

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

JOB #: 8449-2017-05-67-C

May 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **June 20, 2017**

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SUMMARY

In May 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.

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	5	1	2.6	ESE	1	5	100.0
TRS (ppb)	-	-	-	-	0.30	2.85	5	23	12.5	WNW	0.40	5	100.0
THC (ppm)	-	-	-	-	1.99	3.44	24	5	5.8	NNW	2.32	24	100.0
CH ₄ (ppm)	-	-	-	-	1.99	3.44	24	5	5.8	NNW	2.32	24	100.0
NMHC (ppm)	-	-	-	-	0.00	0.01	27	1	0.9	ESE	0.00	1	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	55	98	24	3	4.3	NW	94	13	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	940	954	28	6	4.5	ESE	952	28	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	12.8	29.6	30	15	12	SSE	21.4	30	100.0
STATION TEMPERATURE (°C)	-	-	-	-	21.1	23.0	13	9	8.8	ENE	22.1	13	100.0
VECTOR WS (kph)	-	-	-	-	1.0	18.8	18	15	-	NE	10.4	12	100.0
VECTOR WD (sec)	-	-	-	-	176 (S)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY

Three Creeks 986b Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	May

CONTINUOUS AMBIENT MONITORING								
			ONE - HOUR AVERAGE		24 - HOUR AVERAGE			
PARAMETER	STN No.	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO ₂	1	100.0	0.001	ppm	0	0.001	ppm	0
TRS	1	100.0	0.003	ppm	-	0.000	ppm	-
THC	1	100.0	3.44	ppm	-	2.32	ppm	-
CH ₄	1	100.0	3.44	ppm	-	2.32	ppm	-
NMHC	1	100.0	0.01	ppm	-	0.00	ppm	-
RH	1	100.0	98	%	-	94	%	-
BP	1	100.0	954	mb	-	952	mb	-
Ambient TPX	1	100.0	29.6	°C	-	21.4	°C	-
Station TPX	1	100.0	23.0	°C	-	22.1	°C	-
Wind Speed	1	100.0	18.8	kph	-	10.4	kph	-
Wind Direction	1	100.0	-		-	-		-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

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

SO₂ 24-Hour Exceedances

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

In accordance with EPEA and the Substance Release Regulation.

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

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1.0 Discussion

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

Sample filters for all continuous air monitors are changed before the calibration begins. The sample manifold is cleaned during the site visit each month.

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period, was 100%
- The routine monthly calibration was performed on May 9.
- Four instances of maximum instantaneous data, collected on May 23 hour 05:00, May 24 hour 19:00, May 28 hour 22:00 and May 31 hour 11:00, were discarded due to brief power outages.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period, was 100%
- The routine monthly calibration was performed on May 9.
- Four instances of maximum instantaneous data, collected on May 23 hour 05:00, May 24 hour 19:00, May 28 hour 22:00 and May 31 hour 11:00, were discarded due to brief power outages.

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

- Operational time, for the monitoring period, was 100%
- The routine monthly calibration was performed on May 9.
- Data was recorded at concentrations higher than historical between May 23 and May 29. An extensive review was conducted, all QC/QA activities surrounding the time-frame met AMD requirements and the analyzer was operating within standard performance specifications. This range of data is therefore considered valid.
- Four instances of maximum instantaneous data, collected on May 23 hour 05:00, May 24 hour 19:00, May 28 hour 22:00 and May 31 hour 11:00, were discarded due to brief power outages.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time, for the monitoring period, was 100%
- Four instances of maximum instantaneous data, collected on May 23 hour 05:00, May 24 hour 19:00, May 28 hour 22:00 and May 31 hour 11:00, were discarded due to brief power outages.

RELATIVE HUMIDITY (RH)

- Operational time, for the monitoring period, was 100%.

BAROMETRIC PRESSURE (BP)

- Operational time, for the monitoring period, was 100%.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time, for the monitoring period, was 100%.

STATION TEMPERATURE (StnTPX)

- Operational time, for the monitoring period, was 100%.

2.0 Project Personnel

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

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 45C UV Fluorescent Analyzer

Total Reduced Sulphur - Thermo 43i UV Fluorescent Analyzer

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

Wind System - RM Young Unit

Relative Humidity - Campbell Scientific Unit

Barometric Pressure - Met One Unit

Ambient Temperature - Campbell Scientific Unit

Datalogger - ESC 8832

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

Level 0 Preliminary Verification

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

Level 1 Primary Validation

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

Level 2 Final Validation

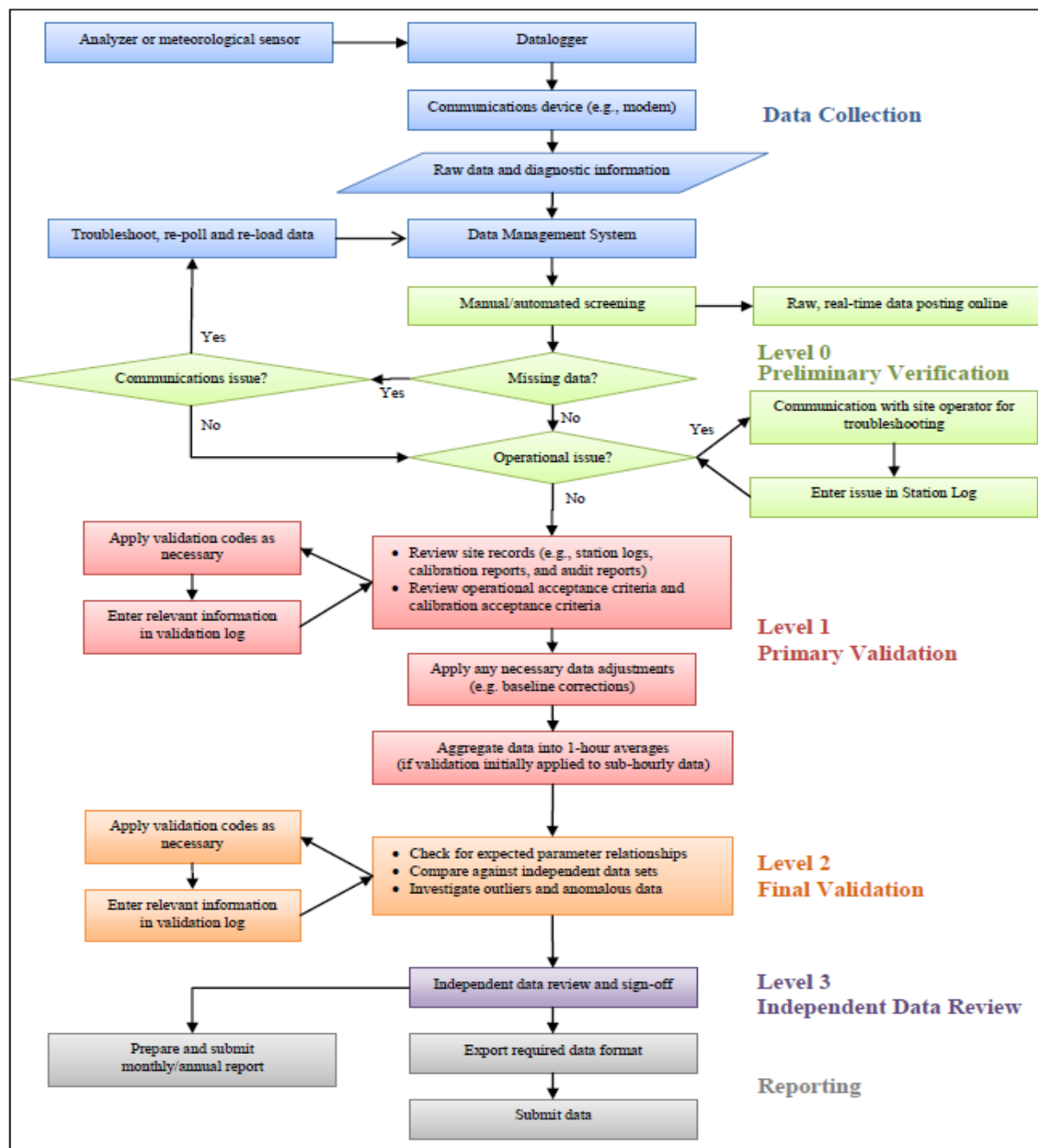
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

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



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

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
2	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
3	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
4	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
5	0	1	0	0	1	1	S	0	0	0	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	1	1	24	
6	0	0	0	0	0	S	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24
7	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	
8	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
9	0	0	S	0	0	0	0	1	1	0	1	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	1	0	24
10	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
11	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	24	
12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	24	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	1	0	24	
18	0	0	0	0	1	0	0	0	0	1	1	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	1	0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
22	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
23	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
24	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	24	
25	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
26	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
27	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
28	0	0	0	0	0	0	S	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	24
29	0	0	0	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
30	1	1	1	0	S	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	0	0	1	1	24
31	0	0	0	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

STATUS FLAG CODES

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

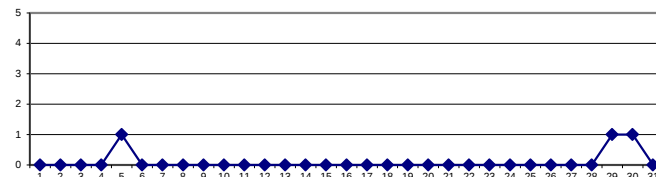
OBJECTIVE LIMIT:

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

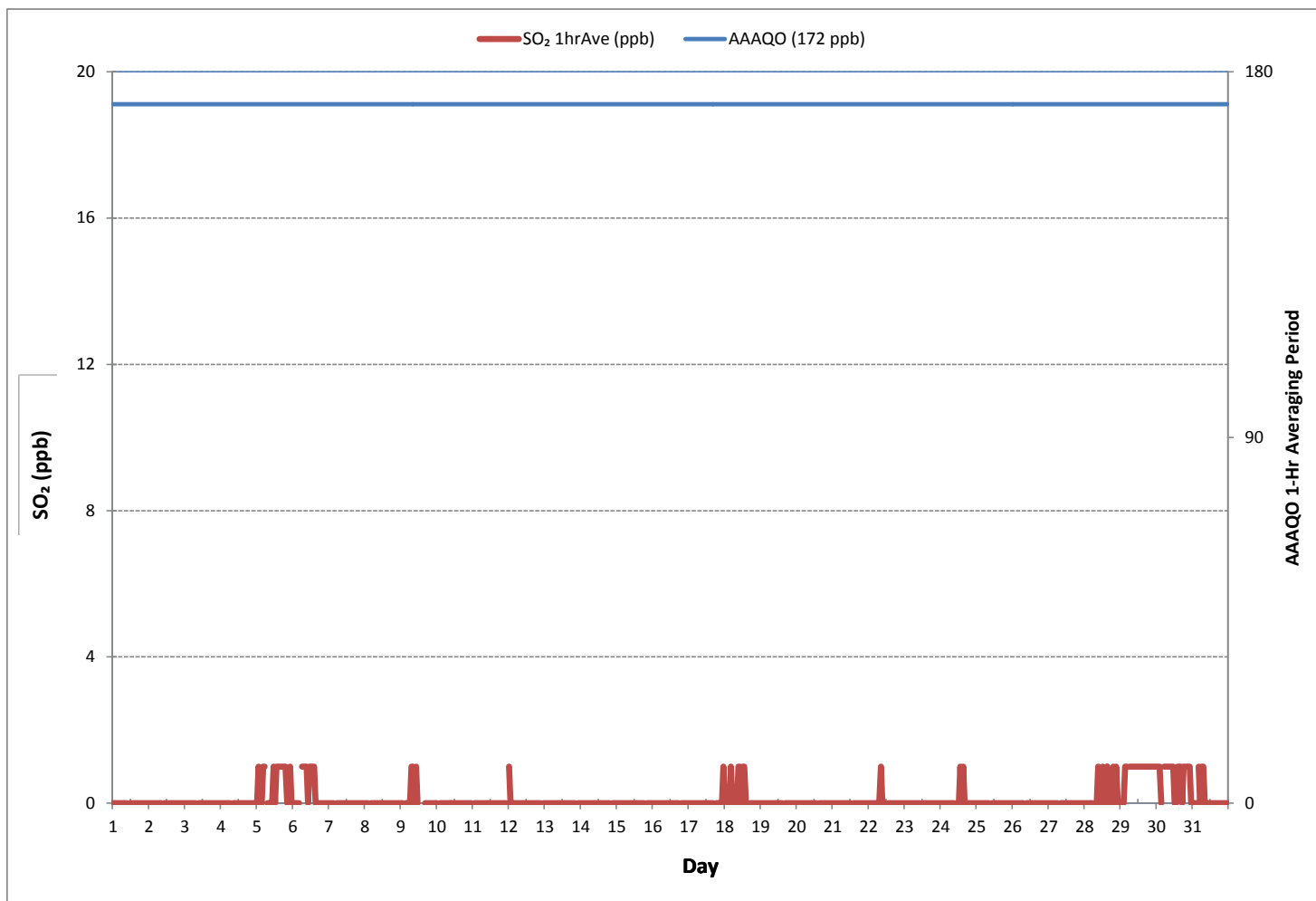
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0				
NUMBER OF 24-HR EXCEEDANCES:	0				
NUMBER OF NON-ZERO READINGS:	79				
MINIMUM 1-HR AVERAGE:	0	ppb @ HOUR	0	ON DAY	1
MAXIMUM 1-HR AVERAGE:	1	ppb @ HOUR	1	ON DAY	5
MAXIMUM 24-HR AVERAGE:	1	ppb		ON DAY	5
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

24 HR AVERAGES May 2017



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 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	2	2	1	1	1	1	1	2	2	S	1	2	2	1	2	2	2	1	2	1	2	1	2	1	2	2	2	24
2	2	1	2	1	2	2	1	2	1	S	2	1	2	1	1	1	2	2	1	2	2	2	1	2	1	2	2	2	24
3	2	1	2	1	2	1	2	2	S	2	2	2	2	2	2	1	1	1	1	1	2	2	2	2	1	2	2	2	24
4	2	1	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1	1	2	2	2	24
5	2	2	1	1	2	2	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	24
6	2	1	2	2	1	S	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2	2	2	24
7	1	2	1	2	S	2	1	2	2	2	2	2	2	2	2	1	1	2	2	1	2	1	2	2	1	2	2	2	24
8	2	2	2	S	1	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	2	2	2	24
9	2	2	S	2	1	1	2	2	2	2	2	2	C	C	C	C	1	2	1	2	1	2	1	1	1	2	2	2	24
10	1	S	1	2	2	1	1	1	1	1	1	1	1	1	2	1	2	1	1	2	1	1	2	1	1	2	1	2	24
11	S	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	2	2	2	24
12	2	2	2	2	2	2	1	1	2	1	2	1	1	1	2	2	2	1	2	1	2	2	S	1	1	2	2	2	24
13	2	1	1	2	2	1	2	1	1	2	2	1	1	1	1	1	1	2	2	1	2	S	1	1	1	2	1	2	24
14	2	1	2	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	S	2	1	1	1	2	1	2	24
15	1	1	1	2	1	1	2	1	1	2	1	2	1	1	2	2	1	2	2	S	2	1	1	2	1	2	1	2	24
16	2	1	1	1	1	2	1	2	1	2	1	2	1	2	1	2	2	S	2	2	2	2	2	2	1	2	2	2	24
17	1	2	1	2	1	2	2	2	1	2	2	2	2	1	1	2	1	S	1	2	2	2	2	2	1	2	2	2	24
18	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	1	2	2	2	24
19	1	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	1	2	2	2	24
20	2	1	2	2	2	2	2	2	2	1	2	2	2	S	2	1	2	2	2	2	2	2	3	2	1	3	2	2	24
21	2	2	2	2	2	1	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	3	2	2	1	3	2	2	24
22	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	1	2	2	2	2	2	2	2	1	2	2	2	24
23	2	1	2	2	2	P	2	2	2	2	2	S	2	2	2	2	2	2	1	2	2	2	2	1	1	2	2	2	23
24	2	2	2	1	2	1	2	2	2	2	S	2	2	2	2	2	2	2	2	P	2	2	2	2	1	2	2	2	23
25	1	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	24
26	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	2	2	24
27	2	2	2	2	1	2	2	S	2	2	2	2	3	3	2	2	2	2	2	2	3	2	2	2	1	3	2	2	24
28	2	2	2	2	2	2	S	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	P	2	2	3	2	2	23
29	3	2	3	2	2	S	2	2	3	2	2	2	2	2	3	2	2	2	2	2	2	3	2	2	2	3	2	2	24
30	2	2	2	2	S	2	3	3	2	2	2	2	2	3	2	3	2	2	3	3	2	3	3	2	2	3	2	2	24
31	2	2	2	S	2	3	3	3	2	2	3	P	2	2	2	2	2	2	2	2	3	3	2	2	2	2	3	2	23
HOURLY MAX	3	2	3	2	2	3	3	3	3	3	3	2	3	3	3	3	2	2	3	3	3	3	3	2					
HOURLY AVG	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					

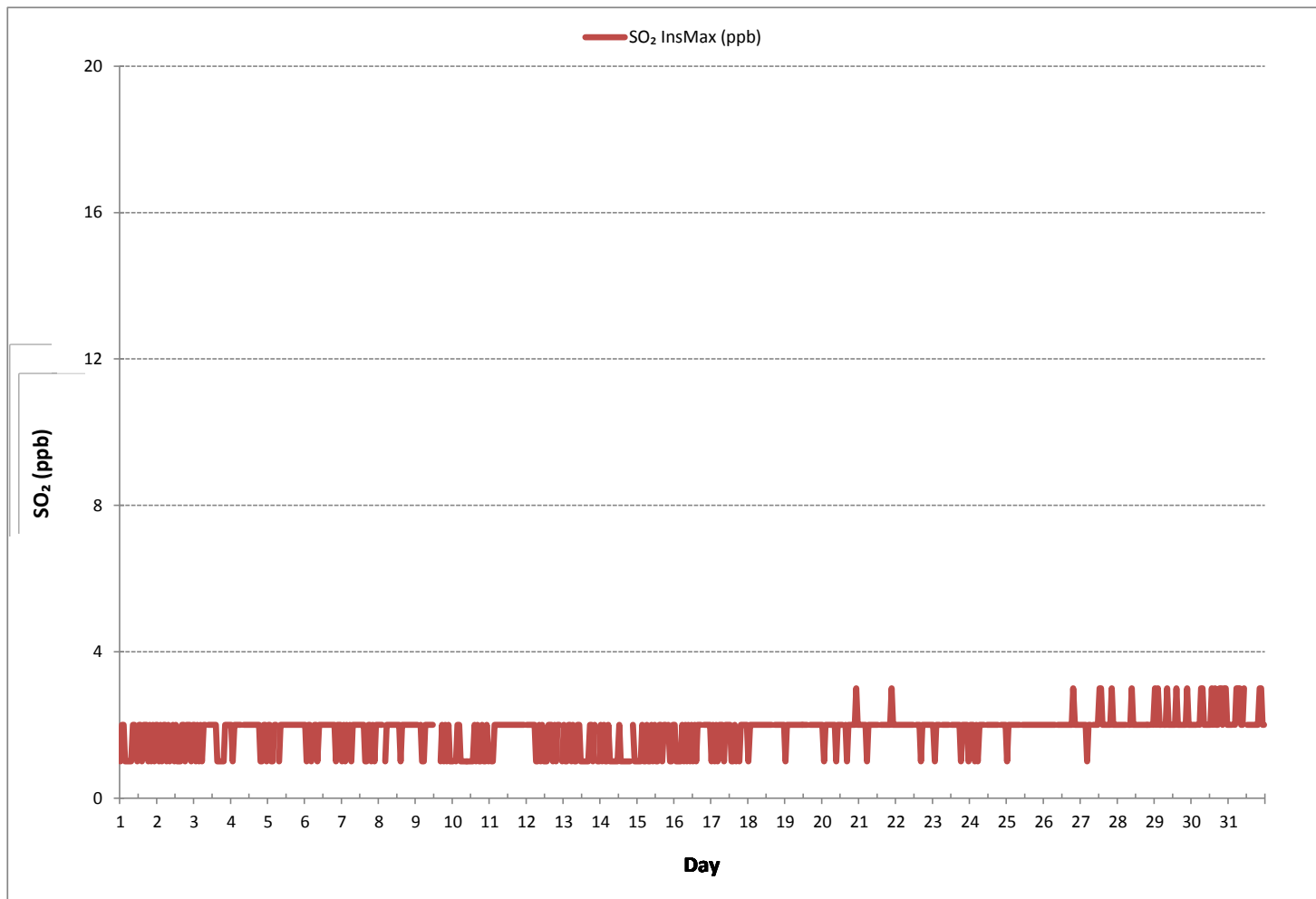
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704				
MAXIMUM INSTANTANEOUS VALUE:	3	ppb	@ HOUR	22	ON DAY 20
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	740	hrs
MONTHLY CALIBRATION TIME:	4	hrs			
STANDARD DEVIATION:	0				

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



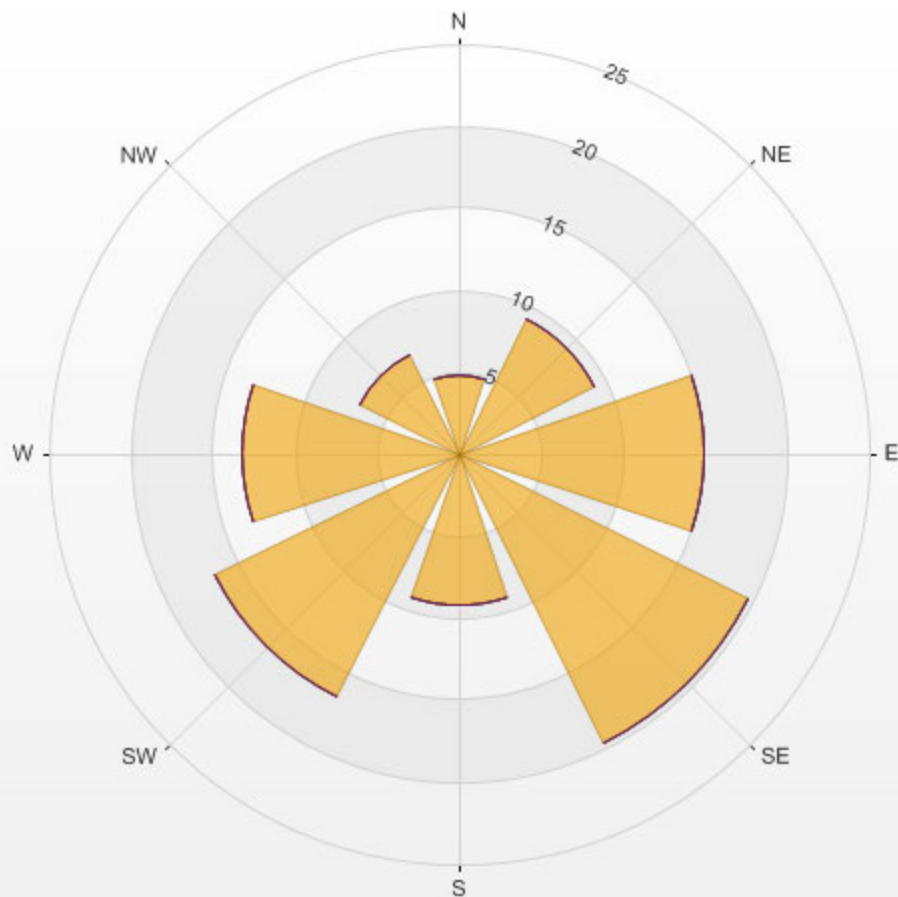
Wind: PRAMP_986
Poll.: PRAMP_986-SO2[ppb]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.26%

