.5	24	
20	23.2	23.1	23.1	23.0	23.0	23.1	23.3	23.4	23.5	23.7	24.0	22.3	21.4	21.5	21.3	21.4	21.7	21.4	21.2	21.3	20.5	23.4	23.2	23.0	20.5	24.0	22.5	24	
21	23.0	23.0	22.9	22.8	22.7	22.7	24.0	23.7	23.3	23.6	24.1	23.3	21.4	21.2	21.2	21.2	21.1	21.2	20.5	23.1	23.1	22.9	23.4	23.9	20.5	24.1	22.6	24	
22	23.3	23.1	22.9	22.8	22.8	22.9	23.0	23.1	23.2	23.4	23.6	23.9	22.8	21.2	21.1	21.1	21.1	21.1	21.1	21.0	20.6	20.6	21.9	22.5	20.6	23.9	22.3	24	
23	22.8	23.0	23.1	23.2	23.2	23.2	23.1	23.0	23.1	23.4	23.7	23.8	21.5	21.3	21.2	21.3	21.2	21.3	21.2	21.3	21.1	20.8	20.1	22.2	23.7	20.1	23.8	22.3	24
24	22.3	21.2	21.1	21.0	21.0	21.0	21.1	21.1	21.2	21.3	21.3	21.4	21.3	21.5	21.2	21.2	21.2	21.2	21.1	21.1	20.8	20.3	23.4	23.5	23.5	20.3	23.5	21.5	24
25	23.4	23.3	23.2	23.1	23.0	23.1	23.2	23.0	23.1	23.2	23.4	23.7	23.9	23.8	21.2	20.5	23.1	23.0	22.9	22.8	22.6	24.1	22.7	23.7	20.5	24.1	23.0	24	
26	22.9	23.6	22.9	23.3	23.1	22.4	23.6	23.0	22.6	22.6	22.8	23.3	23.9	23.3	21.4	21.3	21.2	20.6	23.0	23.5	23.3	23.4	23.4	23.4	20.6	23.9	22.8	24	
27	23.3	23.3	23.2	23.1	23.0	23.1	23.1	23.1	23.3	23.5	23.8	24.2	21.5	21.4	21.3	21.3	21.3	21.2	20.8	20.4	21.3	22.7	23.4	20.4	24.2	22.4	24		
28	23.9	21.5	21.5	21.4	21.4	21.6	21.6	21.5	21.6	21.7	21.7	21.7	21.6	21.6	21.5	21.6	21.5	21.5	21.7	21.6	21.9	21.5	21.4	23.6	21.4	23.9	21.8	24	
29	23.5	23.1	23.0	23.0	23.0	23.1	23.1	23.0	23.0	23.1	23.5	24.1	23.9	21.8	21.6	21.5	21.4	21.2	20.8	24.0	23.3	23.1	22.9	24.3	20.8	24.3	22.8	24	
30	23.5	23.1	23.4	23.9	23.2	23.0	22.9	22.8	22.7	22.7	22.8	22.9	23.2	23.6	24.0	22.3	21.3	20.7	23.6	23.4	23.3	23.3	23.3	23.3	20.7	24.0	23.0	24	
31	23.4	23.4	23.5	23.6	23.7	23.8	23.9	24.0	23.9	23.9	24.1	23.9	21.6	21.5	20.7	23.4	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.3	20.7	24.1	23.3	24	
HOURLY MAX	23.9	23.8	23.9	24.1	23.8	23.8	24.0	24.0	23.9	23.9	24.1	24.2	23.9	23.8	24.0	23.4	23.5	23.5	23.6	24.0	23.4	24.1	23.7	24.3					
HOURLY AVG	22.5	22.5	22.5	22.7	22.6	22.5	22.6	22.5	22.5	22.6	22.6	22.4	21.7	21.4	21.1	21.2	21.3	21.3	21.6	21.8	22.0	22.3	22.5	22.7					