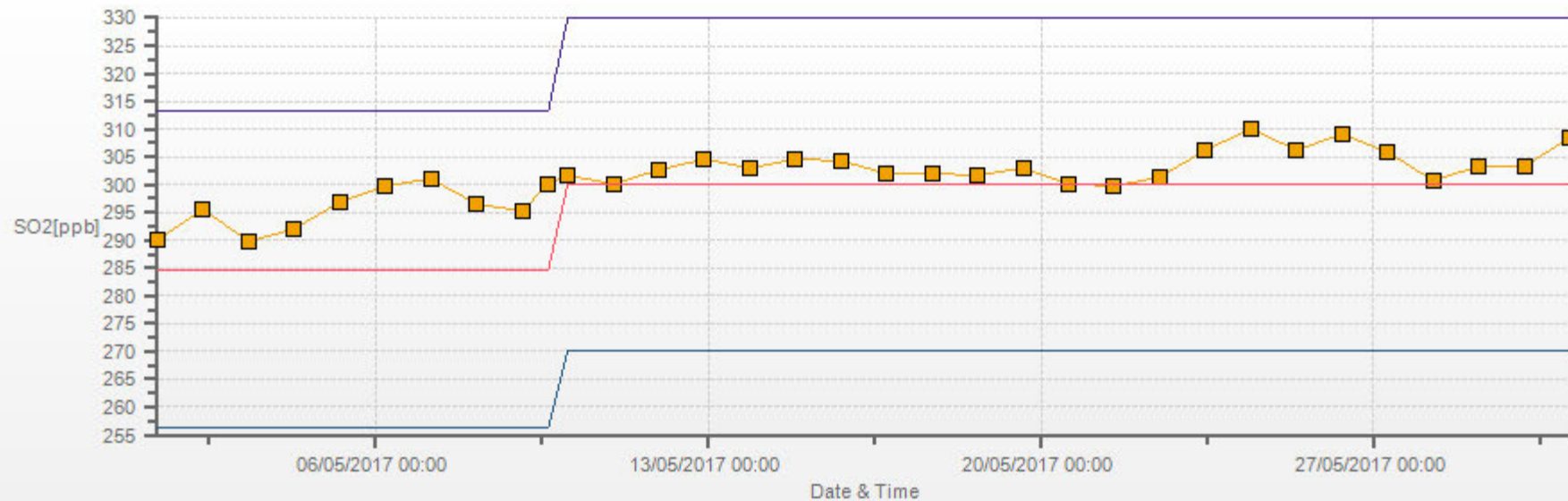
Calm Avg: 0.13 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	4.8	0.0	0.0	0.0	0.0	4.8
NE	9.2	0.0	0.0	0.0	0.0	9.2
E	15.1	0.0	0.0	0.0	0.0	15.1
SE	19.7	0.0	0.0	0.0	0.0	19.7
S	9.2	0.0	0.0	0.0	0.0	9.2
SW	16.6	0.0	0.0	0.0	0.0	16.6
W	13.2	0.0	0.0	0.0	0.0	13.2
NW	6.8	0.0	0.0	0.0	0.0	6.8
Summary	94.7	0.0	0.0	0.0	0.0	94.7

PRAMP_986 Poll.: PRAMP_986-SO₂[ppb] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 5.26% Calm Poll Avg: 0.13[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR

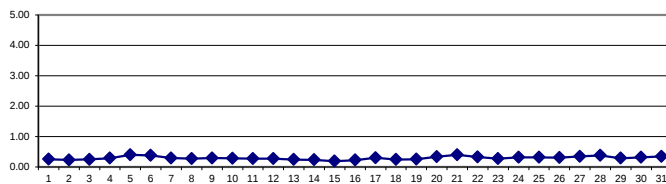
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.28	0.25	0.25	0.25	0.26	0.27	0.27	0.30	0.29	0.29	S	0.31	0.28	0.25	0.24	0.24	0.23	0.24	0.23	0.23	0.24	0.26	0.25	0.26	0.23	0.31	0.26	24	
2	0.24	0.25	0.24	0.25	0.29	0.27	0.28	0.24	0.23	S	0.24	0.22	0.21	0.21	0.21	0.21	0.20	0.20	0.22	0.21	0.22	0.23	0.22	0.23	0.20	0.29	0.23	24	
3	0.24	0.23	0.25	0.24	0.23	0.22	0.27	0.24	S	0.25	0.24	0.23	0.22	0.23	0.24	0.27	0.25	0.26	0.22	0.23	0.32	0.36	0.28	0.27	0.22	0.36	0.25	24	
4	0.39	0.32	0.30	0.28	0.29	0.31	0.31	S	0.30	0.26	0.23	0.30	0.28	0.25	0.25	0.23	0.24	0.22	0.23	0.24	0.32	0.38	0.37	0.40	0.22	0.40	0.29	24	
5	0.34	0.30	0.29	0.28	0.34	0.30	S	0.29	0.24	0.25	0.24	0.44	0.33	0.23	0.22	0.20	0.21	0.22	0.20	0.20	0.26	0.30	0.78	2.85	0.20	2.85	0.40	24	
6	2.03	0.48	0.44	0.44	0.48	S	0.47	0.40	0.40	0.32	0.30	0.32	0.25	0.26	0.19	0.20	0.22	0.21	0.21	0.22	0.22	0.25	0.25	0.32	0.19	2.03	0.39	24	
7	0.30	0.25	0.24	0.25	S	0.35	0.29	0.36	0.33	0.32	0.30	0.28	0.27	0.30	0.29	0.28	0.29	0.27	0.27	0.26	0.31	0.35	0.33	0.33	0.24	0.36	0.30	24	
8	0.31	0.27	0.31	S	0.35	0.32	0.30	0.31	0.30	0.27	0.27	0.28	0.24	0.25	0.25	0.25	0.24	0.25	0.24	0.23	0.24	0.24	0.29	0.25	0.23	0.35	0.27	24	
9	0.31	0.34	S	0.36	0.31	0.28	0.28	0.30	0.31	0.27	0.27	0.27	C	C	C	C	0.34	0.24	0.23	0.23	0.24	0.31	0.37	0.38	0.23	0.38	0.30	24	
10	0.37	S	0.37	0.40	0.36	0.33	0.32	0.28	0.28	0.25	0.24	0.23	0.24	0.25	0.23	0.23	0.24	0.24	0.26	0.25	0.25	0.27	0.30	0.35	0.23	0.40	0.28	24	
11	S	0.34	0.31	0.30	0.31	0.32	0.32	0.30	0.29	0.27	0.28	0.26	0.26	0.26	0.26	0.25	0.26	0.26	0.26	0.26	0.26	0.27	0.25	0.23	S	0.23	0.34	0.28	24
12	0.31	0.29	0.27	0.27	0.26	0.26	0.27	0.29	0.29	0.26	0.26	0.28	0.31	0.32	0.33	0.31	0.24	0.23	0.24	0.23	0.22	0.24	S	0.31	0.22	0.33	0.27	24	
13	0.28	0.26	0.23	0.24	0.32	0.33	0.23	0.22	0.22	0.23	0.21	0.23	0.23	0.22	0.23	0.23	0.25	0.29	0.25	0.21	0.28	S	0.27	0.26	0.21	0.33	0.25	24	
14	0.27	0.25	0.26	0.25	0.25	0.24	0.25	0.24	0.24	0.23	0.23	0.24	0.24	0.24	0.24	0.22	0.22	0.22	0.21	0.21	S	0.24	0.23	0.24	0.21	0.27	0.24	24	
15	0.20	0.18	0.19	0.19	0.20	0.18	0.20	0.19	0.19	0.20	0.20	0.20	0.19	0.19	0.18	0.19	0.19	0.19	0.19	S	0.23	0.21	0.21	0.23	0.18	0.23	0.20	24	
16	0.20	0.22	0.21	0.22	0.22	0.21	0.22	0.21	0.22	0.22	0.22	0.22	0.24	0.23	0.22	0.22	0.21	0.22	S	0.25	0.25	0.26	0.25	0.28	0.20	0.28	0.23	24	
17	0.40	0.66	0.55	0.56	0.53	0.36	0.27	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.21	S	0.25	0.23	0.25	0.24	0.23	0.23	0.21	0.66	0.30	24	
18	0.25	0.24	0.22	0.24	0.24	0.26	0.23	0.25	0.26	0.25	0.24	0.23	0.22	0.21	0.21	0.21	S	0.26	0.25	0.26	0.29	0.34	0.31	0.25	0.21	0.34	0.25	24	
19	0.26	0.29	0.26	0.25	0.27	0.27	0.27	0.27	0.27	0.26	0.25	0.23	0.22	0.22	0.22	S	0.24	0.23	0.23	0.22	0.23	0.27	0.26	0.35	0.22	0.35	0.25	24	
20	0.37	0.42	0.41	0.48	0.45	0.52	0.42	0.30	0.31	0.29	0.29	0.26	0.26	0.25	S	0.27	0.26	0.25	0.27	0.27	0.26	0.27	0.31	0.50	0.25	0.52	0.33	24	
21	0.58	0.52	0.52	0.46	0.45	0.49	0.46	0.36	0.31	0.33	0.29	0.27	0.25	S	0.27	0.27	0.28	0.28	0.29	0.32	0.55	0.58	0.57	0.47	0.25	0.58	0.40	24	
22	0.34	0.47	0.49	0.44	0.35	0.39	0.41	0.39	0.37	0.31	0.31	0.28	S	0.29	0.27	0.27	0.26	0.26	0.26	0.25	0.33	0.31	0.28	0.32	0.25	0.49	0.33	24	
23	0.31	0.30	0.29	0.27	0.28	0.27	0.28	0.27	0.27	0.27	0.26	S	0.29	0.26	0.25	0.26	0.26	0.25	0.26	0.26	0.29	0.29	0.27	0.26	0.25	0.31	0.27	24	
24	0.38	0.40	0.39	0.44	0.41	0.43	0.37	0.35	0.30	0.31	S	0.30	0.29	0.29	0.28	0.25	0.24	0.24	0.25	0.25	0.27	0.29	0.31	0.31	0.24	0.44	0.32	24	
25	0.36	0.32	0.35	0.34	0.43	0.38	0.30	0.30	0.30	S	0.35	0.30	0.27	0.26	0.26	0.27	0.25	0.25	0.25	0.27	0.30	0.47	0.36	0.37	0.25	0.47	0.32	24	
26	0.38	0.42	0.40	0.44	0.47	0.47	0.52	0.34	S	0.30	0.27	0.23	0.23	0.20	0.20	0.20	0.19	0.20	0.21	0.22	0.23	0.31	0.26	0.40	0.19	0.52	0.31	24	
27	0.75	0.60	0.67	0.57	0.43	0.35	0.29	S	0.26	0.23	0.23	0.23	0.22	0.23	0.23	0.23	0.23	0.24	0.24	0.23	0.24	0.26	0.27	0.75	0.22	0.75	0.35	24	
28	0.65	0.65	0.87	0.74	0.66	0.65	S	0.32	0.30	0.28	0.25	0.26	0.25	0.26	0.25	0.26	0.26	0.25	0.26	0.25	0.28	0.26	0.27	0.29	0.25	0.87	0.38	24	
29	0.31	0.33	0.31	0.34	0.34	S	0.37	0.32	0.30	0.28	0.28	0.28	0.27	0.26	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.28	0.29	0.26	0.37	0.29	24	
30	0.31	0.32	0.32	0.32	S	0.39	0.36	0.34	0.30	0.31	0.30	0.30	0.28	0.29	0.27	0.29	0.28	0.29	0.30	0.32	0.34	0.35	0.36	0.37	0.27	0.39	0.32	24	
31	0.38	0.46	0.41	S	0.41	0.43	0.51	0.41	0.42	0.39	0.37	0.35	0.32	0.29	0.30	0.27	0.25	0.24	0.23	0.23	0.24	0.38	0.35	0.31	0.23	0.51	0.35	24	
HOURLY MAX	2.03	0.66	0.87	0.74	0.66	0.65	0.52	0.41	0.42	0.39	0.37	0.44	0.33	0.32	0.33	0.31	0.34	0.29	0.30	0.32	0.55	0.58	0.78	2.85					
HOURLY AVG	0.40	0.35	0.35	0.35	0.35	0.34	0.32	0.30	0.29	0.27	0.26	0.27	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.24	0.27	0.30	0.31	0.41					

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

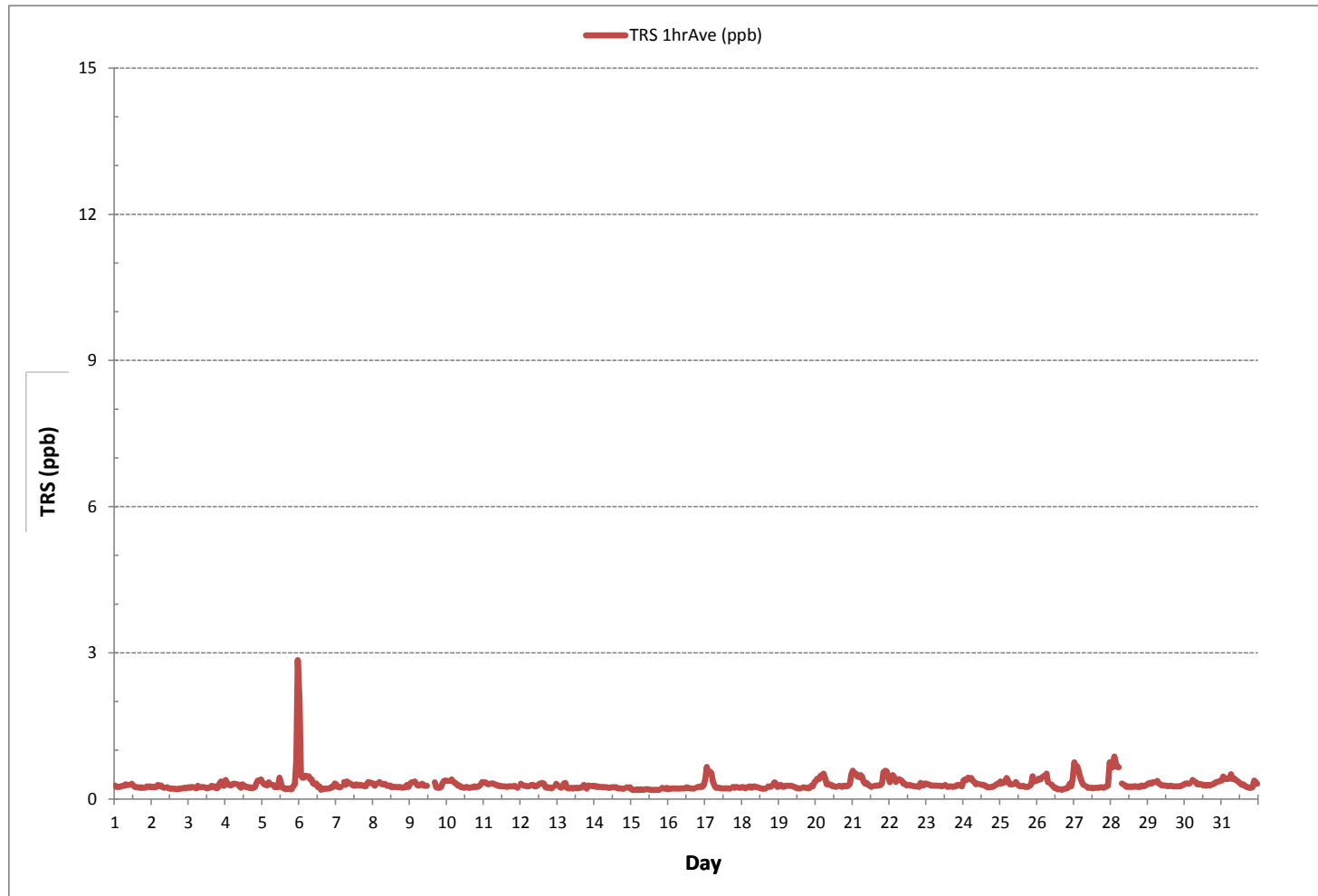
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708				
MINIMUM 1-HR AVERAGE:	0.18	ppb @ HOUR	1	ON DAY	15
MAXIMUM 1-HR AVERAGE:	2.85	ppb @ HOUR	23	ON DAY	5
MAXIMUM 24-HR AVERAGE:	0.40	ppb		ON DAY	5
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.15		MONTHLY AVERAGE:	0.30	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 2017

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

	HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
	HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																														
1		0.28	0.26	0.24	0.24	0.27	0.29	0.27	0.28	0.28	0.28	S	0.31	0.26	0.26	0.23	0.23	0.23	0.31	0.21	0.23	0.23	0.26	0.28	0.23	0.26	0.21	0.31	0.26	24
2		0.23	0.23	0.23	0.24	0.26	0.28	0.28	0.23	0.21	S	0.23	0.23	0.18	0.21	0.21	0.23	0.23	0.18	0.23	0.23	0.23	0.21	0.23	0.26	0.18	0.28	0.23	24	
3		0.26	0.23	0.26	0.26	0.28	0.26	0.27	0.26	S	0.31	0.23	0.23	0.26	0.23	0.23	0.26	0.26	0.28	0.21	0.34	0.41	0.42	0.31	0.28	0.21	0.42	0.28	24	
4		0.44	0.31	0.31	0.28	0.28	0.49	0.34	S	0.33	0.23	0.26	0.33	0.36	0.23	0.23	0.21	0.23	0.23	0.21	0.23	0.33	0.49	0.39	0.41	0.21	0.49	0.31	24	
5		0.36	0.28	0.31	0.31	0.42	0.28	S	0.31	0.23	0.26	0.26	0.47	0.36	0.23	0.26	0.18	0.21	0.21	0.21	0.21	0.31	0.31	3.19	3.96	0.18	3.96	0.57	24	
6		3.41	0.57	0.47	0.47	0.49	S	0.50	0.50	0.39	0.31	0.34	0.31	0.26	0.28	0.21	0.15	0.21	0.15	0.21	0.18	0.15	0.18	0.21	0.33	0.15	3.41	0.45	24	
7		0.31	0.21	0.18	0.26	S	0.37	0.28	0.31	0.31	0.28	0.26	0.26	0.21	0.26	0.26	0.23	0.23	0.23	0.23	0.21	0.26	0.31	0.33	0.33	0.18	0.37	0.27	24	
8		0.26	0.26	0.36	S	0.33	0.28	0.26	0.26	0.31	0.23	0.21	0.23	0.26	0.26	0.23	0.23	0.21	0.21	0.21	0.23	0.23	0.23	0.28	0.28	0.21	0.36	0.25	24	
9		0.36	0.36	S	0.39	0.31	0.29	0.31	0.28	0.34	0.28	0.28	0.26	C	C	C	C	0.63	0.33	0.23	0.21	0.23	0.37	0.36	0.36	0.21	0.63	0.33	24	
10		0.39	S	0.44	0.41	0.39	0.31	0.34	0.23	0.23	0.23	0.23	0.23	0.21	0.21	0.21	0.23	0.21	0.21	0.23	0.23	0.21	0.26	0.28	0.33	0.21	0.44	0.27	24	
11		S	0.31	0.28	0.28	0.28	0.28	0.31	0.26	0.26	0.23	0.23	0.26	0.21	0.21	0.21	0.21	0.23	0.23	0.21	0.21	0.28	0.21	0.21	S	0.21	0.31	0.25	24	
12		0.28	0.26	0.21	0.23	0.21	0.23	0.23	0.23	0.23	0.21	0.23	0.26	0.28	0.31	0.34	0.31	0.21	0.18	0.18	0.20	0.20	0.21	S	0.34	0.18	0.34	0.24	24	
13		0.28	0.28	0.15	0.18	0.31	0.33	0.16	0.23	0.18	0.16	0.16	0.15	0.23	0.16	0.18	0.19	0.21	0.23	0.21	0.15	0.31	S	0.21	0.19	0.15	0.33	0.21	24	
14		0.23	0.20	0.20	0.22	0.18	0.18	0.19	0.21	0.22	0.18	0.21	0.18	0.18	0.21	0.21	0.21	0.15	0.18	0.16	0.15	S	0.21	0.18	0.23	0.15	0.23	0.19	24	
15		0.18	0.13	0.15	0.18	0.20	0.13	0.28	0.21	0.21	0.18	0.18	0.18	0.15	0.15	0.12	0.15	0.15	0.18	0.13	S	0.18	0.15	0.18	0.21	0.12	0.28	0.17	24	
16		0.18	0.18	0.18	0.21	0.16	0.18	0.18	0.15	0.15	0.18	0.21	0.18	0.18	0.18	0.21	0.15	0.15	0.13	S	0.23	0.20	0.21	0.23	0.24	0.13	0.24	0.18	24	
17		0.52	1.02	0.58	0.82	0.52	0.31	0.20	0.19	0.21	0.18	0.18	0.15	0.15	0.21	0.15	0.15	0.15	S	0.26	0.18	0.18	0.21	0.18	0.18	0.15	1.02	0.30	24	
18		0.21	0.21	0.18	0.21	0.21	0.22	0.20	0.21	0.23	0.23	0.21	0.21	0.21	0.21	0.21	0.21	S	0.23	0.21	0.23	0.28	0.39	0.28	0.23	0.18	0.39	0.23	24	
19		0.26	0.28	0.23	0.21	0.22	0.26	0.21	0.23	0.23	0.21	0.18	0.18	0.15	0.13	0.15	S	0.26	0.26	0.18	0.18	0.21	0.26	0.23	0.33	0.13	0.33	0.22	24	
20		0.34	0.39	0.44	0.49	0.52	0.52	0.39	0.28	0.26	0.23	0.21	0.21	0.21	0.18	S	0.23	0.21	0.23	0.23	0.21	0.21	0.18	0.26	0.68	0.18	0.68	0.31	24	
21		0.65	0.60	0.52	0.46	0.46	0.52	0.39	0.39	0.26	0.28	0.23	0.23	0.18	S	0.21	0.21	0.21	0.21	0.21	0.31	0.52	0.52	0.55	0.44	0.18	0.65	0.37	24	
22		0.28	0.47	0.44	0.42	0.31	0.31	0.34	0.34	0.33	0.26	0.26	0.18	S	0.23	0.21	0.21	0.28	0.18	0.21	0.18	0.31	0.28	0.21	0.26	0.18	0.47	0.28	24	
23		0.28	0.23	0.21	0.18	0.18	P	0.21	0.18	0.21	0.21	0.18	S	0.23	0.21	0.18	0.18	0.18	0.18	0.18	0.21	0.28	0.21	0.23	0.21	0.18	0.28	0.21	23	
24		0.42	0.39	0.36	0.39	0.36	0.49	0.34	0.36	0.23	0.23	S	0.23	0.21	0.21	0.18	0.18	0.15	0.14	0.15	P	0.21	0.23	0.23	0.26	0.14	0.49	0.27	23	
25		0.34	0.28	0.31	0.28	0.55	0.29	0.23	0.21	0.21	S	0.28	0.21	0.21	0.15	0.21	0.21	0.18	0.18	0.21	0.18	0.39	0.42	0.37	0.37	0.15	0.55	0.27	24	
26		0.34	0.42	0.36	0.50	0.54	0.47	0.52	0.34	S	0.26	0.23	0.18	0.18	0.15	0.15	0.14	0.13	0.14	0.18	0.18	0.15	0.31	0.21	0.86	0.13	0.86	0.30	24	
27		1.39	0.68	1.26	0.63	0.52	0.39	0.26	S	0.23	0.18	0.21	0.15	0.18	0.23	0.18	0.15	0.18	0.23	0.21	0.18	0.23	0.21	0.60	1.09	0.15	1.39	0.42	24	
28		1.15	1.07	1.29	1.09	0.70	0.73	S	0.26	0.26	0.21	0.21	0.23	0.21	0.21	0.21	0.21	0.18	0.18	0.23	0.21	0.21	0.21	P	0.23	0.18	1.29	0.43	23	
29		0.26	0.28	0.26	0.26	0.28	S	0.39	0.26	0.23	0.21	0.21	0.21	0.21	0.18	0.18	0.21	0.18	0.18	0.15	0.20	0.18	0.21	0.21	0.26	0.15	0.39	0.23	24	
30		0.23	0.26	0.28	0.28	S	0.36	0.28	0.26	0.21	0.28	0.23	0.23	0.18	0.21	0.18	0.21	0.23	0.21	0.21	0.23	0.26	0.31	0.26	0.36	0.18	0.36	0.25	24	
31		0.33	0.41	0.34	S	0.34	0.36	0.50	0.34	0.36	0.31	0.31	P	0.26	0.21	0.21	0.21	0.18	0.18	0.16	0.16	0.26	0.42	0.31	0.26	0.16	0.50	0.29	23	
HOURLY MAX		3.41	1.07	1.29	1.09	0.70	0.73	0.52	0.50	0.39	0.31	0.34	0.47	0.36	0.31	0.34	0.31	0.63	0.33	0.26	0.34	0.52	0.52	3.19	3.96					
HOURLY AVG		0.48	0.37	0.37	0.36	0.35	0.34	0.30	0.27	0.25	0.24	0.23	0.23	0.22	0.21	0.21	0.20	0.22	0.21	0.20	0.21	0.26	0.28	0.38	0.47					