STATUS FLAG CODES

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

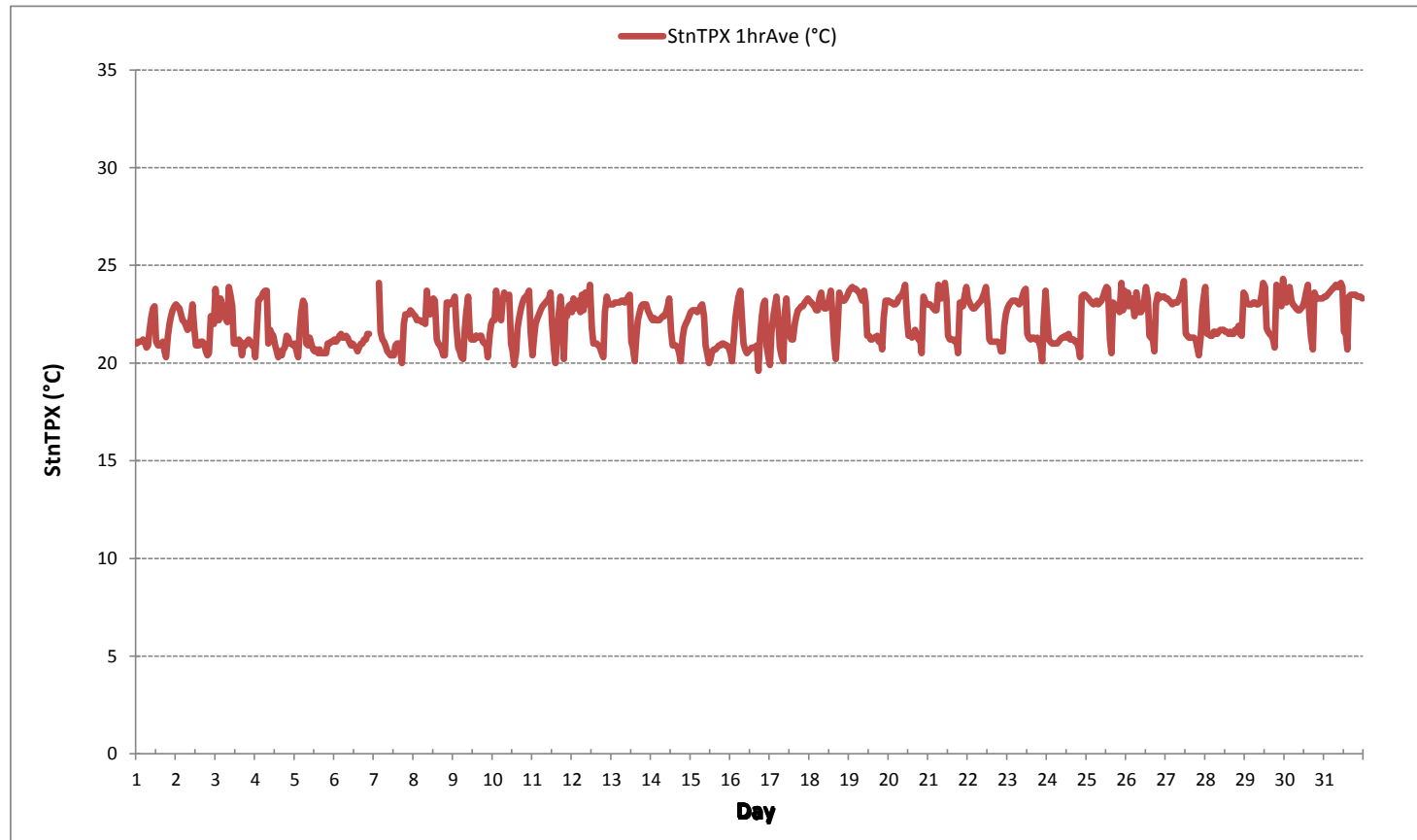
24 HR AVERAGES October 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.6	°C	@ HOUR	17	ON DAY	16
MAXIMUM 1-HR AVERAGE:	24.3	°C	@ HOUR	23	ON DAY	29
MAXIMUM 24-HR AVERAGE:	23.3	°C			ON DAY	31
OPERATIONAL TIME:					739	hrs
AMD OPERATION UPTIME:					99.3	%
STANDARD DEVIATION:	1.1				MONTHLY AVERAGE:	22.1 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



Thermo 43C Sulphur Dioxide Analyzer Calibration

Date:	October 3, 2017	Barometer/B.P./units:	n/a	27.97	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Fluke 4295 expires November 14, 2017	22.24	°C
Location/Station Name:	986	Weather Conditions:	Mix of sun and clouds		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	17:21	Performed By/Reviewer:	Raja Abid	Tom Bourque	
End Time 24 hr. (mst):	20:35	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:	September 19, 2017	As Found C.F.:	1.022
	Previous C.F.:	0.999	New C.F.:	0.998

Calibration Standards:	Standard Calibration Points for Ranges	
Low Flow Meter ID/Expiry Date: Definer Low 129069 expires February 5, 2018	Point	ppb
High Flow Meter ID/Expiry Date: Definer High 128686 expires February 5, 2018	High	380
Calibrator ID/Expiry Date: API id# 690 expires March 17, 2018	Mid	180
Cal Gas Cylinder I.D. #: LL 119513	Low	90
Cal Gas Conc. (ppm): 50.6		

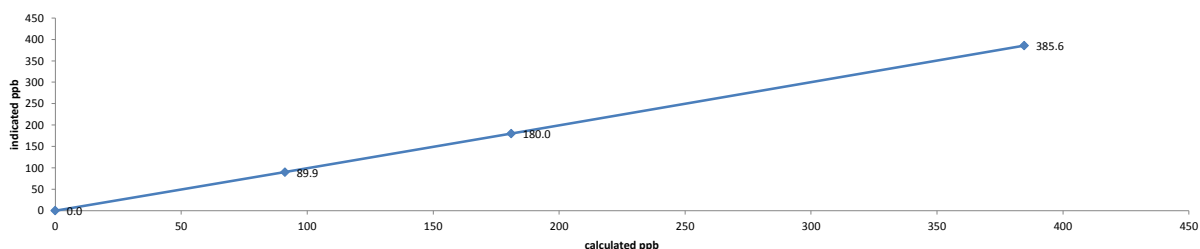
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	5732	0.00	5732	0.0	0.0	n/a
as found high	5905	45.23	5950	384.6	376.5	1.022
adjusted zero	5732	0.00	5732	0.0	0.0	n/a
adjusted high	5905	45.23	5950	384.6	385.6	0.998
mid	5930	21.29	5951	181.0	180.0	1.005
low	5935	10.72	5946	91.2	89.9	1.015
calibrator zero	5732	0.00	5732	0.0	0.0	n/a
Average C.F. =						1.006

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.996		0.95-1.05
b (Intercept as % of full scale) =	0.19%		± 3% F.S.
% change in C.F. from last cal =	-2.26%		± 10%

Thermo 43C Sulphur Dioxide Analyzer Calibration



As found:		As left:	
Bkg:	75.8	Bkg:	76.9
Coef:	0.893	Coef:	0.907
Pmt:	-654	Pmt:	-654
Battery:	3.3	Battery:	3.3
Internal:	29.6	Internal:	30.0
Chamber:	45.6	Chamber:	45.6
Pressure:	454.4	Pressure:	455.0
Flow:	0.791	Flow:	0.793
Intensity:	38091	Intensity:	37521
Converter:	n/a	Converter:	n/a
Converter Set:	n/a	Converter Set:	n/a
Averaging Time:	120	Averaging Time:	120
Expected Value:	284.9	Expected Value:	n/a