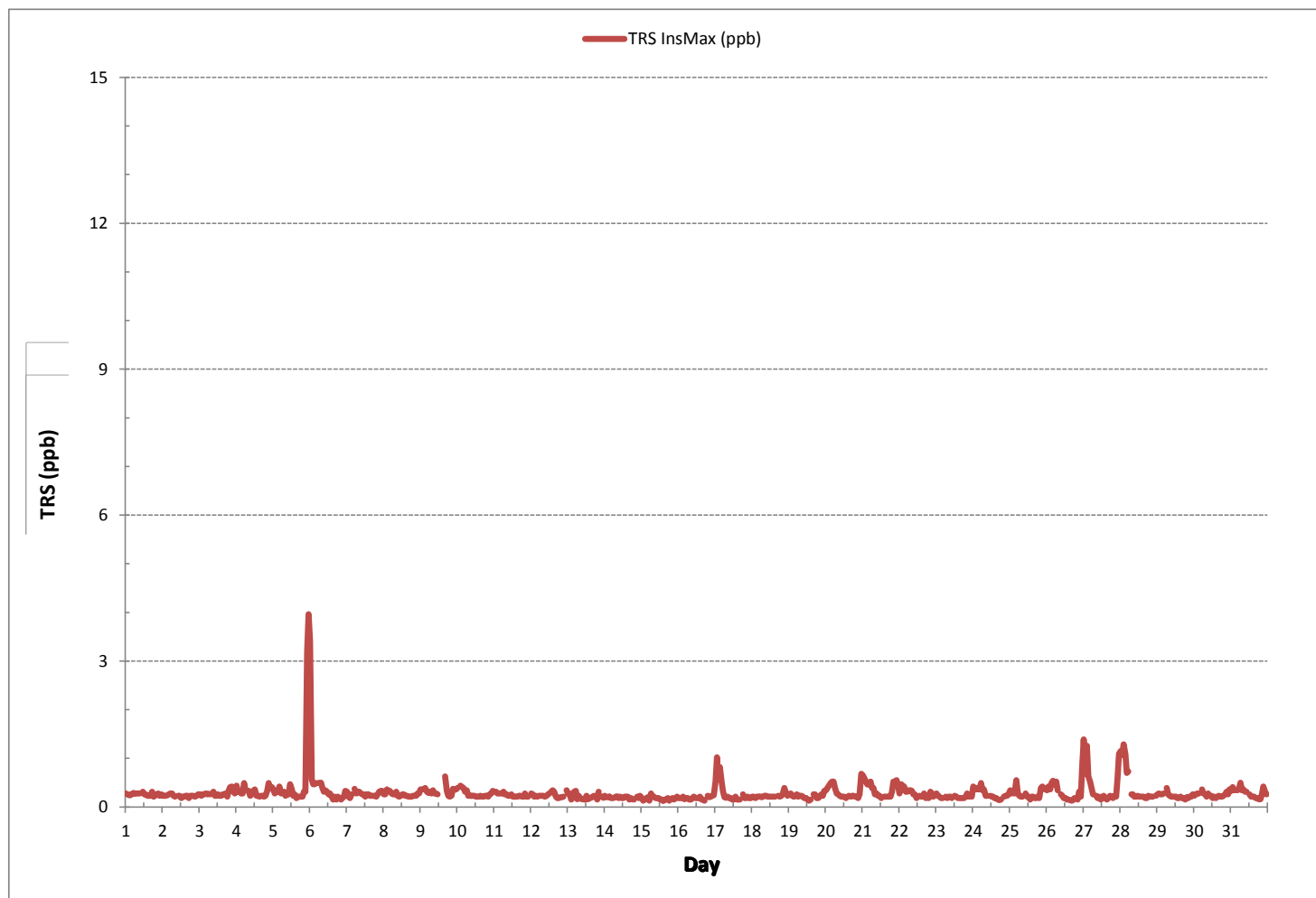
STATUS FLAG CODES

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:	704				
MAXIMUM INSTANTANEOUS VALUE:	3.96	ppb	@ HOUR	23	ON DAY 5
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	740	hrs
MONTHLY CALIBRATION TIME:	4	hrs			
STANDARD DEVIATION:	0.25				

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

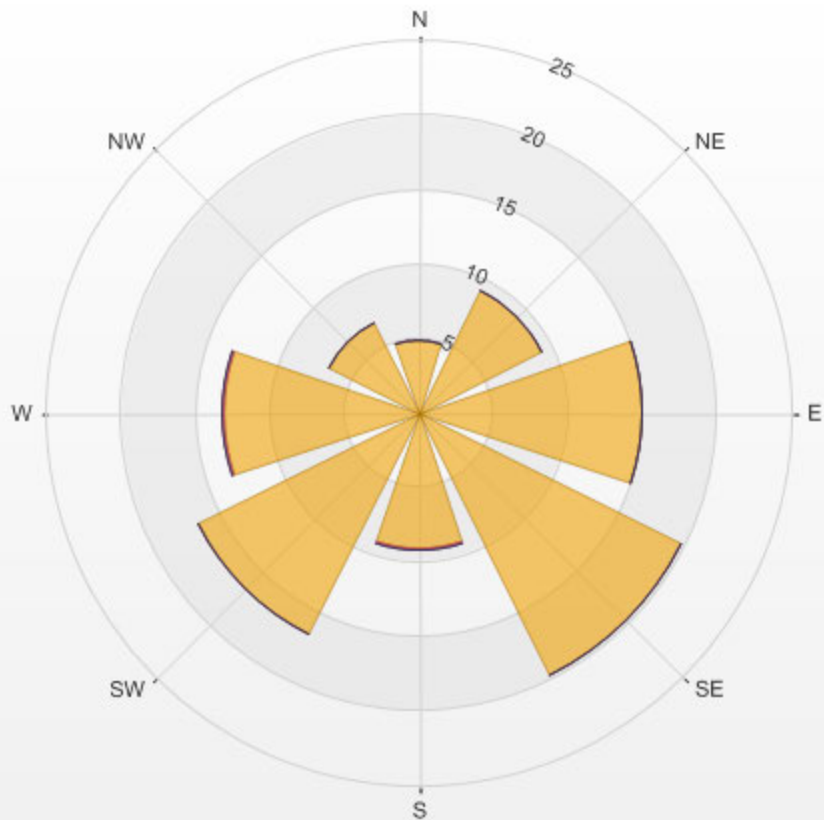
Calm: 5.26%

Calm Avg: 0.37 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	4.8	0.0	0.0	0.0	4.8
NE	9.2	0.0	0.0	0.0	9.2
E	15.1	0.0	0.0	0.0	15.1
SE	19.7	0.0	0.0	0.0	19.7
S	9.1	0.1	0.0	0.0	9.2
SW	16.6	0.0	0.0	0.0	16.6
W	13.1	0.1	0.0	0.0	13.2
NW	6.8	0.0	0.0	0.0	6.8
Summary	94.5	0.3	0.0	0.0	94.7

%	Icon	Classes (ppb)	94	0	1-3	0	3-10	0	>10.0

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 5.26% Calm Poll Avg: 0.37[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON

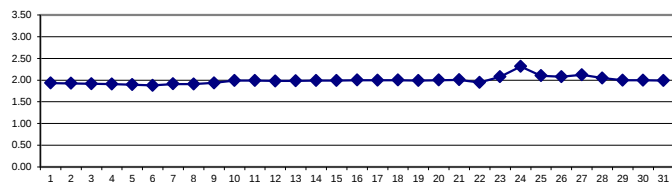
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.93	1.93	1.94	1.95	1.95	1.98	1.95	1.93	1.92	1.91	S	1.91	1.91	1.92	1.93	1.92	1.91	1.90	1.90	1.90	2.05	1.91	1.91	2.01	1.90	2.05	1.93	24	
2	2.04	2.00	1.94	1.95	1.94	1.91	1.91	1.93	1.91	S	1.92	1.91	1.91	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.96	1.90	2.04	1.93	24	
3	1.97	1.98	1.95	1.96	2.00	1.94	1.95	1.96	S	1.91	1.90	1.90	1.89	1.88	1.88	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.89	1.90	1.87	2.00	1.91	24	
4	1.89	1.89	1.90	1.90	1.90	1.91	1.91	S	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.93	1.97	1.98	1.99	1.88	1.99	1.91	24	
5	1.97	1.95	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.91	1.91	1.90	1.89	1.89	1.86	1.85	1.84	1.83	1.89	1.86	1.88	1.90	1.83	1.97	1.89	24	
6	1.88	1.85	1.85	1.85	1.86	S	1.88	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.90	1.85	1.90	1.88	24	
7	1.90	1.90	1.90	1.90	S	1.91	1.91	1.91	1.92	1.91	1.90	1.90	1.89	1.91	1.90	1.90	1.91	1.90	1.95	1.95	1.90	1.98	1.91	1.90	1.89	1.98	1.91	24	
8	1.91	1.92	1.91	S	1.96	1.94	1.91	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.89	1.96	1.91	24	
9	1.92	1.91	S	1.92	1.95	1.95	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.89	C	C	C	C	1.96	1.96	1.98	2.02	2.02	1.89	2.02	1.93	24	
10	2.03	S	2.03	2.05	2.03	2.01	1.99	1.98	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.97	1.97	1.99	2.00	2.01	1.96	2.05	1.99	24	
11	S	2.01	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.97	S	1.97	2.01	1.99	24	
12	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	S	1.97	1.99	1.98	24	
13	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	2.00	2.00	1.97	2.00	1.98	24
14	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.97	S	1.98	1.99	2.00	1.97	2.00	1.99	24
15	1.99	1.99	1.99	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.99	S	1.99	1.99	2.00	2.00	1.98	2.01	1.99	24	
16	2.00	2.00	2.00	2.01	2.00	2.01	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	S	1.98	1.99	2.00	2.02	2.01	1.98	2.02	2.00	24	
17	2.02	2.03	2.03	2.03	2.03	2.02	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.98	1.98	1.98	1.99	1.99	1.99	2.00	1.98	2.03	2.00	24	
18	2.00	2.00	2.01	2.02	2.03	2.02	2.01	2.02	2.02	2.02	2.02	2.01	2.00	1.99	1.99	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.03	2.00	24	
19	1.99	1.99	2.02	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.98	1.97	1.97	1.97	1.96	S	1.96	1.96	2.00	1.96	2.01	2.01	1.98	1.98	1.96	2.02	1.99	24	
20	1.98	1.99	2.13	2.05	2.03	2.04	2.01	1.99	1.99	1.98	1.98	1.97	1.98	1.97	S	1.98	1.98	1.98	1.99	2.02	1.98	1.98	1.98	2.00	1.97	2.13	2.00	24	
21	2.00	2.01	2.05	2.10	2.09	2.13	2.09	2.02	1.99	1.99	1.99	1.98	1.98	S	1.98	1.97	1.96	1.95	1.99	1.97	1.97	1.96	1.97	1.97	1.95	2.13	2.00	24	
22	1.96	1.97	1.97	1.96	1.96	1.97	1.96	1.96	1.96	1.95	1.95	1.94	S	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.93	1.97	1.95	24	
23	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.92	S	1.92	1.92	1.92	1.92	1.92	1.95	2.01	2.09	2.42	2.89	2.84	2.44	2.21	1.92	2.89	2.08	24	
24	2.04	2.00	2.85	2.73	2.71	3.44	3.30	2.96	2.29	2.53	S	2.02	1.94	1.94	1.95	1.95	1.96	1.97	1.99	2.02	2.00	2.16	2.23	2.28	1.94	3.44	2.32	24	
25	2.60	2.46	2.48	2.09	2.15	2.06	1.97	2.03	1.98	S	1.98	1.97	2.01	2.02	1.96	1.95	1.97	1.95	1.96	2.06	2.15	2.26	2.24	2.00	1.95	2.60	2.10	24	
26	2.11	2.18	2.03	2.43	2.59	2.07	2.16	2.05	S	2.01	2.00	2.05	2.09	2.08	2.08	1.99	1.97	1.97	2.06	2.00	1.96	1.98	1.96	1.99	1.96	2.59	2.08	24	
27	2.00	2.02	2.17	2.18	2.24	2.00	1.98	S	1.97	1.98	2.03	2.00	2.03	2.12	2.07	2.10	2.07	2.14	2.17	2.09	2.35	2.39	2.48	2.15	1.97	2.48	2.12	24	
28	2.25	2.22	2.18	2.13	2.24	2.06	S	2.01	2.01	2.01	2.00	2.02	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	2.25	2.04	24	
29	2.00	2.02	2.02	2.03	2.04	S	2.01	2.00	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.97	1.98	1.97	1.98	1.98	1.99	1.99	1.99	2.00	1.97	2.04	2.00	24	
30	2.00	2.02	2.02	2.01	S	2.02	2.01	2.02	2.01	2.01	2.00	1.99	1.98	1.97	1.97	1.97	1.96	1.97	1.97	1.98	1.99	2.00	2.02	2.01	1.96	2.02	2.00	24	
31	2.04	2.03	2.03	S	2.07	2.12	2.06	2.08	2.04	2.01	2.01	1.96	1.94	1.93	1.94	1.94	1.93	1.92	1.92	1.92	1.94	1.96	1.93	1.97	1.92	2.12	1.99	24	
HOURLY MAX	2.60	2.46	2.85	2.73	2.71	3.44	3.30	2.96	2.29	2.53	2.03	2.05	2.09	2.12	2.08	2.10	2.07	2.14	2.17	2.42	2.89	2.84	2.48	2.28					
HOURLY AVG	2.01	2.01	2.04	2.04	2.05	2.04	2.03	2.01	1.98	1.98	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.97	1.97	2.01	2.02	2.01	2.00					

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

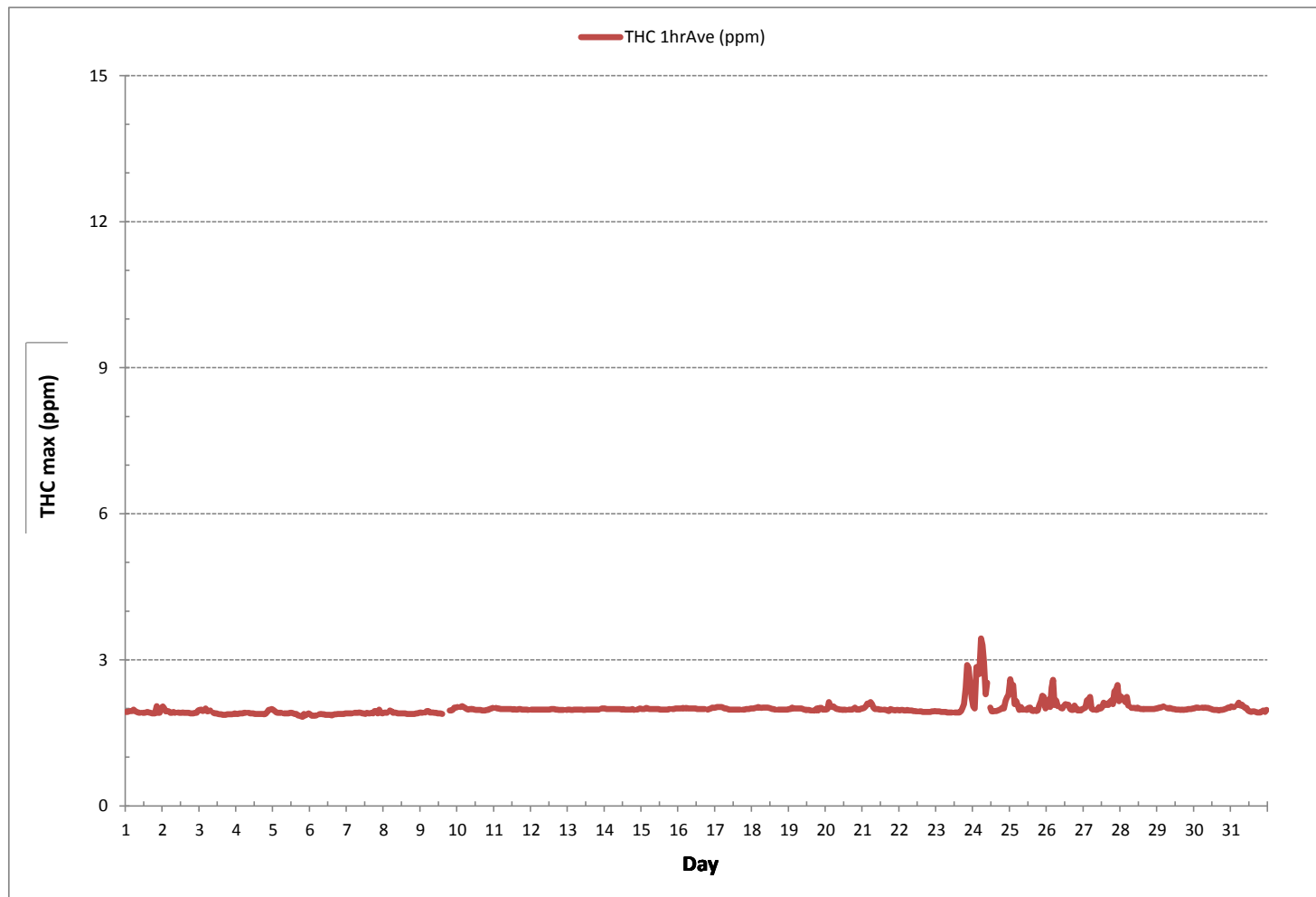
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.83	ppm @ HOUR	19	ON DAY 5
MAXIMUM 1-HR AVERAGE:	3.44	ppm @ HOUR	5	ON DAY 24
MAXIMUM 24-HR AVERAGE:	2.32	ppm		ON DAY 24
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	1.99 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - May 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	1.97	1.98	2.01	1.99	2.01	2.27	1.99	1.99	1.92	1.91	S	1.97	1.95	1.97	1.99	1.99	1.97	1.90	1.90	1.90	2.89	1.94	1.93	2.41	1.90	2.89	2.03	24
2	3.00	2.85	2.10	2.16	2.37	1.91	1.95	2.03	1.97	S	2.00	1.94	1.99	1.98	1.94	1.93	1.98	1.96	1.92	1.91	1.91	1.93	1.92	2.01	1.91	3.00	2.07	24
3	1.99	2.02	1.98	1.97	2.64	1.99	1.98	1.96	S	1.91	1.91	1.90	1.89	1.88	1.88	1.87	1.87	1.88	1.88	1.88	1.91	1.90	1.91	2.00	1.87	2.64	1.96	24
4	1.89	1.89	1.91	1.90	1.91	1.94	1.93	S	1.95	1.91	1.90	1.94	1.91	1.90	1.95	1.90	1.92	1.89	1.88	1.92	2.39	2.05	2.04	2.18	1.88	2.39	1.96	24
5	2.00	2.08	1.98	1.91	1.91	1.92	S	1.90	1.90	1.90	1.90	1.91	1.91	1.90	1.90	1.89	1.87	1.85	1.86	1.86	2.12	2.00	2.02	2.05	1.85	2.12	1.94	24
6	2.03	1.86	1.86	1.86	1.86	S	1.88	1.89	1.92	1.88	1.89	1.88	1.90	1.90	1.88	1.90	1.89	1.96	1.96	2.01	1.89	1.89	1.93	1.89	1.86	2.03	1.90	24
7	1.90	1.90	1.90	1.90	S	1.91	1.91	1.96	1.97	1.95	1.94	1.90	1.90	2.01	1.95	1.95	2.02	1.95	2.10	2.28	1.91	2.73	1.91	1.92	1.90	2.73	1.99	24
8	2.04	2.11	1.90	S	1.98	1.96	1.91	1.92	1.91	1.90	1.92	1.95	1.92	1.98	1.98	1.90	1.94	1.89	1.91	1.92	1.94	1.91	1.90	1.96	1.89	2.11	1.94	24
9	1.92	1.92	S	1.93	1.99	2.00	1.92	1.93	1.91	1.94	1.93	1.92	1.92	1.91	1.93	C	C	C	C	2.02	1.99	2.02	2.10	2.04	1.91	2.10	1.96	24
10	2.10	S	2.12	2.08	2.05	2.04	2.01	1.99	2.01	2.00	1.99	1.98	1.98	1.97	1.98	1.97	1.96	1.96	1.97	1.97	1.98	2.02	2.09	2.10	1.96	2.12	2.01	24
11	S	2.02	2.00	2.01	2.00	2.01	2.00	2.00	1.99	1.99	1.99	2.00	1.99	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	S	1.98	2.02	2.00	24
12	1.99	1.98	1.98	2.01	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.99	1.99	2.00	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.99	S	1.98	1.98	2.01	1.99	24
13	1.99	1.99	2.01	1.98	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.98	2.00	S	2.01	2.01	1.98	2.01	1.99	24
14	2.03	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.06	2.01	2.02	2.00	2.03	2.01	2.02	2.01	2.01	2.00	2.10	1.98	S	1.99	2.00	2.01	1.98	2.10	2.01	24
15	1.99	1.99	2.01	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	2.02	1.99	1.99	1.99	1.99	S	1.99	2.00	2.00	2.01	1.99	2.02	2.00	24
16	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	1.99	2.08	1.99	1.99	S	1.99	1.99	2.01	2.05	2.04	1.99	2.08	2.01	24
17	2.03	2.06	2.05	2.05	2.04	2.03	2.01	2.02	2.00	1.99	1.99	1.99	1.99	1.98	1.99	1.98	1.99	S	1.98	1.99	2.00	2.00	2.00	2.02	1.98	2.06	2.01	24
18	2.01	2.01	2.02	2.04	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.00	2.00	1.99	S	2.01	1.98	1.98	1.99	1.99	1.99	2.00	1.98	2.04	2.01	24
19	2.00	2.00	2.04	2.02	2.01	2.01	2.00	2.02	2.00	2.00	1.99	1.98	1.97	1.97	1.96	S	2.02	1.97	2.09	1.97	3.10	3.10	2.06	1.99	1.96	3.10	2.10	24
20	1.99	2.52	3.02	2.12	2.07	2.28	2.17	2.03	2.05	2.02	2.03	1.99	2.01	1.99	S	1.99	2.00	2.03	2.05	2.40	2.07	1.99	2.01	2.05	1.99	3.02	2.13	24
21	2.05	2.04	2.09	2.12	2.12	2.16	2.12	2.06	2.00	2.00	2.01	1.98	1.98	S	2.15	2.07	2.02	2.01	2.19	2.01	1.99	2.00	1.99	1.98	1.98	2.19	2.05	24
22	1.97	2.00	1.98	1.99	1.96	1.98	1.96	1.96	1.96	1.95	1.95	1.95	S	1.96	1.94	1.93	1.94	1.94	1.93	1.94	1.94	1.94	1.95	1.94	1.93	2.00	1.95	24
23	1.95	1.94	1.94	1.93	1.93	P	1.94	1.92	1.93	1.92	1.93	S	1.96	1.91	1.93	1.93	2.53	3.20	2.77	5.12	6.38	6.61	7.30	4.03	1.91	7.30	2.95	23
24	3.32	2.72	8.04	4.69	6.39	10.03	6.37	6.57	4.49	5.03	S	2.63	1.94	1.94	2.03	2.00	2.06	2.03	2.38	P	2.07	3.00	3.12	3.42	1.94	10.03	3.92	23
25	4.72	4.20	3.22	2.67	2.55	2.37	2.10	2.64	2.26	S	2.05	2.17	2.89	2.93	1.98	2.06	2.20	1.96	2.04	2.92	5.86	5.86	3.07	2.77	1.96	5.86	2.93	24
26	4.48	11.44	2.42	6.19	5.35	2.89	2.61	2.52	S	2.38	2.14	3.21	3.48	3.67	3.80	2.25	2.17	2.19	5.67	2.52	1.98	2.09	2.00	2.03	1.98	11.44	3.46	24
27	2.07	2.38	3.42	4.29	4.71	2.15	2.01	S	1.99	2.04	3.40	2.32	2.41	3.98	2.73	3.01	2.72	2.91	3.56	3.00	4.90	3.93	8.49	3.38	1.99	8.49	3.30	24
28	3.50	8.98	5.74	2.80	3.49	2.31	S	2.02	2.02	2.02	2.13	2.27	2.27	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	2.00	P	2.01	1.99	8.98	2.71	23
29	2.01	2.04	2.03	2.04	2.04	S	2.02	2.01	2.01	2.01	2.00	1.99	1.99	1.99	1.99	1.98	2.27	1.98	1.98	2.00	2.00	2.00	2.01	1.98	2.27	2.02	24	
30	2.01	2.02	2.03	2.02	S	2.03	2.03	2.02	2.02	2.02	2.01	2.00	2.00	1.98	1.98	1.98	1.98	1.97	1.99	1.99	2.01	2.02	2.04	2.06	1.97	2.06	2.01	24
31	2.22	2.06	2.06	S	2.40	2.41	2.09	2.20	2.19	2.05	2.11	P	2.00	2.01	1.97	2.00	1.94	1.93	1.92	1.92	2.02	2.03	1.96	2.00	1.92	2.41	2.07	23
HOURLY MAX	4.72	11.44	8.04	6.19	6.39	10.03	6.37	6.57	4.49	5.03	3.40	3.21	3.48	3.98	3.80	3.01	2.72	3.20	5.67	5.12	6.38	6.61	8.49	4.03				
HOURLY AVG	2.31	2.70	2.46	2.37	2.48	2.38	2.17	2.19	2.08	2.09	2.04	2.06	2.07	2.12	2.06	2.02	2.04	2.04	2.21	2.18	2.44	2.43	2.47	2.21				

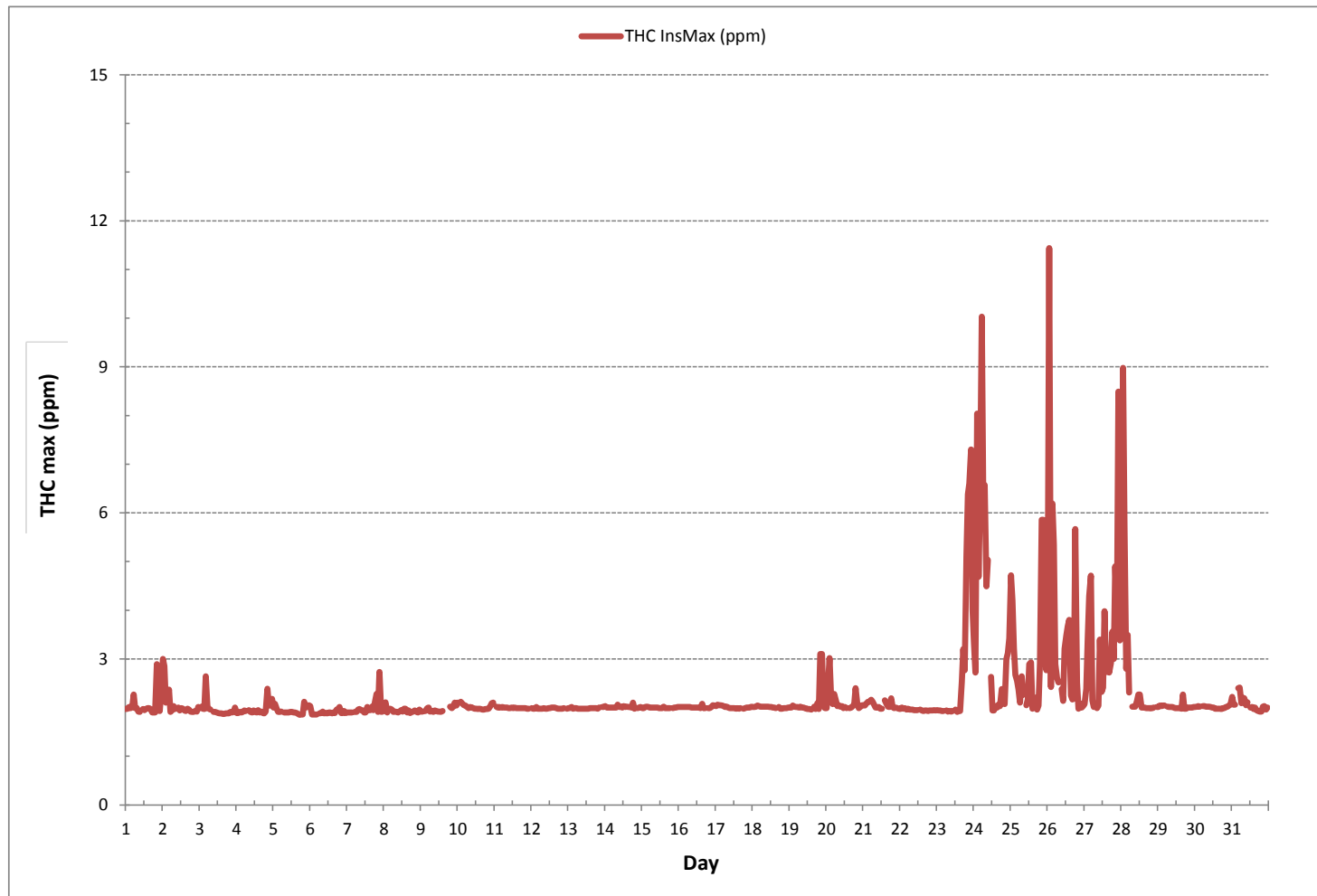
STATUS FLAG CODES

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:		704					
MAXIMUM INSTANTANEOUS VALUE:		11.44	ppm	@ HOUR	1	ON DAY	26
IZS CALIBRATION TIME:		32	hrs	OPERATIONAL TIME:		740	hrs
MONTHLY CALIBRATION TIME:		4	hrs				
STANDARD DEVIATION:		0.92					

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



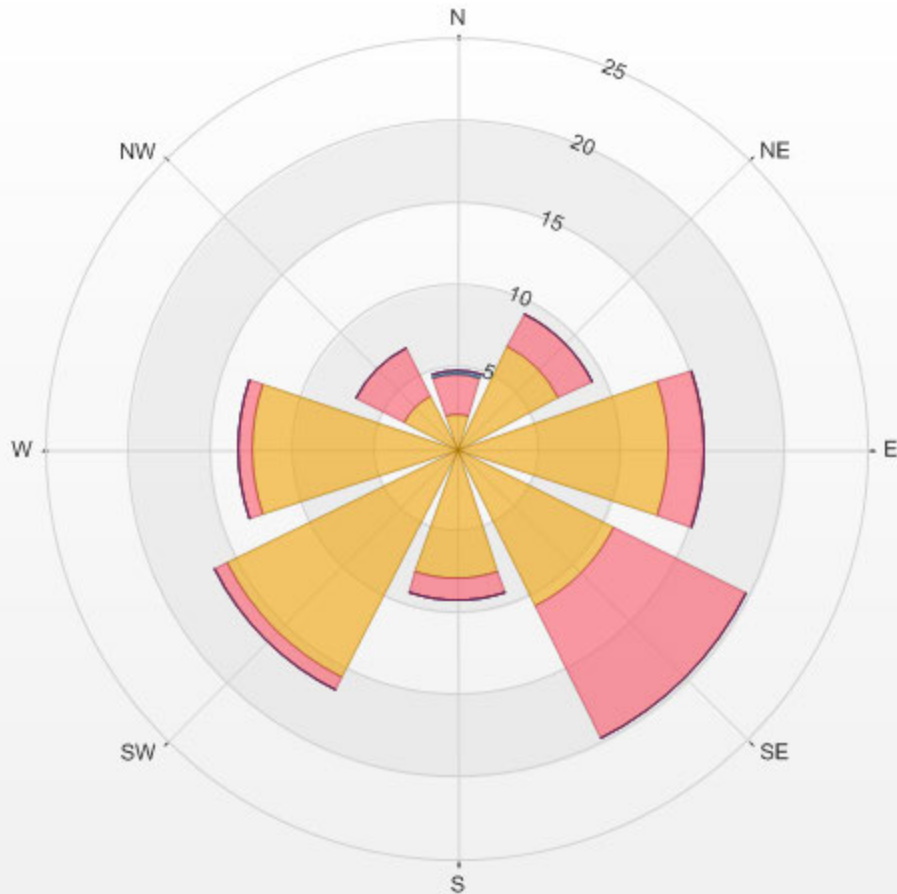
Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.26%

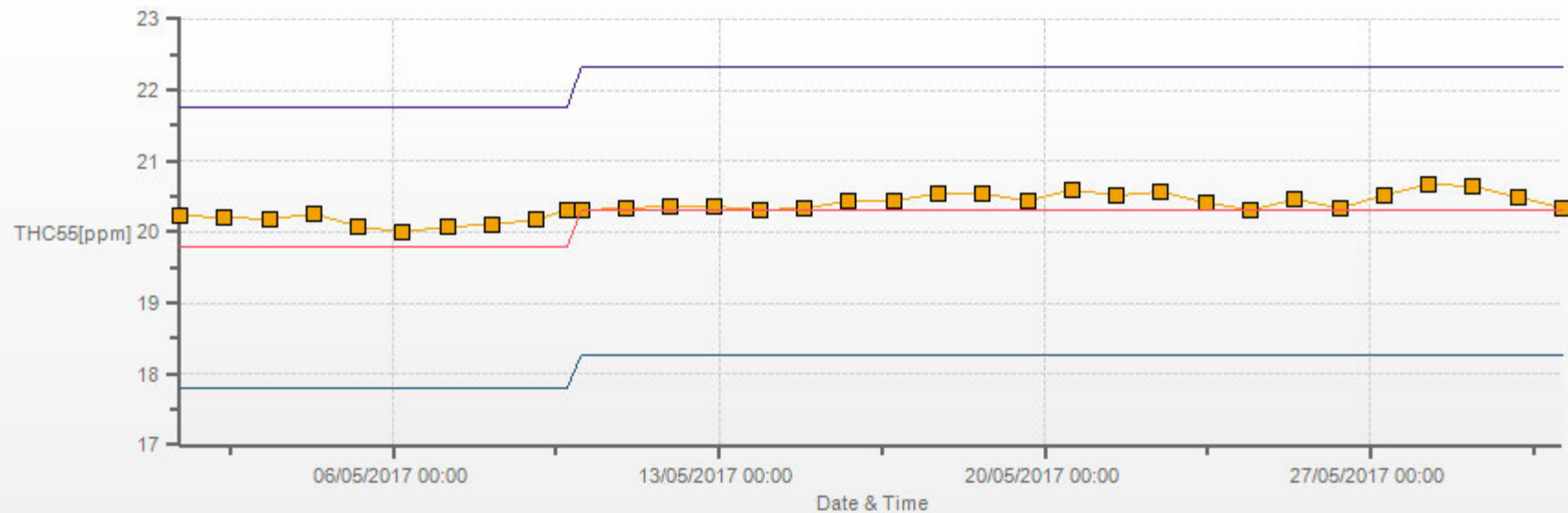
Calm Avg: 2.02 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	2.1	2.4	0.3	0.0	0.0	4.8
NE	7.0	2.3	0.0	0.0	0.0	9.2
E	12.9	2.1	0.0	0.0	0.0	15.1
SE	10.7	9.1	0.0	0.0	0.0	19.7
S	8.0	1.3	0.0	0.0	0.0	9.2
SW	15.6	0.9	0.0	0.0	0.0	16.5
W	12.5	0.9	0.0	0.0	0.0	13.4
NW	3.6	3.3	0.0	0.0	0.0	6.8
Summary	72.3	22.2	0.3	0.0	0.0	94.7

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 5.26% Calm Poll Avg: 2.02[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

METHANE

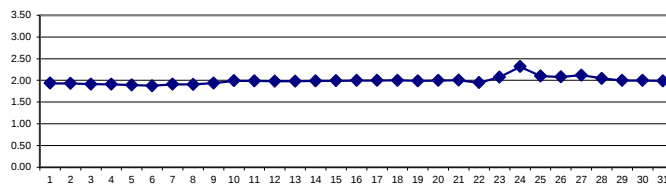
METHANE Hourly Averages (CH₄ ppm)

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	1.93	1.93	1.94	1.95	1.95	1.98	1.95	1.93	1.92	1.91	S	1.91	1.91	1.92	1.93	1.92	1.91	1.90	1.90	1.90	2.05	1.91	1.91	2.01	1.90	2.05	1.93	24	
2	2.04	2.00	1.94	1.95	1.94	1.91	1.91	1.93	1.91	S	1.92	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.96	1.90	2.04	1.93	24
3	1.97	1.98	1.95	1.96	2.00	1.94	1.95	1.96	S	1.91	1.90	1.90	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.90	1.87	2.00	1.91	24	
4	1.89	1.89	1.90	1.90	1.90	1.91	1.90	S	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.89	1.93	1.97	1.98	1.99	1.88	1.99	1.91	24	
5	1.97	1.95	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.91	1.91	1.90	1.89	1.89	1.86	1.85	1.84	1.83	1.89	1.86	1.88	1.90	1.83	1.97	1.89	24	
6	1.88	1.85	1.85	1.85	1.86	S	1.88	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.90	1.85	1.90	1.88	24	
7	1.90	1.90	1.90	1.90	S	1.91	1.91	1.91	1.92	1.91	1.90	1.90	1.89	1.91	1.90	1.90	1.91	1.90	1.95	1.95	1.90	1.98	1.91	1.90	1.89	1.98	1.91	24	
8	1.91	1.92	1.91	S	1.96	1.94	1.91	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.89	1.96	1.91	24	
9	1.92	1.91	S	1.92	1.95	1.95	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.89	C	C	C	C	1.96	1.96	1.98	2.02	2.02	1.89	2.02	1.93	24	
10	2.03	S	2.03	2.05	2.03	2.01	1.99	1.98	1.99	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.97	1.97	1.99	2.00	2.01	1.96	2.05	1.99	24	
11	S	2.01	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.98	1.98	1.99	1.99	1.98	1.98	1.98	1.98	1.97	S	1.97	2.01	1.99	24	
12	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.98	1.97	1.97	1.97	1.97	S	1.97	1.97	1.99	1.98	24	
13	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	2.00	2.00	1.97	2.00	1.98	24	
14	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.97	S	1.98	1.99	2.00	1.97	2.00	1.99	24	
15	1.99	1.99	1.99	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.99	S	1.99	1.99	2.00	2.00	1.98	2.01	1.99	24	
16	2.00	2.00	2.00	2.01	2.00	2.01	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	S	1.98	1.99	2.00	2.02	2.01	1.98	2.02	2.00	24	
17	2.02	2.03	2.03	2.03	2.03	2.02	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.98	1.98	1.99	1.99	2.00	1.98	2.03	2.00	24		
18	2.00	2.00	2.01	2.02	2.03	2.02	2.01	2.02	2.02	2.02	2.02	2.01	2.00	1.99	1.99	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.03	2.00	24	
19	1.99	1.99	2.02	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.98	1.97	1.97	1.97	1.96	S	1.96	1.96	2.00	1.96	2.01	2.01	1.98	1.98	1.96	2.02	1.99	24	
20	1.98	1.99	2.13	2.05	2.03	2.04	2.01	1.99	1.98	1.98	1.98	1.97	1.98	1.97	S	1.98	1.98	1.98	1.99	2.02	1.98	1.98	1.98	2.00	1.97	2.13	2.00	24	
21	2.00	2.01	2.05	2.09	2.09	2.13	2.09	2.02	1.99	1.99	1.99	1.98	1.97	S	1.98	1.96	1.96	1.95	1.99	1.97	1.97	1.96	1.97	1.97	1.95	2.13	2.00	24	
22	1.96	1.97	1.97	1.96	1.96	1.97	1.96	1.96	1.96	1.95	1.95	1.94	S	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.93	1.97	1.95	24	
23	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.92	S	1.92	1.92	1.92	1.92	1.92	1.95	2.01	2.09	2.42	2.89	2.84	2.44	2.21	1.92	2.89	2.08	24	
24	2.04	2.00	2.85	2.73	2.71	3.44	3.30	2.96	2.29	2.53	S	2.02	1.94	1.94	1.95	1.95	1.96	1.97	1.99	2.02	2.00	2.16	2.23	2.28	1.94	3.44	2.32	24	
25	2.60	2.46	2.48	2.09	2.15	2.06	1.97	2.03	1.98	S	1.98	1.97	2.01	2.02	1.96	1.95	1.97	1.95	1.96	2.06	2.15	2.26	2.24	2.00	1.95	2.60	2.10	24	
26	2.11	2.18	2.03	2.43	2.59	2.07	2.16	2.05	S	2.01	2.00	2.05	2.09	2.08	2.08	1.99	1.97	1.97	2.06	2.00	1.96	1.98	1.96	1.99	1.96	2.59	2.08	24	
27	2.00	2.01	2.17	2.18	2.24	2.00	1.98	S	1.97	1.98	2.03	2.00	2.03	2.12	2.07	2.10	2.07	2.14	2.17	2.09	2.35	2.39	2.48	2.15	1.97	2.48	2.12	24	
28	2.25	2.22	2.18	2.13	2.24	2.06	S	2.01	2.01	2.01	2.00	2.02	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	2.25	2.04	24	
29	2.00	2.02	2.02	2.03	2.04	S	2.01	2.00	2.01	2.00	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.98	1.98	1.99	1.99	1.99	2.00	1.97	2.04	2.00	24	
30	2.00	2.02	2.02	2.01	S	2.02	2.01	2.02	2.01	2.01	2.00	1.99	1.98	1.97	1.97	1.97	1.96	1.97	1.97	1.98	1.99	2.00	2.02	2.01	1.96	2.02	2.00	24	
31	2.04	2.03	2.03	S	2.07	2.12	2.06	2.08	2.04	2.01	2.01	1.96	1.94	1.93	1.94	1.94	1.93	1.92	1.92	1.92	1.94	1.96	1.93	1.97	1.92	2.12	1.99	24	
HOURLY MAX	2.60	2.46	2.85	2.73	2.71	3.44	3.30	2.96	2.29	2.53	2.03	2.05	2.09	2.12	2.08	2.10	2.07	2.14	2.17	2.42	2.89	2.84	2.48	2.28					
HOURLY AVG	2.01	2.01	2.04	2.04	2.05	2.04	2.03	2.01	1.98	1.98	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.97	1.97	2.01	2.02	2.01	2.00					