Comments:

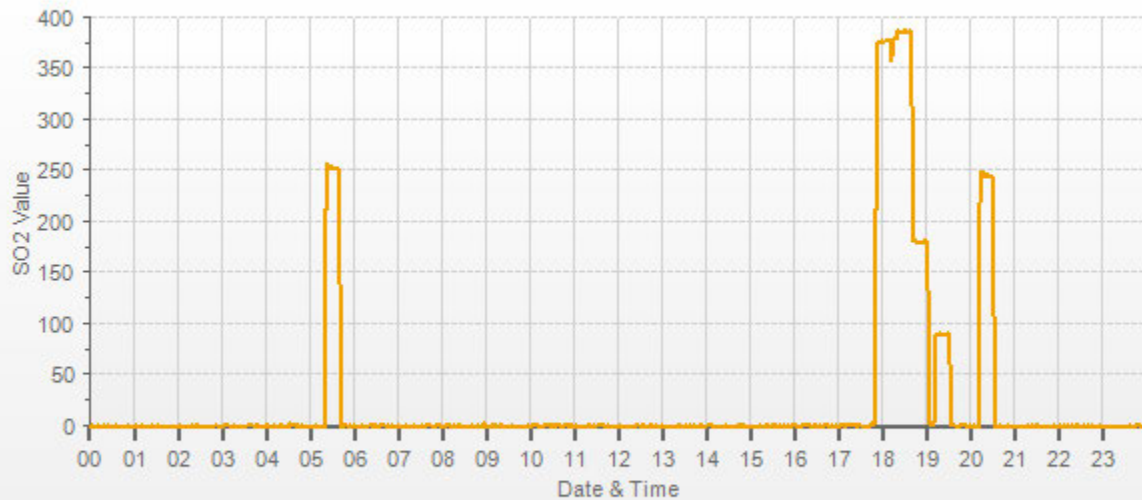
The analyzer sample inlet filter was changed. The analyzer cooling fan filter(s) were cleaned. The manifold blower was found to be working normally.

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

The analyzer perm tube was changed, the new expected value will be updated once the perm tube temperature has stabilized.

Barometric Pressure recorded from Environment Canada site. Flow measurements after mid-point

SO2[ppb] Station: PRAMP_986 Daily: 17/10/03 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	October 3, 2017	Barometer/B.P./units:	n/a	27.97	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Fluke 4295 expires November 14, 2017	22.24	°C
Location/Station Name:	986	Weather Conditions:	Mix of sun and clouds		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	17:21	Performed By/Reviewer:	Raja Abid	Tom Bourque	
End Time 24 hr. (mst):	21:00	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:	September 18, 2017	As Found C.F.:	1.058
	Previous C.F.:	1.000	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	Point	Start/End Time 24 hr.: 17:59-18:10
High Flow Meter ID/Expiry Date: Definer High 128686 expires February 5, 2018	High	SO2 Analyzer Range: 500
Calibrator ID/Expiry Date: API id# 829 expires January 27, 2018	Mid	Target Concentration (ppb): 380
Cal Gas Cylinder I.D. #: BLM 001927	Low	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

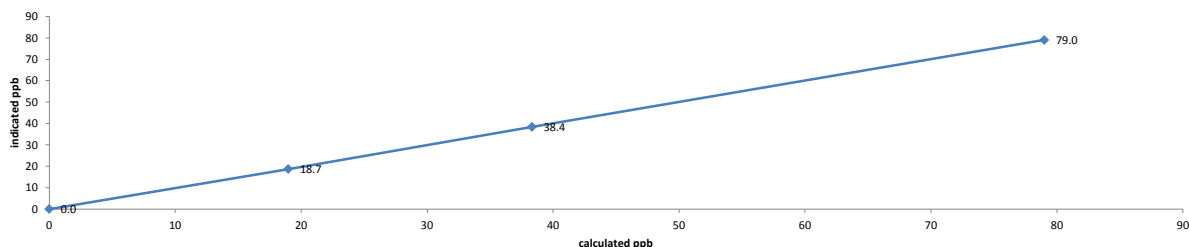
Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7428	0.00	7428	0.0	0.2	n/a
as found high	7390	57.12	7447	79.0	74.9	1.058
adjusted zero	7428	0.00	7428	0.0	0.0	n/a
adjusted high	7390	57.12	7447	79.0	79.0	1.000
mid	7425	27.73	7453	38.3	38.4	0.998
low	7455	13.76	7469	19.0	18.7	1.015
calibrator zero	7428	0.00	7428	0.0	0.0	n/a

Average C.F.= 1.004

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.999		0.95-1.05
b (Intercept as % of full scale)=	0.10%		± 3% F.S.
% change in C.F. from last cal=	-5.76%		± 10%

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	1.72	Bkg:	1.85
Coef:	0.958	Coef:	1.001
Pmt:	-687.1	Pmt:	-687.1
Flash:	967	Flash:	967
Internal:	33.0	Internal:	32.8
Chamber:	44.9	Chamber:	45.2
Perm Oven Gas:	45.00	Perm Oven Gas:	45.00
Perm Oven Heater:	44.25	Perm Oven Heater:	44.25
Pressure:	658.6	Pressure:	659.2
Sample Flow:	0.470	Sample Flow:	0.471
Lamp Intensity:	91	Lamp Intensity:	91
Converter:	820	Converter:	820
Converter Set:	820	Converter Set:	820
Averaging Time:	120	Averaging Time:	120
Expected Value:	45.4	Expected Value:	44.7

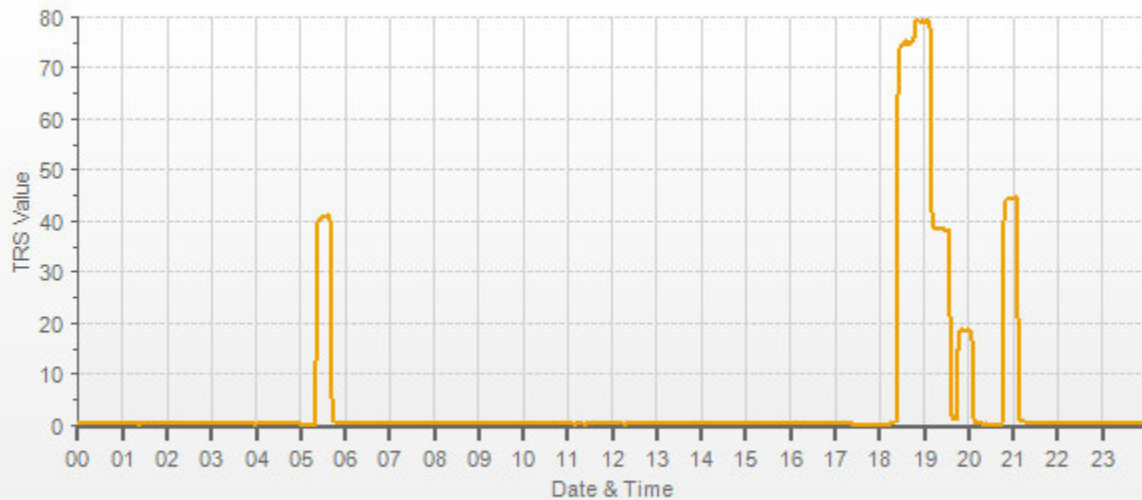
Comments:

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

Barometric Pressure recorded from Environment Canada site.