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

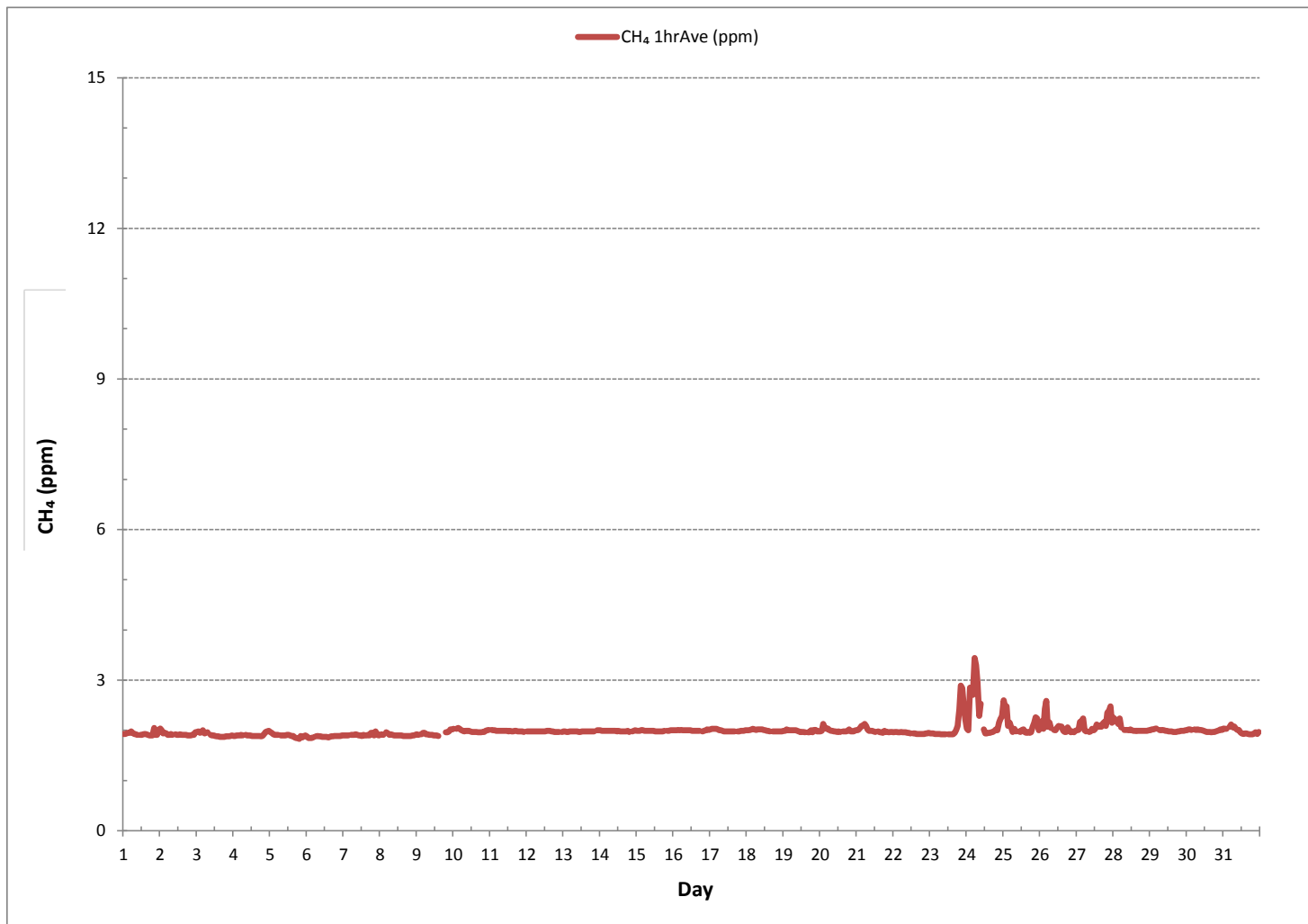
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.83	ppm @ HOUR	19	ON DAY 5
MAXIMUM 1-HR AVERAGE:	3.44	ppm @ HOUR	5	ON DAY 24
MAXIMUM 24-HR AVERAGE:	2.32	ppm		ON DAY 24
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	1.99 ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.98	1.99	2.02	2.00	2.02	2.29	2.00	1.99	1.94	1.92	S	1.98	1.96	1.98	1.99	1.99	1.98	1.91	1.91	1.91	2.91	1.95	1.94	2.42	1.91	2.91	2.04	24	
2	3.01	2.87	2.11	2.18	2.38	1.92	1.97	2.04	1.98	S	2.01	1.96	2.01	1.98	1.95	1.95	1.98	1.97	1.94	1.92	1.92	1.94	1.93	2.01	1.92	3.01	2.08	24	
3	2.00	2.02	1.99	1.98	2.65	2.00	1.98	1.97	S	1.92	1.92	1.91	1.90	1.90	1.89	1.88	1.88	1.90	1.88	1.89	1.92	1.91	1.91	2.01	1.88	2.65	1.97	24	
4	1.90	1.90	1.92	1.91	1.92	1.95	1.94	S	1.97	1.92	1.91	1.95	1.92	1.90	1.96	1.90	1.93	1.90	1.89	1.93	2.41	2.06	2.05	2.20	1.89	2.41	1.97	24	
5	2.00	2.09	1.98	1.93	1.93	1.93	S	1.91	1.91	1.90	1.91	1.92	1.92	1.91	1.92	1.90	1.89	1.86	1.87	1.87	2.13	2.00	2.03	2.06	1.86	2.13	1.95	24	
6	1.99	1.87	1.86	1.86	1.87	S	1.90	1.90	1.94	1.89	1.90	1.89	1.91	1.91	1.89	1.91	1.90	1.97	1.97	2.02	1.90	1.90	1.94	1.90	1.86	2.02	1.91	24	
7	1.91	1.91	1.91	1.91	S	1.92	1.93	1.96	1.97	1.96	1.95	1.91	1.91	2.02	1.96	1.96	2.02	1.97	2.11	2.30	1.92	2.75	1.93	1.93	1.91	2.75	2.00	24	
8	2.05	2.12	1.91	S	1.99	1.97	1.92	1.93	1.93	1.91	1.94	1.96	1.93	1.98	1.99	1.91	1.95	1.90	1.92	1.93	1.95	1.92	1.91	1.93	1.90	2.12	1.95	24	
9	1.93	1.93	S	1.94	2.00	2.00	1.93	1.93	1.93	1.95	1.94	1.93	1.94	1.92	1.95	C	C	C	C	2.02	1.99	2.03	2.11	2.05	1.92	2.11	1.97	24	
10	2.12	S	2.12	2.09	2.06	2.04	2.02	2.00	2.01	2.01	2.00	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.98	1.97	1.98	2.03	2.10	2.11	1.97	2.12	2.02	24	
11	S	2.03	2.01	2.02	2.00	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	2.00	2.00	2.00	1.99	1.99	1.98	1.98	S	1.98	2.03	2.00	24	
12	1.99	1.98	1.98	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	2.00	2.00	2.00	2.01	1.99	1.99	1.98	1.98	1.98	2.00	S	1.98	1.98	2.01	1.99	24
13	1.99	1.99	2.01	1.99	1.99	2.00	1.99	1.98	1.99	1.99	1.99	1.98	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.99	2.00	S	2.02	2.02	1.98	2.02	1.99	24	
14	2.02	2.00	2.00	2.00	2.00	2.01	2.00	2.00	2.07	2.02	2.03	2.00	2.04	2.02	2.02	2.01	2.02	2.01	2.11	1.98	S	2.00	2.01	2.02	1.98	2.11	2.02	24	
15	2.00	2.00	2.01	2.03	2.02	2.01	2.01	2.00	2.00	2.01	2.00	2.00	2.00	1.99	2.03	2.00	1.99	2.00	2.00	S	2.00	2.00	2.01	2.01	1.99	2.03	2.01	24	
16	2.01	2.01	2.01	2.02	2.02	2.02	2.01	2.02	2.01	2.01	2.01	2.01	2.00	2.01	2.00	2.08	2.00	2.00	S	2.00	2.00	2.02	2.06	2.05	2.00	2.08	2.02	24	
17	2.04	2.07	2.07	2.06	2.05	2.03	2.02	2.03	2.01	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	S	1.98	2.00	2.01	2.01	2.01	2.03	1.98	2.07	2.02	24	
18	2.02	2.02	2.03	2.05	2.04	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.01	2.01	2.00	2.00	S	2.02	1.98	1.98	2.00	1.99	2.00	2.00	1.98	2.05	2.01	24	
19	2.01	2.01	2.04	2.02	2.02	2.02	2.01	2.03	2.01	2.00	2.00	1.98	1.98	1.98	S	2.03	1.97	2.10	1.98	3.11	3.11	2.07	2.00	1.97	3.11	2.11	24		
20	2.00	2.53	3.04	2.12	2.08	2.30	2.18	2.04	2.06	2.03	2.04	2.00	2.02	2.00	S	2.00	2.01	2.03	2.06	2.41	2.07	1.99	2.01	2.06	1.99	3.04	2.13	24	
21	2.06	2.04	2.09	2.12	2.13	2.17	2.12	2.07	2.00	2.01	2.02	1.99	1.99	S	2.16	2.08	2.03	2.02	2.20	2.02	2.00	2.00	1.99	1.99	1.99	2.20	2.06	24	
22	1.97	2.01	1.98	2.00	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	S	1.95	1.95	1.94	1.95	1.95	1.94	1.95	1.96	1.96	1.96	1.96	1.94	2.01	1.96	24	
23	1.96	1.96	1.96	1.94	1.94	P	1.95	1.93	1.94	1.93	1.94	S	1.97	1.93	1.94	1.94	2.55	3.22	2.79	5.14	6.39	6.62	7.32	4.05	1.93	7.32	2.97	23	
24	3.34	2.73	8.05	4.71	6.40	10.03	6.38	6.59	4.50	5.04	S	2.64	1.95	1.96	2.03	2.01	2.07	2.04	2.39	P	2.08	3.02	3.13	3.44	1.95	10.03	3.93	23	
25	4.73	4.23	3.24	2.69	2.56	2.38	2.11	2.65	2.28	S	2.05	2.18	2.90	2.95	1.98	2.06	2.21	1.97	2.05	2.93	5.87	5.87	3.09	2.79	1.97	5.87	2.95	24	
26	4.50	11.42	2.44	6.19	5.35	2.91	2.62	2.53	S	2.39	2.15	3.22	3.50	3.69	3.82	2.27	2.18	2.21	5.67	2.54	1.98	2.10	2.01	2.04	1.98	11.42	3.47	24	
27	2.07	2.10	3.44	4.31	4.73	2.17	2.02	S	1.99	2.05	3.41	2.33	2.43	3.99	2.75	3.03	2.74	2.92	3.57	3.03	4.91	3.95	8.49	3.40	1.99	8.49	3.30	24	
28	3.52	8.99	5.75	2.83	3.51	2.32	S	2.03	2.02	2.03	2.13	2.29	2.29	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.01	P	2.01	2.00	8.99	2.72	23	
29	2.01	2.04	2.03	2.05	2.05	S	2.03	2.02	2.02	2.01	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.98	1.99	2.00	2.00	2.01	2.00	2.02	1.98	2.05	2.01	24	
30	2.01	2.03	2.04	2.03	S	2.03	2.04	2.03	2.02	2.02	2.02	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.99	2.00	2.02	2.02	2.04	2.07	1.98	2.07	2.01	24	
31	2.24	2.07	2.07	S	2.41	2.42	2.10	2.21	2.20	2.05	2.11	P	2.00	2.02	1.98	2.01	1.96	1.94	1.93	1.93	2.02	2.04	1.98	2.01	1.93	2.42	2.08	23	
HOURLY MAX	4.73	11.42	8.05	6.19	6.40	10.03	6.38	6.59	4.50	5.04	3.41	3.22	3.50	3.99	3.82	3.03	2.74	3.22	5.67	5.14	6.39	6.62	8.49	4.05					
HOURLY AVG	2.31	2.70	2.47	2.38	2.49	2.39	2.18	2.20	2.09	2.10	2.05	2.07	2.08	2.13	2.07	2.03	2.04	2.06	2.21	2.19	2.45	2.44	2.48	2.22					

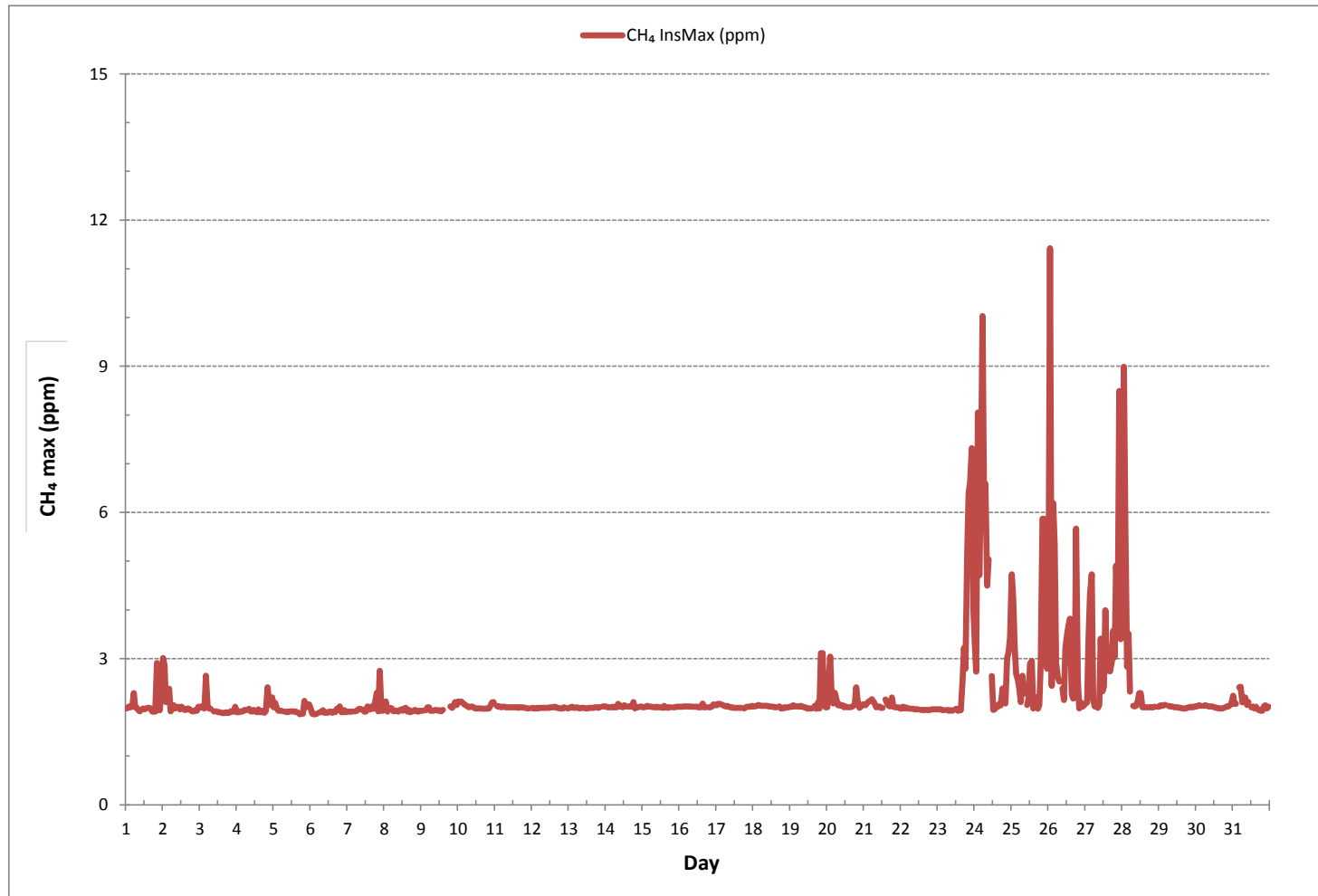
STATUS FLAG CODES

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:	704
MAXIMUM INSTANTANEOUS VALUE:	11.42 ppm @ HOUR 1 ON DAY 26
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.92
OPERATIONAL TIME:	740 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)



Wind: PRAMP_986
Poll.: PRAMP_986-CH4[ppm]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

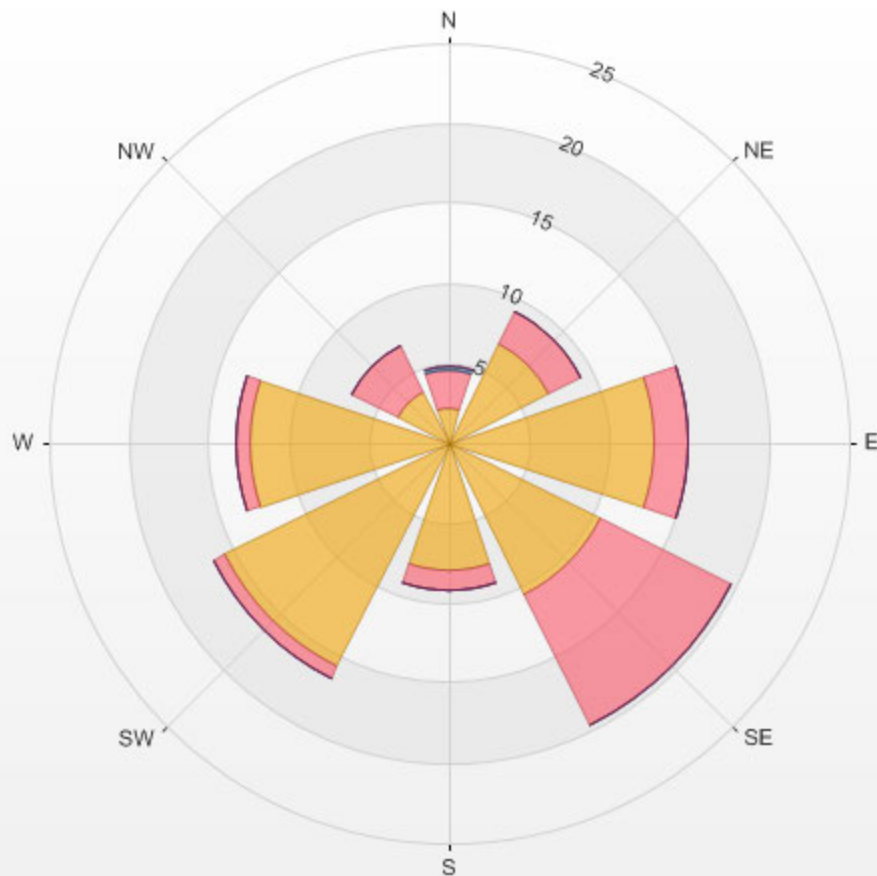
Calm: 5.26%

Calm Avg: 2.02 [ppm]

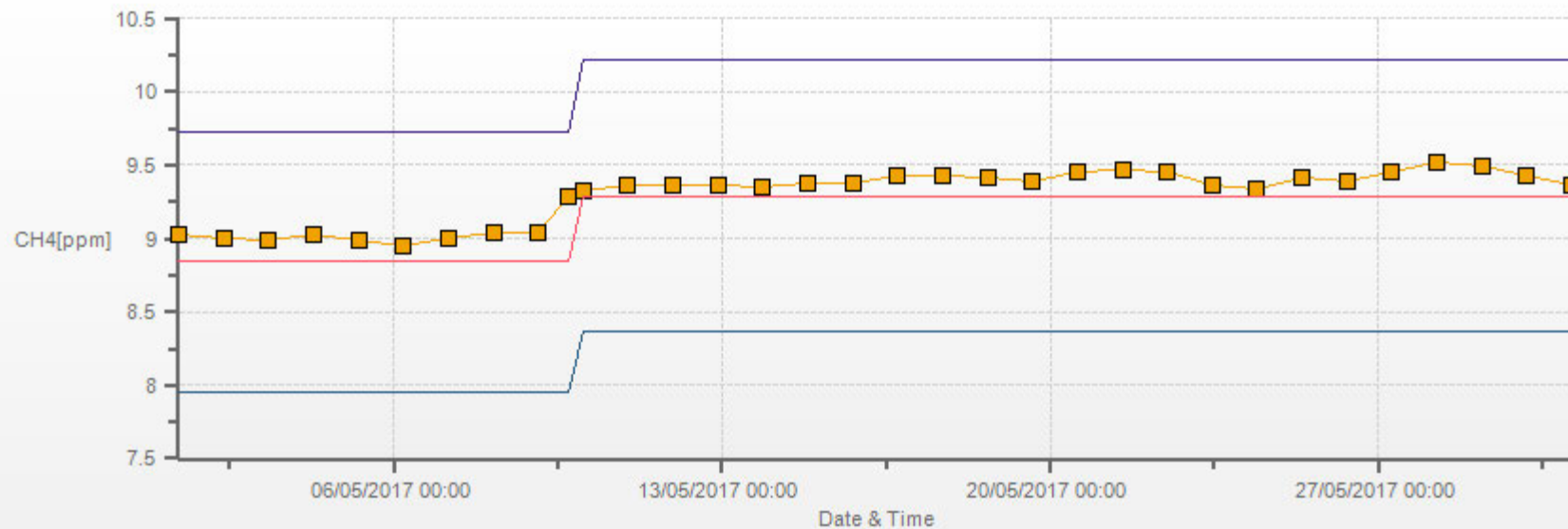
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	2.1	2.4	0.3	0.0	0.0	4.8
NE	7.0	2.3	0.0	0.0	0.0	9.2
E	12.9	2.1	0.0	0.0	0.0	15.1
SE	10.7	9.1	0.0	0.0	0.0	19.7
S	8.0	1.3	0.0	0.0	0.0	9.2
SW	15.6	0.9	0.0	0.0	0.0	16.5
W	12.5	0.9	0.0	0.0	0.0	13.4
NW	3.6	3.3	0.0	0.0	0.0	6.8
Summary	72.3	22.2	0.3	0.0	0.0	94.7

% Icon	Classes (ppm)	72	0-2	22	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 5.26% Calm Poll Avg: 2.02[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 17/05 Type: Span



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

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 2017

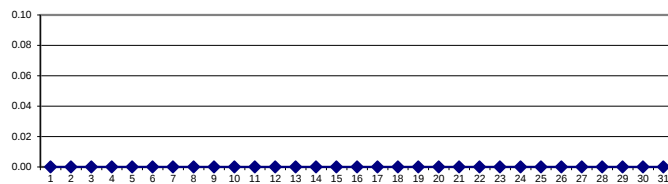
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
7	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
10	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
11	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.01	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
28	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
30	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

STATUS FLAG CODES

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

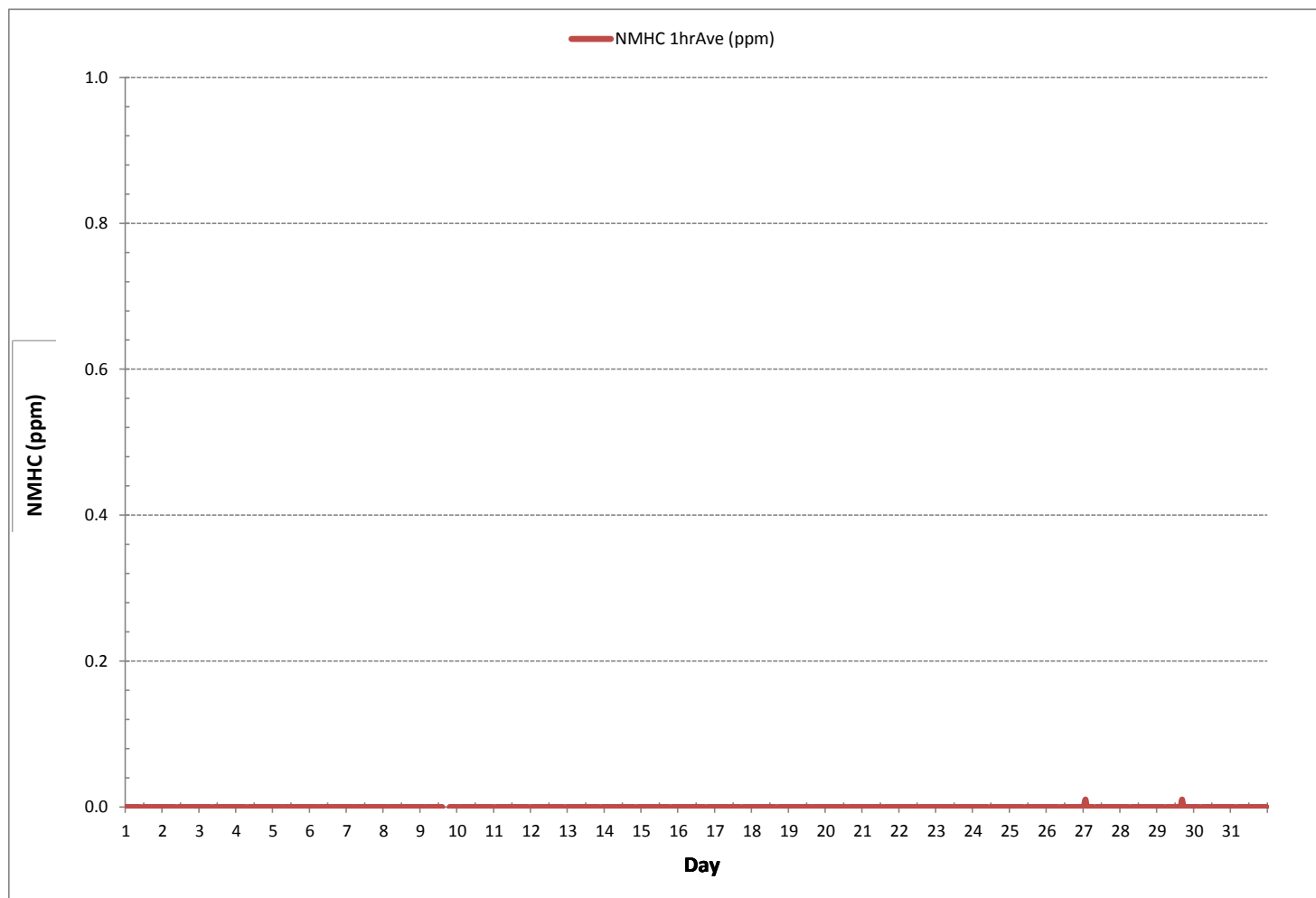
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	2				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.01	ppm	@ HOUR	1	ON DAY 27
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY 1
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
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 - May 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	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
2	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	0.00	0.00	0.00	0.01	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.00	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
6	0.14	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	0.14	0.01	24
7	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00	24	
9	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
10	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
11	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.03	0.00	24	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
14	0.04	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	S	0.00	0.00	0.00	0.00	0.04	0.00	24	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.01	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	P	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	23
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	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	0.24	0.01	0.00	24
27	0.00	0.38	0.00	0.00	0.01	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	0.02	0.00	0.38	0.02	0.00	24
28	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	0.00	0.00	0.00	0.00	0.00	0.00	23
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	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.01	0.00	24
30	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	S	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	23
HOURLY MAX	0.24	0.38	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.01	0.32	0.00	0.00	0.00	0.00	0.01	0.00	0.06					
HOURLY AVG	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

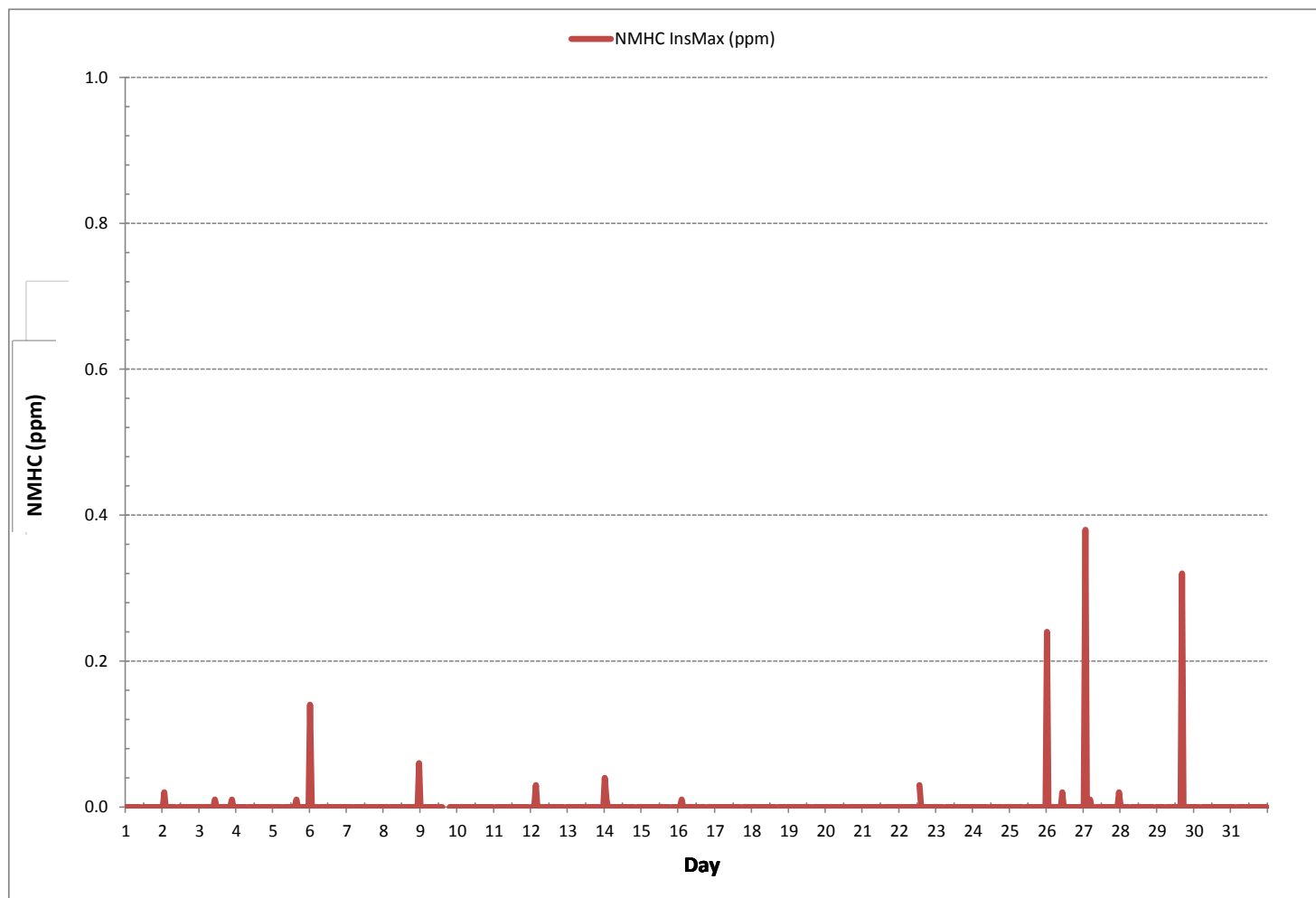
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	17
MAXIMUM INSTANTANEOUS VALUE:	0.38 ppm @ HOUR 1 ON DAY 27
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.02
OPERATIONAL TIME:	740 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



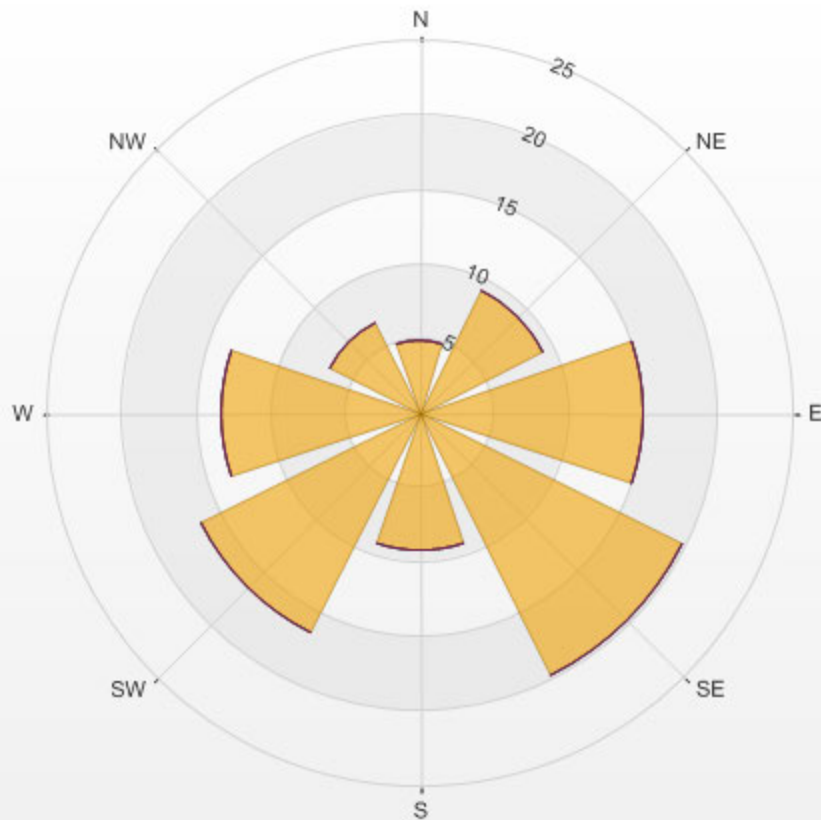
Wind: PRAMP_986
Poll.: PRAMP_986-NMHC[ppm]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.26%

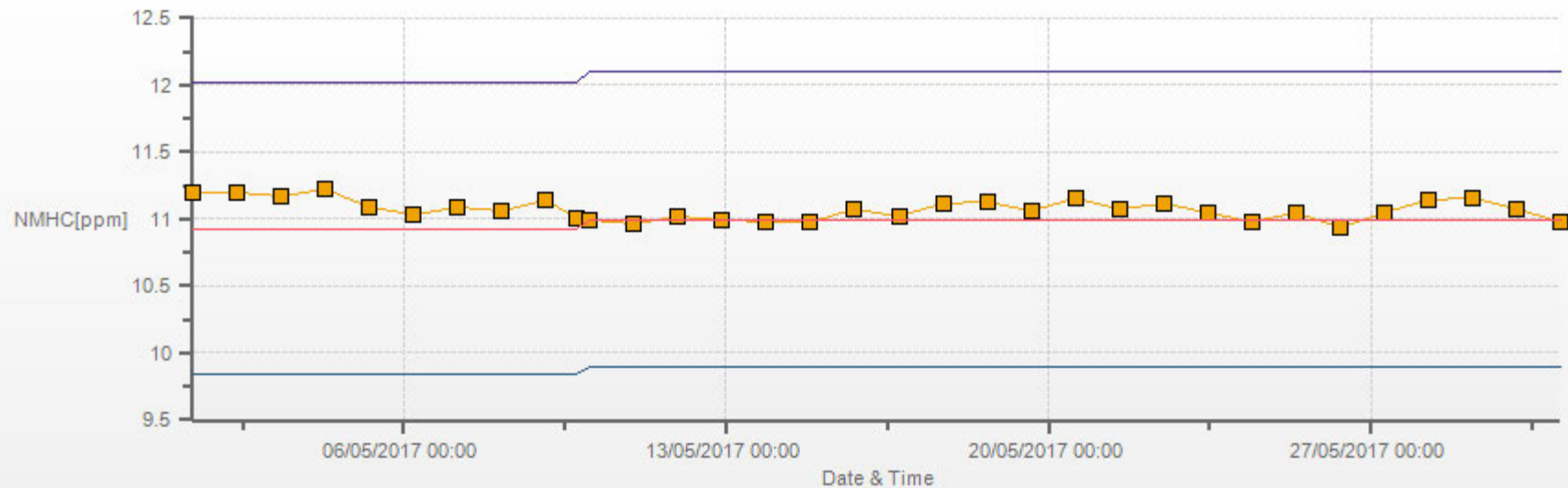
Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	4.8	0.0	0.0	0.0	0.0	4.8
NE	9.2	0.0	0.0	0.0	0.0	9.2
E	15.1	0.0	0.0	0.0	0.0	15.1
SE	19.7	0.0	0.0	0.0	0.0	19.7
S	9.2	0.0	0.0	0.0	0.0	9.2
SW	16.5	0.0	0.0	0.0	0.0	16.5
W	13.4	0.0	0.0	0.0	0.0	13.4
NW	6.8	0.0	0.0	0.0	0.0	6.8
Summary	94.7	0.0	0.0	0.0	0.0	94.7

PRAMP_986 Poll.: PRAMP_986-NMHC[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 5.26% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

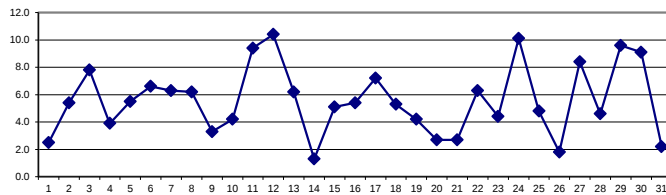
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.1	1.1	1.4	1.0	1.5	1.8	1.4	3.1	2.5	2.5	5.2	6.5	5.5	9.8	11.3	8.7	3.0	4.9	10.7	3.7	1.6	2.7	5.1	5.1	0.1	11.3	2.5	24
2	4.0	3.9	3.0	1.9	1.9	2.9	4.1	9.1	7.7	10.9	10.0	12.0	7.9	13.4	12.1	10.1	8.6	9.7	8.5	5.9	3.1	3.5	4.0	5.5	1.9	13.4	5.4	24
3	6.7	8.5	7.4	6.7	2.0	4.5	6.7	7.6	6.7	9.8	9.5	12.3	13.7	14.9	16.0	18.4	16.2	15.8	14.8	13.0	11.5	11.1	9.7	6.2	2.0	18.4	7.8	24
4	4.5	5.2	5.1	4.1	3.0	1.9	4.3	6.7	7.1	3.9	5.1	6.5	9.0	10.1	9.3	7.7	9.0	9.2	7.4	5.6	1.8	3.0	3.3	2.3	1.8	10.1	3.9	24
5	2.6	3.7	5.4	5.2	5.2	4.9	6.9	8.3	12.2	10.7	8.7	8.0	7.9	11.0	13.2	11.4	11.4	13.4	12.1	5.3	2.0	7.0	12.5	3.9	2.0	13.4	5.5	24
6	2.2	3.2	3.5	4.8	4.8	2.5	4.0	5.7	5.4	6.4	9.1	9.0	11.8	12.5	13.1	11.3	11.2	10.0	7.7	10.5	4.5	6.0	8.8	7.0	2.2	13.1	6.6	24
7	6.8	7.5	5.7	4.6	5.9	6.2	8.5	9.9	11.2	14.5	13.6	12.5	10.3	10.6	9.5	10.9	4.9	2.2	9.6	2.2	2.1	1.2	3.5	7.6	1.2	14.5	6.3	24
8	6.9	3.9	3.0	4.6	7.1	5.6	5.1	6.7	8.7	9.0	9.7	8.4	11.6	11.3	9.1	9.4	7.5	9.1	8.6	7.2	3.6	3.5	3.6	3.6	3.0	11.6	6.2	24
9	3.9	3.5	3.2	4.4	4.8	4.3	6.0	6.2	4.9	4.1	4.8	6.0	3.8	2.7	5.1	4.6	7.8	7.5	4.7	4.5	0.8	1.8	2.3	2.4	0.8	7.8	3.3	24
10	2.4	2.5	3.7	1.8	1.9	4.0	5.8	5.1	2.5	4.8	7.4	8.8	7.0	8.0	9.6	6.5	6.3	8.9	3.0	8.3	5.5	1.9	2.6	1.7	1.7	9.6	4.2	24
11	3.2	4.0	4.0	5.5	5.9	5.2	5.7	8.9	8.1	9.9	10.9	10.4	12.6	10.1	13.4	10.1	14.9	13.5	11.5	12.5	12.2	13.1	13.3	10.6	3.2	14.9	9.4	24
12	9.6	9.3	10.1	10.1	11.1	10.6	11.1	11.3	10.5	12.1	10.9	12.0	12.4	10.4	10.2	11.4	11.1	10.9	12.0	11.4	10.3	7.8	9.0	8.0	7.8	12.4	10.4	24
13	7.0	5.8	6.6	5.6	5.8	6.4	7.4	8.9	8.8	9.4	10.4	6.8	5.9	7.5	7.6	7.1	6.8	5.8	5.5	5.1	4.0	3.8	6.8	7.2	3.8	10.4	6.2	24
14	6.5	7.9	6.0	5.8	4.5	3.3	3.3	3.9	5.1	5.8	5.1	4.6	3.0	1.1	4.5	3.3	2.6	5.6	4.8	3.7	5.4	4.0	2.8	3.2	1.1	7.9	1.3	24
15	5.8	5.6	3.2	3.9	3.3	4.9	5.1	5.2	5.6	5.3	5.2	4.6	1.8	4.7	4.3	4.6	5.1	8.9	7.7	9.0	6.0	8.1	7.0	6.7	1.8	9.0	5.1	24
16	4.4	5.3	6.0	3.8	4.5	4.1	5.6	6.0	7.5	7.0	8.2	8.1	9.2	6.9	5.4	7.2	12.9	9.3	5.9	3.7	2.3	1.5	1.0	1.1	1.0	12.9	5.4	24
17	1.8	1.9	1.7	2.0	2.0	3.4	4.6	9.2	10.8	13.6	12.0	14.4	12.1	10.9	8.1	8.3	8.1	7.4	8.5	7.3	5.5	5.8	7.1	7.5	1.7	14.4	7.2	24
18	7.7	6.5	3.9	1.2	1.9	3.0	5.1	4.9	4.9	9.0	9.9	9.0	8.4	11.3	12.1	18.8	9.0	5.0	5.6	4.7	4.2	9.4	5.6	3.4	1.2	18.8	5.3	24
19	4.8	5.2	4.8	7.3	5.4	3.9	5.2	6.7	6.0	8.1	8.0	8.2	10.2	11.2	10.3	9.2	9.5	6.5	3.1	3.6	1.3	3.6	2.9	3.7	1.3	11.2	4.2	24
20	2.2	2.1	1.3	1.0	0.9	1.4	3.4	3.4	2.9	4.0	4.6	5.3	7.1	7.1	7.9	7.7	6.0	5.4	4.5	4.3	3.6	3.0	1.5	0.7	0.7	7.9	2.7	24
21	2.3	2.6	3.9	3.7	3.5	5.4	4.3	5.6	5.4	4.6	5.7	5.6	5.2	5.2	6.7	6.9	7.4	8.7	8.0	2.0	2.6	2.6	3.7	2.8	2.0	8.7	2.7	24
22	3.3	4.7	4.8	3.4	3.9	5.7	7.3	5.7	7.8	9.5	9.9	11.2	10.7	9.9	13.2	13.6	9.7	9.6	6.3	3.9	7.4	4.4	3.1	5.1	3.1	13.6	6.3	24
23	4.8	4.1	4.8	7.3	5.8	6.5	7.6	9.4	10.9	10.4	10.1	8.8	8.7	7.9	7.5	6.1	4.8	1.4	4.4	4.0	4.5	4.3	3.8	1.7	1.4	10.9	4.4	24
24	5.8	4.0	4.3	5.2	5.8	6.0	6.9	10.2	11.8	10.8	12.2	17.0	18.3	18.4	17.4	16.1	13.1	14.2	14.3	13.8	10.9	7.2	6.4	6.6	4.0	18.4	10.1	24
25	6.5	7.0	5.1	2.1	2.0	2.7	7.3	6.1	6.3	8.8	9.1	7.6	9.6	8.8	14.7	8.4	7.6	6.4	5.8	3.4	1.9	3.6	3.9	3.6	1.9	14.7	4.8	24
26	2.0	3.0	2.1	3.1	2.2	2.4	0.2	2.9	5.7	7.7	8.7	10.6	11.2	7.6	6.4	6.8	4.4	4.6	5.6	7.2	5.6	2.7	2.6	0.4	0.2	11.2	1.8	24
27	0.9	1.8	1.1	2.2	6.2	5.1	7.0	10.7	10.2	13.3	16.7	16.4	13.8	18.3	18.7	15.2	12.6	10.1	7.8	4.4	3.9	2.5	1.2	0.9	0.9	18.7	8.4	24
28	1.6	2.5	2.9	3.9	4.4	4.5	6.4	10.1	10.0	6.2	4.5	3.4	4.7	3.1	3.7	4.4	5.2	5.3	6.4	6.3	4.8	4.4	4.8	3.8	1.6	10.1	4.6	24
29	5.0	4.3	4.4	6.6	4.4	5.9	8.3	9.4	9.6	11.7	12.8	11.2	12.7	11.5	13.1	15.5	16.0	11.9	10.9	9.0	7.5	8.2	10.3	11.9	4.3	16.0	9.6	24
30	11.8	7.1	4.8	3.2	3.4	4.5	6.8	10.5	12.6	10.6	10.9	14.4	13.7	13.9	11.9	10.8	14.4	12.6	10.9	12.4	9.5	4.6	4.3	6.2	3.2	14.4	9.1	24
31	2.9	5.8	4.7	5.5	0.8	1.9	4.4	2.7	2.8	2.0	7.3	10.4	6.7	9.7	9.3	7.9	5.6	5.7	6.2	4.7	1.2	2.8	3.7	4.1	0.8	10.4	2.2	24
HOURLY MAX	11.8	9.3	10.1	10.1	11.1	10.6	11.1	11.3	12.6	14.5	16.7	17.0	18.3	18.4	18.7	18.8	16.2	15.8	14.8	13.8	12.2	13.1	13.3	11.9				
HOURLY AVG	2.3	2.4	2.2	2.4	1.6	1.9	1.7	1.1	1.0	0.9	1.3	1.7	1.9	2.3	2.7	2.4	1.9	1.7	1.1	1.1	1.8	1.7	1.7	1.9				