Flow measurements after mid-point

TRS[ppb] Station: PRAMP_986 Daily: 17/10/03 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON

Methane/Non-Methane Analyzer Calibration

Date:	October 4, 2017	Barometer/B.P./units:	n/a	27.95	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	Fluke 4295 expires November 14, 2017	21.91	°C
Location/Station Name:	986	Weather Conditions:	Mainly sunny		
Parameter:	CH ₄ / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	9:48-13:15	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.:
Measured Flow:	1015.4 cc/min	CH ₄ =	1.000
Last Calibration Date:	September 18, 2017	NMHC =	1.000
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC =	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	
High Flow Meter ID/Expiry Date:	Definer High 128686 expires February 5, 2018	
Calibrator ID/Expiry Date:	API id# 829 expires January 27, 2018	
Cal Gas Cylinder I.D. #:	LL 19272	
CH ₄ Cylinder Conc.:	880.0	
CH ₄ expressed as C ₃ H ₈ :	836.0	

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015												
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
as found zero	2995	0.00	2995	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2953	50.06	3003	14.67	13.94	28.61	15.02	14.40	29.43	0.977	0.968	0.972
adjusted zero	2995	0.00	2995	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2953	50.06	3003	14.67	13.94	28.61	14.67	13.94	28.61	1.000	1.000	1.000
mid	2969	25.86	2995	7.60	7.22	14.81	7.64	7.26	14.89	0.994	0.994	0.995
low	2997	12.77	3010	3.73	3.55	7.28	3.80	3.62	7.39	0.982	0.979	0.985
calibrator zero	2995	0.00	2995	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =										0.992	0.991	0.993

Linear Regression/Calibration Results:				LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.999	0.999	0.999	0.95-1.05
b (Intercept as % of full scale) =	0.18%	0.19%	0.15%	± 3% F.S.
% change in C.F. from last cal =	2.33%	3.21%	2.79%	± 10%

As Left Instrument Diagnostics:												
Interface Board Voltages:	Bias Supply:	-311.5	Calibration History cnt'd:	NM Peak Area:	73494							
Temperatures:	Detector Oven:	175.0	Crucial Settings:	Methane Start:	n/a							
	Filter:	175.0		Methane End:	n/a							
	Column Oven:	75.2		Backflush:	n/a							
	Internal:	36.3		NMHV Start:	n/a							
Cylinder Pressures/reg.:	Carrier:	400	50	NMHC End:	n/a							
	Fuel:	2000	50	Date:	4Oct 17							
	Span Gas:	1250	18	Time:	10:25							
	Zero Air Generator:	49		CH ₄ PK HT:	0							
Internal Pressures:	Carrier:	31.4		CH ₄ RT:	8.0							
	Fuel:	40.5		CH ₄ Baseline:	1634							
	Air:	29.5		CH ₄ LOD:	24							
FID Status:	Status:	LIT		CH ₄ SD:	8							
	Counts:	20323		CH ₄ CONC:	0.00							
	Flame:	322.1		NM PK HT:	0							
	Det Base:	175.0		NM Peak Area:	0							
Flame and Power Stats:	Last Power On:	15Sep 2017@7:01		NM CONC:	0.00							
	Flameouts:	1		NM Base Start:	1630							
	Det Oven at Start:	19.1		NM Base End:	1632							
	Col Oven at Start:	20.0		NM LOD:	7							
Calibration History:	Time:	18Sep 17@11:14		NM Start IDX:	8							
	Type:	SPAN		NM End IDX:	61							
	Status:	GOOD		NM Max Slope:	4.3e-01							
	Check/Adjust:	ADJUST		NM Min Slope:	-2.8e-01							
	CH ₄ Span Conc:	14.93		NM PT Count:	0							
	CH ₄ SP Ratio:	0.000756		Previous CH ₄ :	8.86							
	CH ₄ RT:	12.4		Previous NMHC:	10.19							
	CH ₄ PK IDX:	22		Previous THC:	19.05							
	CH ₄ PK HT:	19740		New CH ₄ :	8.79							
	NM Span Conc:	14.18		New NMHC:	10.11							
	NM SP Ratio:	0.000193		New THC:	18.90							