STATUS FLAG CODES

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

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

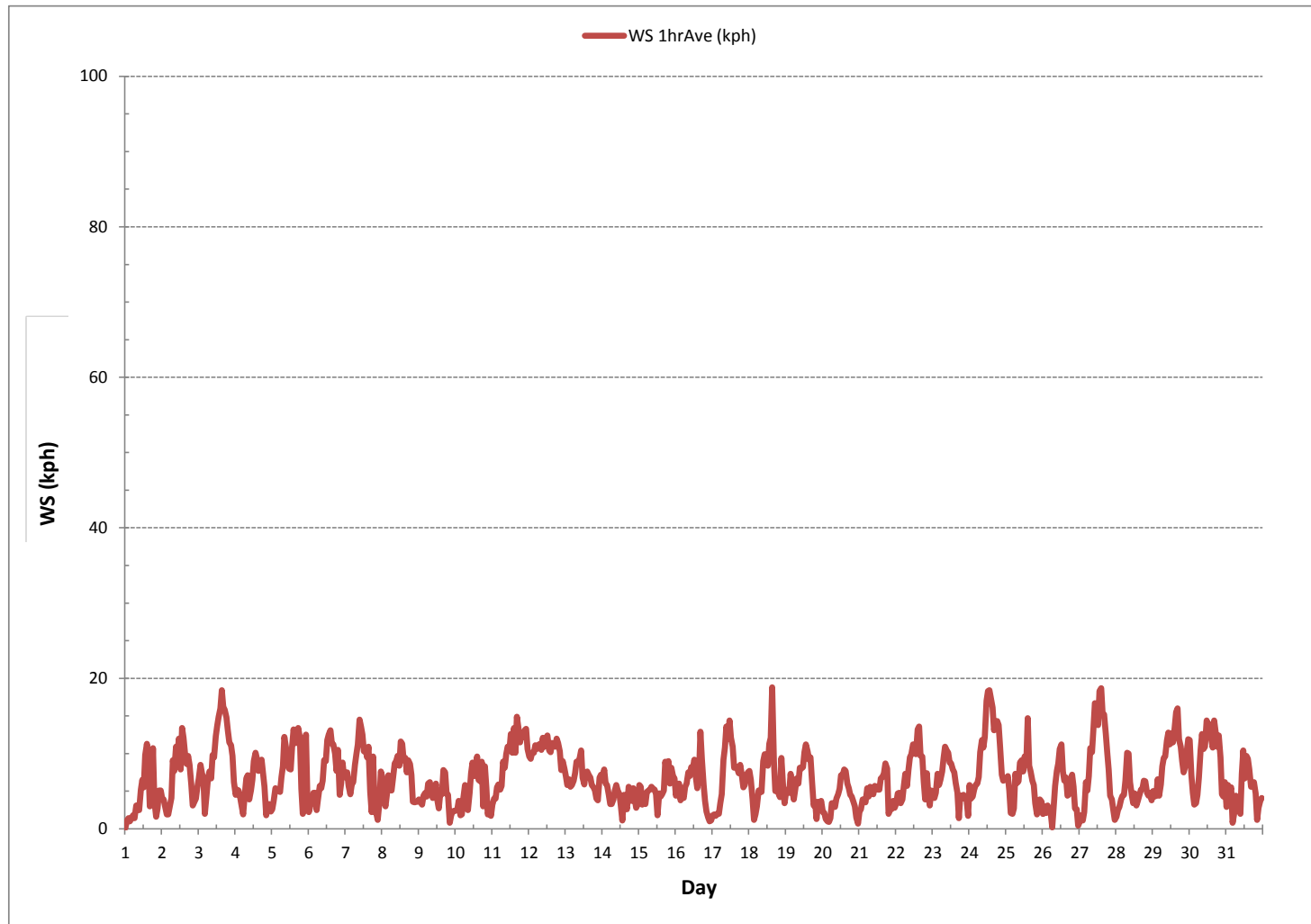
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744
MINIMUM 1-HR AVERAGE:	0.1 kph @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	18.8 kph @ HOUR 15 ON DAY 18
MAXIMUM 24-HR AVERAGE:	10.4 kph ON DAY 12
MONTHLY CALIBRATION TIME:	0 hrs
OPERATIONAL TIME:	744 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.7
MONTHLY AVERAGE:	1.0 kph

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 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	4.7	3.4	3.9	3.4	3.6	5.1	3.3	8.9	9.7	9.7	18.2	19.0	17.3	29.9	28.5	21.3	27.0	20.8	26.9	12.6	5.5	5.9	33.4	13.0	3.3	33.4	14.0	24
2	8.7	9.9	10.0	7.6	6.5	8.3	12.2	20.3	20.5	23.8	28.0	34.1	24.5	29.5	26.0	29.6	29.5	26.7	28.4	21.6	10.7	6.3	6.8	7.7	6.3	34.1	18.2	24
3	10.1	13.9	15.3	11.4	11.0	9.2	11.5	17.1	15.6	18.6	30.6	37.0	36.7	42.5	43.3	47.5	45.4	50.0	41.5	40.3	30.2	32.5	28.1	17.6	9.2	50.0	27.4	24
4	14.9	14.2	17.4	10.4	10.6	7.3	13.4	18.4	17.5	15.6	19.3	24.3	31.2	32.7	24.9	23.2	30.5	25.5	18.0	12.8	9.8	6.8	8.2	6.1	6.1	32.7	17.2	24
5	7.0	8.9	13.8	15.2	16.4	13.1	18.4	23.4	29.7	26.8	26.6	21.7	21.4	28.1	31.3	28.7	31.9	30.7	27.4	17.7	5.7	55.8	39.7	15.8	5.7	55.8	23.1	24
6	14.3	13.8	9.5	11.9	15.9	9.8	11.2	20.5	16.5	16.5	22.5	27.5	35.5	33.8	34.2	37.2	31.4	31.2	34.2	31.5	20.0	18.5	22.7	21.1	9.5	37.2	22.6	24
7	20.1	25.8	19.7	15.1	15.5	19.5	24.9	30.0	30.2	31.8	32.2	38.0	30.6	36.5	35.5	33.8	14.1	22.0	28.6	7.7	5.1	5.8	18.3	19.9	5.1	38.0	23.4	24
8	18.1	12.2	7.9	10.2	10.9	11.8	14.9	19.0	24.1	25.7	28.5	28.0	32.9	30.6	23.5	33.5	30.3	26.9	26.5	26.1	14.8	15.6	6.7	7.7	6.7	33.5	20.3	24
9	13.3	8.7	7.5	7.4	7.2	9.4	13.1	14.3	13.2	16.5	18.8	21.3	19.0	18.2	24.6	21.7	22.8	30.9	21.2	12.0	5.0	3.9	4.9	5.7	3.9	30.9	14.2	24
10	10.8	6.4	9.9	9.2	9.4	12.7	19.8	14.2	12.4	18.1	25.7	29.8	30.7	22.9	31.8	20.9	25.4	23.9	17.2	20.6	14.9	8.0	8.5	6.3	6.3	31.8	17.1	24
11	13.6	16.2	16.0	20.0	19.0	16.5	17.6	27.5	32.6	25.6	25.7	34.6	33.6	33.0	35.0	30.7	45.3	41.1	33.9	40.2	42.2	32.7	41.7	36.2	13.6	45.3	29.6	24
12	37.4	34.1	35.2	34.0	34.1	31.7	32.6	40.2	31.0	31.8	36.7	35.8	41.6	35.9	32.8	35.8	33.6	40.2	43.7	40.4	33.1	27.8	27.2	28.1	27.2	43.7	34.8	24
13	23.7	16.6	20.3	19.2	21.1	25.4	22.3	25.5	24.0	25.0	27.6	22.0	21.5	26.5	26.4	22.8	23.2	18.6	16.2	13.9	12.3	11.1	12.2	16.0	11.1	27.6	20.6	24
14	10.9	15.8	13.4	16.4	10.6	8.3	11.0	11.7	17.1	18.2	15.3	15.4	9.1	9.9	21.5	13.1	12.4	15.7	14.2	10.2	15.6	10.7	10.7	15.0	8.3	21.5	13.4	24
15	17.8	17.0	9.6	10.2	9.9	17.2	17.4	14.6	15.0	14.9	16.4	17.4	17.8	17.4	29.6	15.2	21.9	24.5	24.0	25.1	16.8	18.1	14.8	15.1	9.6	29.6	17.4	24
16	11.7	14.0	13.4	12.2	11.2	12.4	15.7	17.2	23.0	21.6	30.9	27.9	24.3	22.0	23.7	30.7	34.1	30.0	16.5	10.3	9.6	5.8	4.4	4.2	4.2	34.1	17.8	24
17	3.6	6.0	6.7	6.1	6.8	10.7	14.2	20.5	26.2	32.2	30.0	33.2	31.1	26.2	45.7	23.7	22.3	21.9	20.4	18.0	14.5	13.4	16.0	15.7	3.6	45.7	19.4	24
18	16.6	15.1	10.5	9.4	8.5	10.3	12.1	11.3	13.3	16.8	25.4	27.0	27.2	33.2	36.6	35.2	25.8	21.1	15.8	12.5	10.6	14.0	12.3	12.5	8.5	36.6	18.0	24
19	8.4	9.5	9.4	10.8	10.8	8.5	14.8	18.0	17.3	24.6	26.5	28.5	33.8	32.1	31.9	31.5	29.4	21.6	15.9	13.2	11.8	35.4	12.2	9.7	8.4	35.4	19.4	24
20	6.3	10.6	6.2	4.7	3.3	5.3	9.0	9.2	10.0	15.4	12.9	18.8	26.8	22.4	38.0	30.6	21.9	19.6	21.1	19.0	14.5	11.3	12.0	4.0	3.3	38.0	14.7	24
21	6.7	7.0	9.8	6.7	6.9	8.9	7.4	11.9	16.2	14.3	17.0	21.2	22.6	28.4	26.9	25.0	27.0	25.7	20.3	5.4	4.6	4.7	6.7	15.3	4.6	28.4	14.4	24
22	17.1	9.9	10.5	7.9	13.8	14.2	16.6	20.2	24.6	28.7	37.0	37.2	35.9	31.2	35.3	40.8	34.6	37.4	22.4	14.3	15.5	11.1	10.3	19.0	7.9	40.8	22.7	24
23	21.1	11.8	16.4	22.6	18.3	P	28.5	34.3	30.7	27.7	29.4	30.5	29.4	28.4	27.8	27.4	18.0	14.8	15.4	15.8	13.2	11.0	11.1	13.4	11.0	34.3	21.6	23
24	21.0	19.8	9.6	12.0	14.1	13.2	15.8	29.3	30.8	30.8	37.4	47.1	49.8	54.0	50.2	40.9	36.7	40.4	41.2	P	27.1	18.2	14.6	16.2	9.6	54.0	29.1	23
25	11.9	11.8	9.1	7.5	7.2	7.3	14.5	14.4	13.6	18.3	27.6	29.5	30.9	23.2	48.3	26.1	23.3	20.2	20.8	11.7	6.7	7.7	9.4	6.1	6.1	48.3	17.0	24
26	4.5	5.9	4.3	4.7	4.4	5.0	4.5	8.1	13.6	20.7	23.1	27.0	30.0	27.9	28.2	22.3	24.4	45.5	18.8	24.7	13.7	5.8	10.7	3.9	3.9	45.5	15.9	24
27	4.0	8.2	7.4	10.3	16.5	11.5	18.1	33.5	28.7	36.4	41.6	41.8	40.4	43.6	42.7	37.7	35.9	32.6	29.2	24.7	17.7	13.4	12.9	4.7	4.0	43.6	24.7	24
28	5.6	7.6	6.5	8.4	8.7	9.0	20.0	22.8	22.3	16.8	18.3	16.1	18.8	20.5	22.0	20.4	21.9	17.8	23.7	20.8	16.2	13.0	P	15.9	5.6	23.7	16.2	23
29	16.1	14.7	11.4	17.8	10.9	15.2	20.6	20.0	21.7	24.6	25.4	28.2	30.8	31.6	33.9	35.5	31.8	30.7	27.7	26.3	20.1	18.5	22.9	22.7	10.9	35.5	23.3	24
30	20.8	15.6	11.4	10.4	10.8	12.2	15.0	19.5	23.9	22.3	27.3	29.5	30.3	31.1	26.0	29.4	30.6	21.8	22.5	24.4	21.6	12.9	13.0	16.2	10.4	31.1	20.8	24
31	11.1	11.8	14.2	19.0	12.9	6.3	12.6	15.1	13.8	15.0	18.9	P	19.2	33.4	30.5	27.7	18.1	21.4	19.6	16.8	8.8	5.6	6.3	7.3	5.6	33.4	15.9	23
HOURLY MAX	37.4	34.1	35.2	34.0	34.1	31.7	32.6	40.2	32.6	36.4	41.6	47.1	49.8	54.0	50.2	47.5	45.4	50.0	43.7	40.4	42.2	55.8	41.7	36.2				
HOURLY AVG	13.3	12.8	11.8	12.0	11.8	11.8	15.6	19.7	20.6	22.1	25.8	28.3	28.5	29.6	32.1	29.0	27.8	27.5	24.3	19.7	15.1	14.9	15.3	13.5				

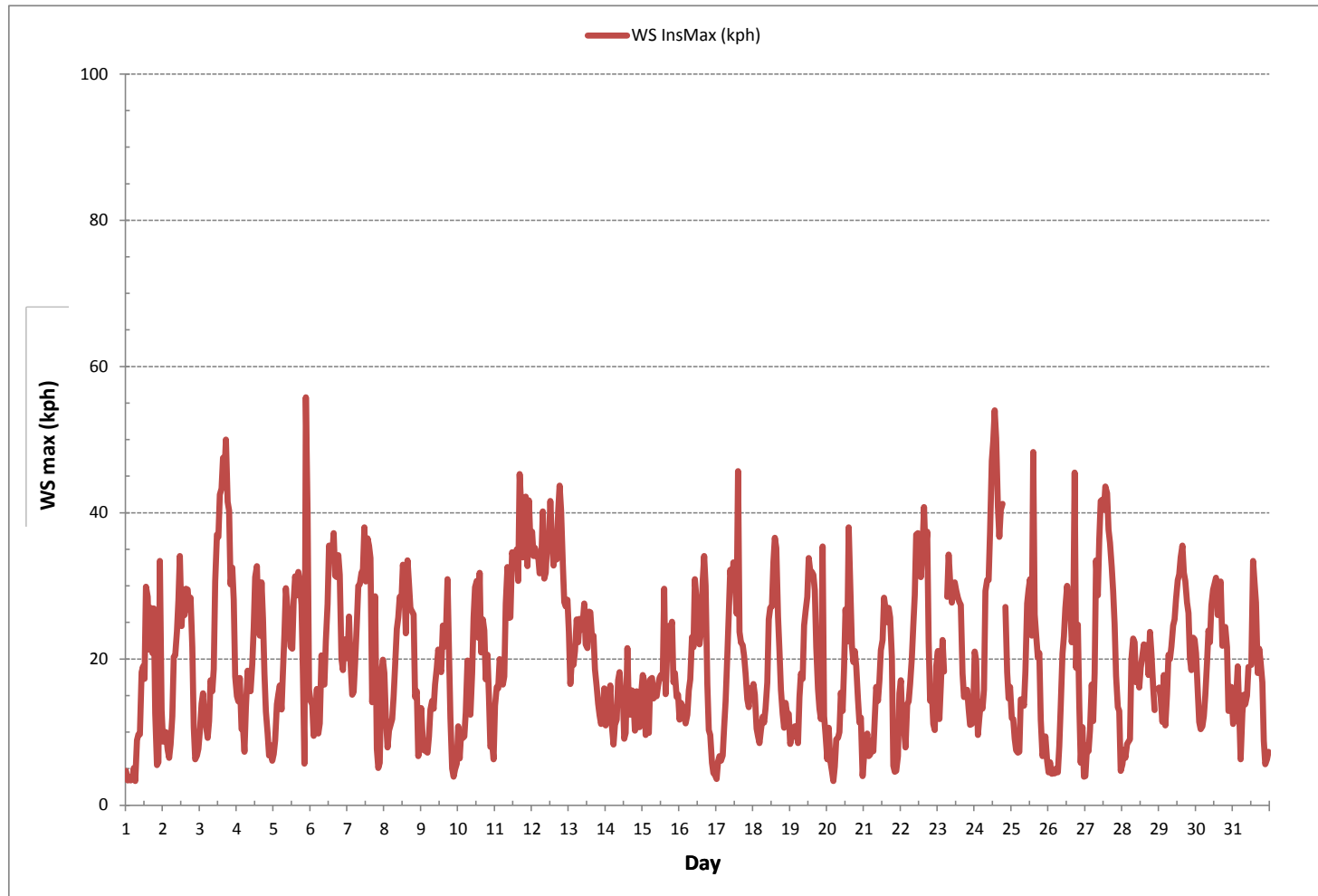
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	55.8	kph	@ HOUR	21	ON DAY	5
OPERATIONAL TIME:						740 hrs

WIND SPEED Instantaneous Maximum (WS kph)



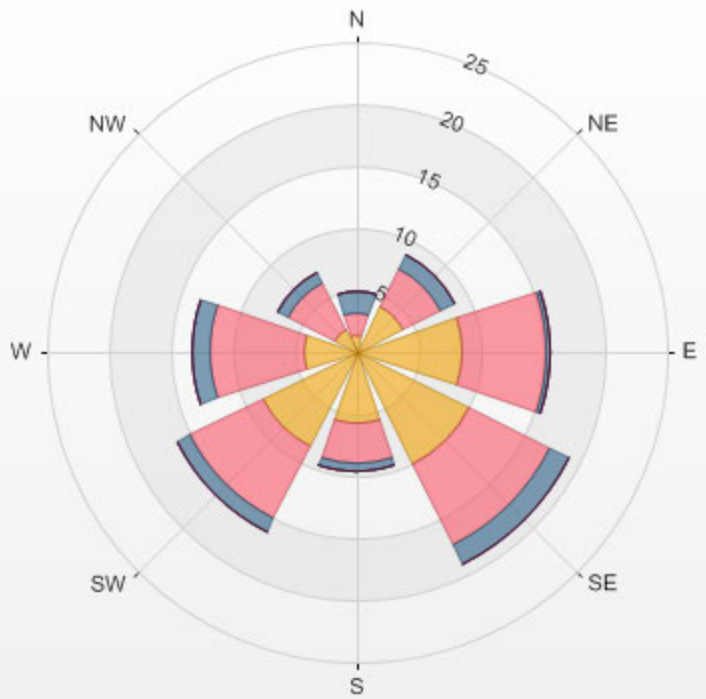
Wind: PRAMP_986
 Monitor: WSP [kph]
 Monthly: 2017/05
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 4.97%

Calm Avg: 0.00 [kph]

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	1.3	1.8	1.9	0.0	0.0	0.0	5.0
NE	4.2	3.4	1.3	0.0	0.0	0.0	8.9
E	8.6	6.7	0.3	0.0	0.0	0.0	15.6
SE	10.2	7.1	1.9	0.0	0.0	0.0	19.2
S	5.8	3.2	0.7	0.0	0.0	0.0	9.7
SW	8.5	6.6	1.2	0.0	0.0	0.0	16.3
W	4.3	7.5	1.5	0.0	0.0	0.0	13.3
NW	2.0	4.2	0.9	0.0	0.0	0.0	7.1
Summary	44.9	40.5	9.7	0.0	0.0	0.0	95.0

PRAMP_986 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 4.97% Calm Wind Avg Speed: 1.22(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