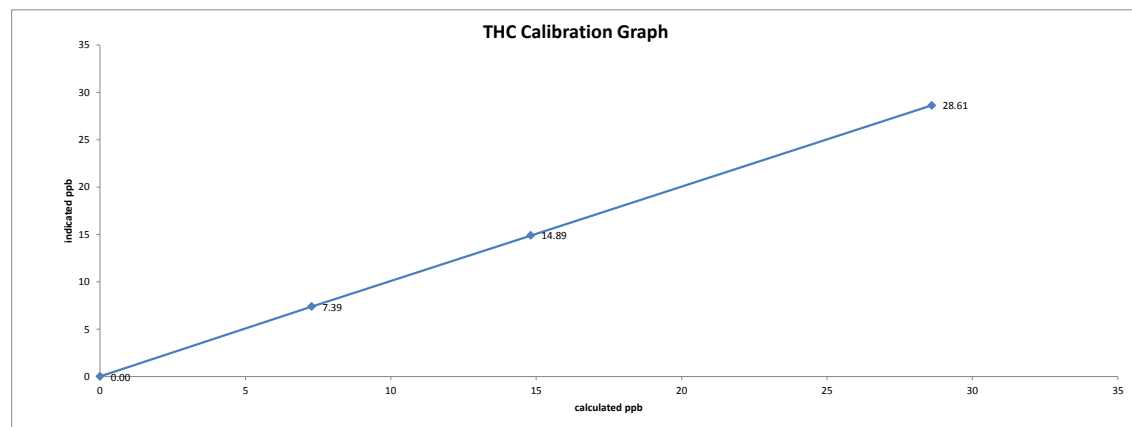
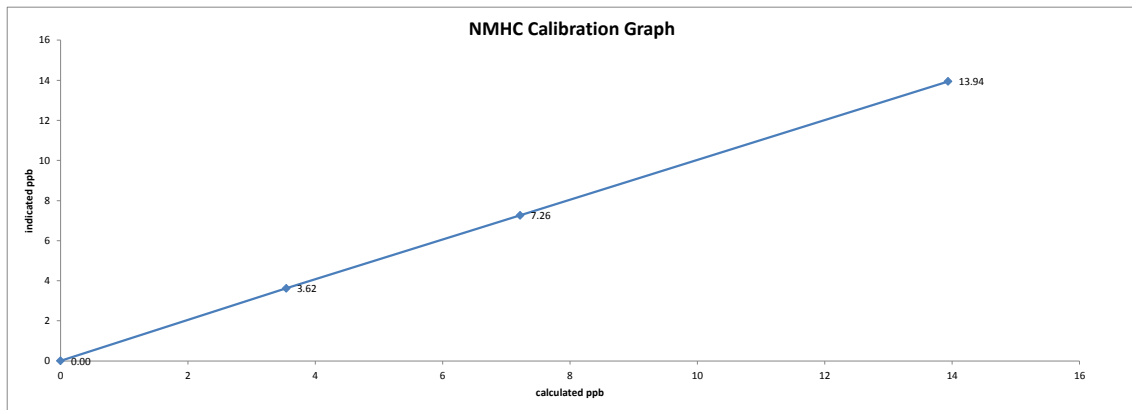
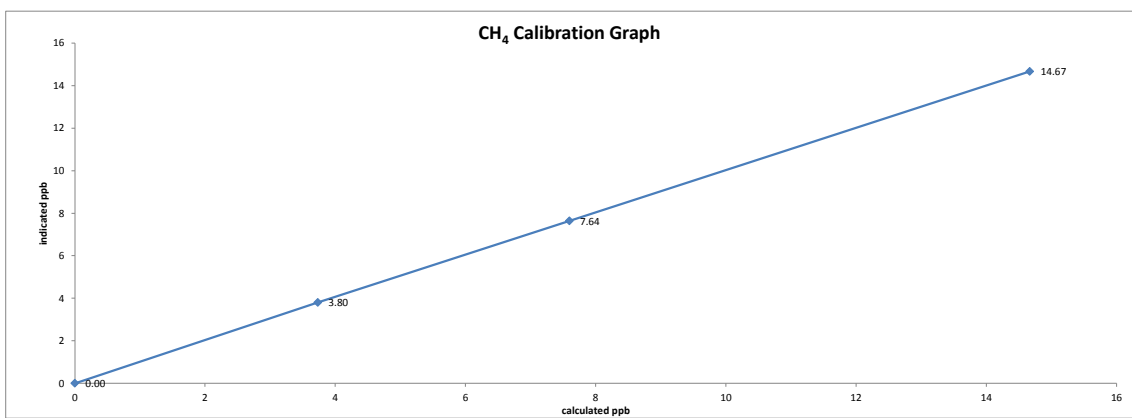
Comments:	
The analyzer sample inlet filter was changed.	
A new hydrogen cylinder was installed.	No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.
The analyzer cooling fan filter(s) were cleaned.	
The manifold blower was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

Barometric Pressure recorded from Environment Canada site. 9:54 THC flow measured.

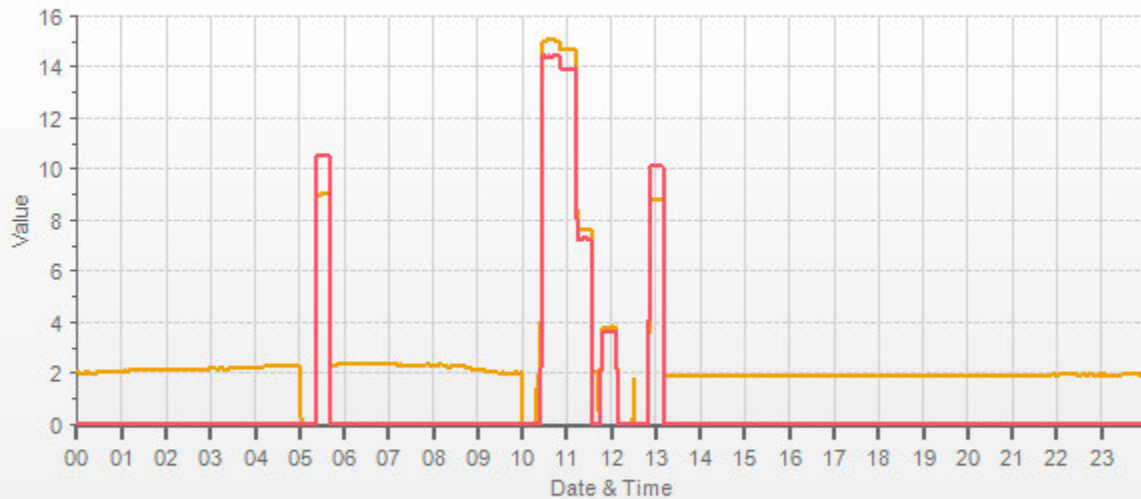
Flow measurements after mid-point

Date: October 4, 2017
Company/Airshed: PRAMP
Location/Station Name: 986

Start/End Time 24 hr. (mst): 9:48-13:15
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution



Station: PRAMP_986 Daily: 17/10/04 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				$y=mx+b$ (where x=calculated concentration, y=indicated concentration)			
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				$y=mx+b$ (where x=calculated concentration, y=indicated concentration)			
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
Operator Signature: [Signature]

Date: January 27, 2017
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

November 17, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2017-10-67-C

Site: Three Creeks 986b Station

Contact: Karla Reesor

Level 0 Preliminary Verification

Carla Reesor

Date November 9, 2017

Level 1 Primary Validation

Carla Reesor

Date November 9, 2017

Level 2 Final Validation

Carla Reesor

Date November 17, 2017

Level 3 Independent Data Review

Cheri Sinclair

Date November 17, 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.