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

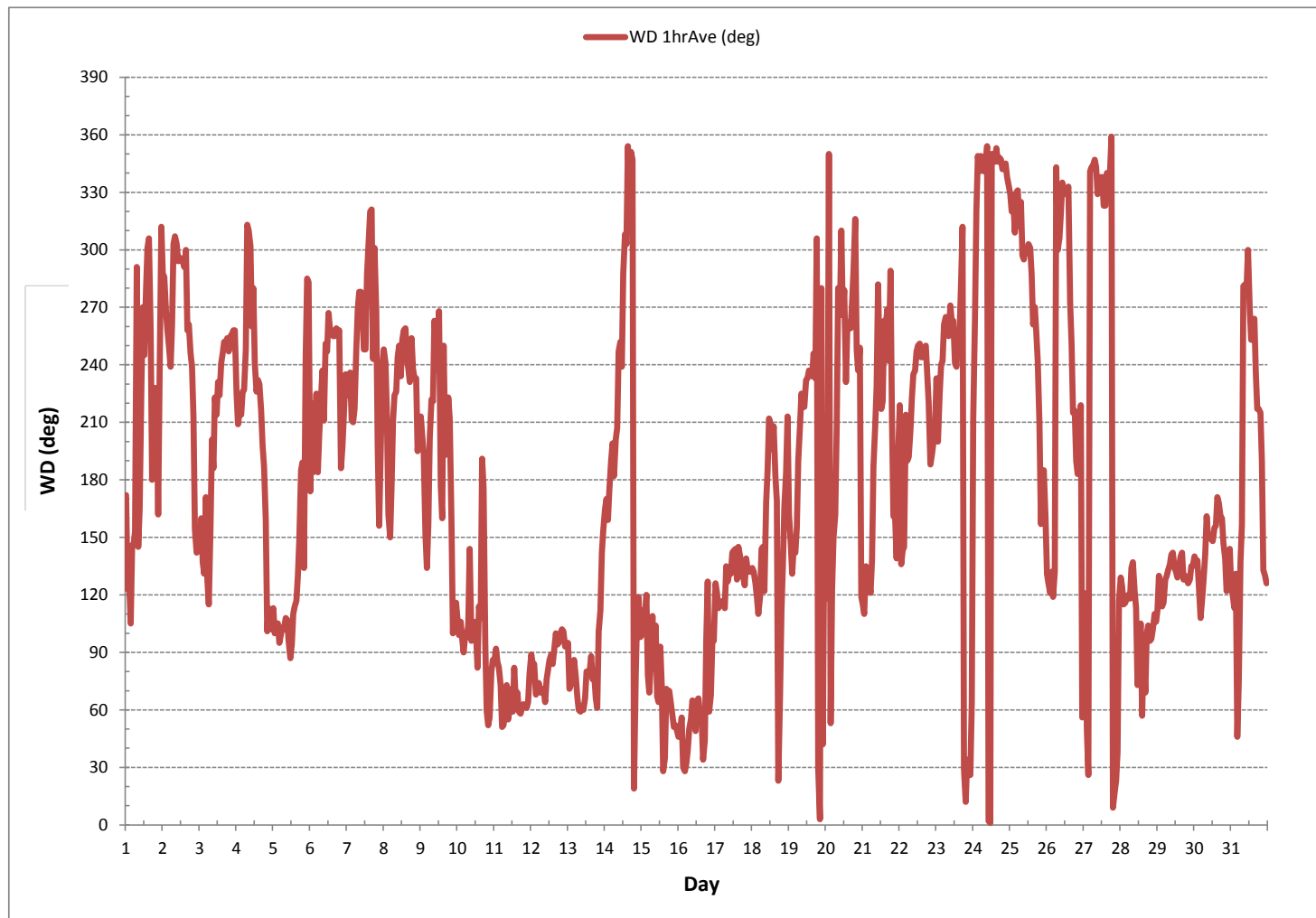
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	87		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	176 (S)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

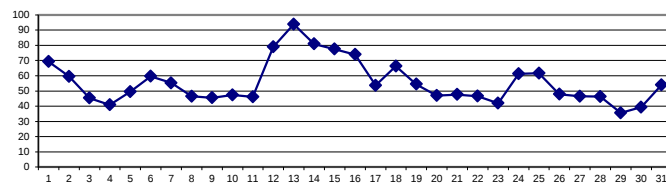
RELATIVE HUMIDITY Hourly Averages (RH %)

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

STATUS FLAG CODES

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

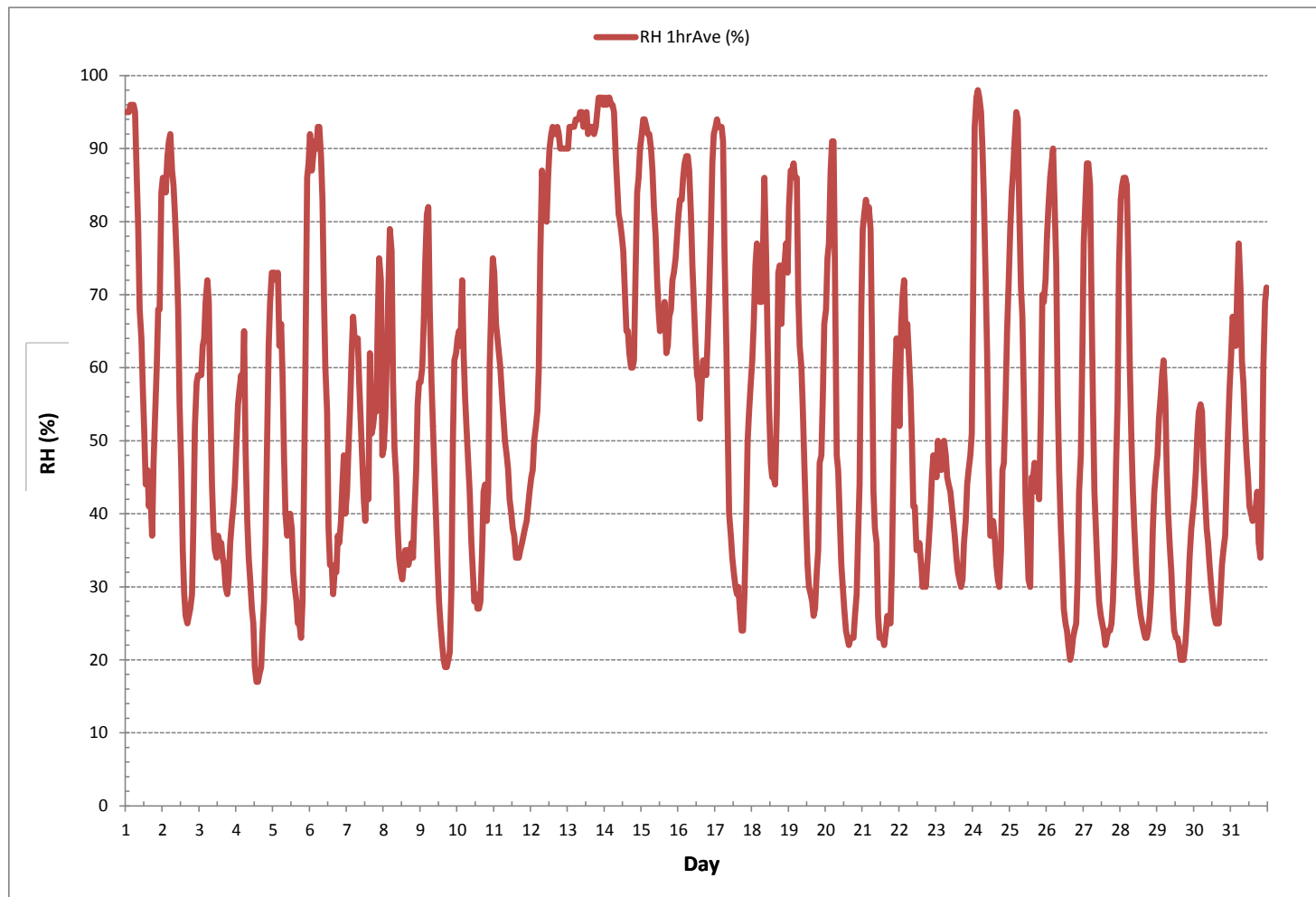
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	17	%	@ HOUR	13	ON DAY	4
MAXIMUM 1-HR AVERAGE:	98	%	@ HOUR	3	ON DAY	24
MAXIMUM 24-HR AVERAGE:	94	%			ON DAY	13
OPERATIONAL TIME:						744 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	23		MONTHLY AVERAGE:			55 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 2017

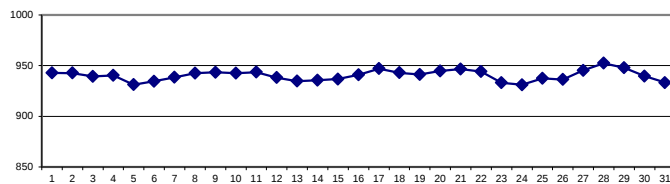
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	943	943	944	944	944	944	944	944	944	944	944	944	943	943	942	942	942	941	941	941	941	941	941	941	941	941	944	943	24
2	941	941	941	941	941	942	942	943	943	944	944	944	944	944	943	943	943	943	943	943	943	942	942	942	941	944	943	24	
3	942	941	941	940	940	940	940	940	940	940	940	939	939	938	938	937	938	937	938	938	939	939	939	939	939	937	942	939	24
4	940	940	940	940	940	941	941	941	942	942	942	942	942	941	941	940	940	940	939	939	939	939	938	938	938	938	942	940	24
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9	943	943	943	944	944	944	944	945	945	945	944	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	945	943	24
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17	945	946	946	947	947	947	948	948	949	949	949	948	948	948	947	947	946	946	946	946	946	946	946	945	945	949	947	24	
18	945	945	945	944	944	944	944	944	944	944	944	943	943	943	942	942	942	942	941	942	941	941	941	941	941	945	943	24	
19	941	941	941	941	941	941	942	942	942	942	941	941	941	941	941	941	940	941	941	941	941	941	942	942	940	942	941	24	
20	942	943	943	943	943	944	945	945	945	945	945	945	945	945	945	945	945	945	945	945	946	946	946	946	942	946	945	24	
21	946	946	947	947	947	947	948	948	948	948	948	948	947	947	946	946	946	946	946	946	946	946	945	945	945	945	948	947	24
22	946	946	946	946	946	946	946	946	946	945	945	945	945	944	944	944	944	943	942	942	942	941	941	940	940	946	944	24	
23	940	939	939	938	938	938	938	937	937	936	936	935	934	933	932	931	929	928	927	926	925	925	925	925	925	940	933	24	
24	925	925	926	926	926	926	928	929	929	930	931	932	932	933	933	933	933	934	934	935	935	936	936	937	925	937	931	24	
25	937	937	937	938	938	939	939	939	939	939	939	938	938	937	937	937	937	937	937	937	936	937	936	936	936	936	939	938	24
26	936	936	936	936	936	936	936	936	936	936	936	937	937	937	936	936	936	936	936	936	936	936	936	936	936	936	937	936	24
27	937	937	938	939	940	941	943	944	945	945	946	946	947	947	947	948	948	948	949	949	950	950	951	951	937	951	945	24	
28	951	952	952	952	953	953	954	954	954	954	954	954	953	953	952	952	951	951	951	951	951	951	951	950	950	954	952	24	
29	950	950	950	950	950	950	950	950	950	949	949	949	948	948	947	947	946	946	945	945	945	944	944	944	944	950	948	24	
30	944	943	943	943	943	943	942	942	942	941	941	940	940	939	938	937	937	937	936	936	936	936	935	935	935	935	944	940	24
31	935	934	934	934	934	933	933	933	933	933	933	933	933	933	934	934	934	933	933	933	933	932	932	932	932	932	935	933	24
HOURLY MAX	951	952	952	952	953	953	954	954	954	954	954	954	954	953	953	952	952	951	951	951	951	951	951	951	951	951	951		
HOURLY AVG	940	940	940	940	940	941	941	941	941	941	941	941	941	940	940	940	940	940	940	940	940	940	940	940	940	940	940		

STATUS FLAG CODES

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

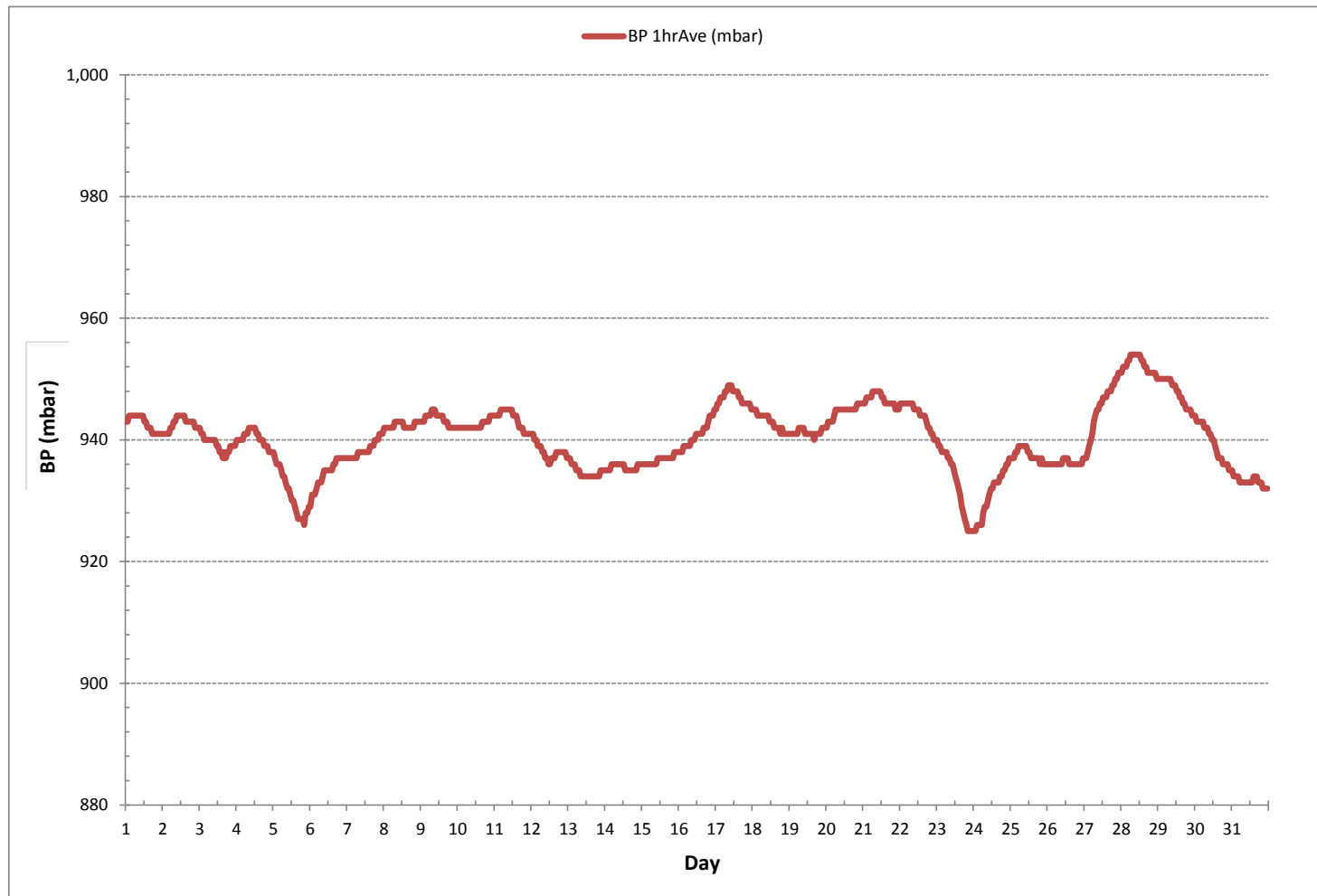
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	925	mbar	@ HOUR	20	ON DAY	23
MAXIMUM 1-HR AVERAGE:	954	mbar	@ HOUR	6	ON DAY	28
MAXIMUM 24-HR AVERAGE:	952	mbar			ON DAY	28
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	5				MONTHLY AVERAGE:	940 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - May 2017

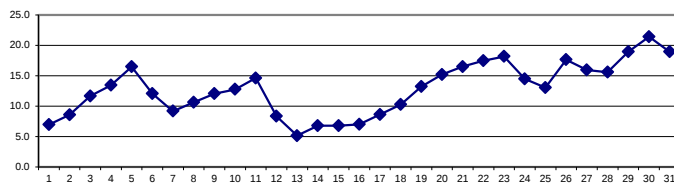
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	-0.3	-1.0	-2.0	-1.9	-1.7	-1.5	1.6	4.9	7.2	9.8	10.8	11.3	12.5	12.8	12.0	13.1	13.0	14.8	11.6	10.3	8.8	7.3	7.4	6.1	-2.0	14.8	7.0	24
2	4.6	3.8	3.9	3.4	3.9	3.9	4.7	5.4	6.7	7.7	9.2	10.8	12.0	13.2	14.1	14.5	15.7	15.1	14.6	13.4	9.8	6.4	5.0	4.5	3.4	15.7	8.6	24
3	4.0	4.5	3.2	3.0	1.7	1.3	3.7	7.3	10.7	13.1	14.6	15.9	16.4	17.9	18.4	19.1	18.8	18.4	17.5	16.4	15.1	14.0	13.1	12.1	1.3	19.1	11.7	24
4	10.5	9.1	8.5	7.8	7.7	6.1	9.8	12.3	13.2	14.9	16.1	16.9	18.3	19.2	19.7	20.2	20.2	20.0	19.1	16.1	12.3	9.1	8.0	7.6	6.1	20.2	13.4	24
5	7.1	7.0	7.6	8.0	10.0	9.6	11.7	14.4	17.6	18.7	18.4	17.5	19.1	22.3	23.4	25.0	25.3	26.1	25.9	23.3	17.8	15.1	13.2	11.8	7.0	26.1	16.5	24
6	9.4	11.1	10.4	10.0	9.8	8.5	9.1	10.5	11.2	13.3	14.6	15.3	17.1	17.2	15.7	15.7	14.1	13.7	12.4	11.7	10.8	9.4	9.3	9.3	8.5	17.2	12.1	24
7	8.1	6.8	5.2	3.1	2.7	4.3	5.5	6.8	8.8	10.4	11.8	13.7	13.6	12.4	13.7	10.8	12.2	12.1	11.6	12.0	9.4	7.8	7.8	9.8	2.7	13.7	9.2	24
8	8.9	7.0	4.5	2.3	0.5	1.1	5.5	8.4	10.5	12.2	13.4	14.4	15.5	15.2	14.8	15.8	16.5	16.2	15.0	15.6	13.2	11.6	9.3	7.4	0.5	16.5	10.6	24
9	7.4	6.6	5.8	3.3	1.2	1.7	7.0	10.1	11.8	13.2	15.3	16.5	17.5	18.7	18.7	19.5	20.8	19.7	18.9	18.3	13.9	8.4	7.2	7.6	1.2	20.8	12.0	24
10	7.1	6.2	5.7	4.1	6.1	7.9	9.7	11.5	13.4	15.7	18.1	19.3	17.9	19.0	19.4	18.6	17.4	16.1	16.8	16.3	14.6	11.0	8.2	6.1	4.1	19.4	12.8	24
11	7.5	9.6	9.9	9.4	8.5	8.2	9.4	11.2	12.9	14.3	16.3	17.8	18.9	19.2	20.3	20.0	19.8	19.2	18.9	18.1	17.2	16.1	14.7	13.5	7.5	20.3	14.6	24
12	12.8	11.9	10.9	10.1	9.6	9.0	7.8	6.9	7.5	8.3	8.8	8.1	7.7	7.2	7.5	7.6	7.6	7.6	7.5	7.5	7.4	7.2	7.0	6.7	6.7	12.8	8.3	24
13	6.5	6.1	5.8	5.6	5.3	4.8	4.3	3.8	3.5	3.8	4.1	4.3	4.9	5.4	5.4	5.5	5.3	5.9	6.0	5.7	5.6	5.6	5.4	5.1	3.5	6.5	5.2	24
14	4.8	4.4	3.8	3.5	3.5	3.7	4.2	4.6	5.4	6.0	6.3	7.0	7.4	9.0	10.0	9.8	10.6	11.0	10.6	10.1	8.3	6.9	6.2	5.6	3.5	11.0	6.8	24
15	5.3	5.1	5.0	4.7	4.4	4.1	4.2	5.0	6.0	7.0	8.2	8.7	9.6	9.5	9.6	9.8	9.9	9.2	8.2	7.1	6.0	5.7	5.5	5.1	4.1	9.9	6.8	24
16	4.6	4.6	4.9	4.6	4.4	4.4	4.5	5.4	6.8	7.8	8.5	9.6	10.0	10.5	11.8	11.0	10.7	10.1	10.3	9.4	7.9	5.0	1.8	0.0	0.0	11.8	7.0	24
17	-1.1	-1.1	-1.7	-2.2	-2.1	-0.7	4.4	8.5	9.7	11.0	12.1	13.0	14.0	14.8	15.0	14.8	15.6	16.0	16.1	14.6	11.5	9.8	8.3	6.8	-2.2	16.1	8.6	24
18	6.0	5.2	3.7	3.3	3.9	5.8	7.1	6.9	7.8	10.8	12.9	14.0	15.1	16.3	16.5	17.2	14.5	12.6	13.6	14.4	11.7	10.3	8.5	8.2	3.3	17.2	10.3	24
19	6.2	5.1	5.0	4.9	5.7	6.0	10.2	12.1	12.8	14.4	16.2	17.5	18.7	19.0	19.4	19.4	19.6	19.4	18.0	17.6	14.5	13.8	12.0	10.1	4.9	19.6	13.2	24
20	10.4	9.5	8.5	5.6	3.3	3.4	10.1	14.6	14.7	17.2	18.9	20.0	20.9	21.2	21.2	21.4	21.7	21.5	22.1	21.0	18.9	15.6	13.9	9.2	3.3	22.1	15.2	24
21	6.5	5.3	4.9	4.5	4.0	5.9	11.7	17.0	17.7	19.3	21.1	22.5	23.6	23.6	24.7	25.3	24.0	25.2	24.7	22.3	19.0	15.5	13.6	14.1	4.0	25.3	16.5	24
22	15.9	13.0	12.1	11.4	13.5	13.1	14.6	16.2	18.0	19.7	20.2	21.0	21.0	21.4	21.4	21.4	21.1	20.8	20.0	19.3	18.4	16.0	14.7	15.1	11.4	21.4	17.5	24
23	15.9	14.9	15.1	15.2	14.3	14.3	15.2	16.4	17.3	18.1	18.9	19.6	20.9	21.8	22.3	22.3	23.1	22.5	20.9	19.9	18.3	17.2	16.3	15.6	14.3	23.1	18.2	24
24	13.7	11.5	11.1	10.7	10.3	10.4	10.4	11.2	12.9	15.2	17.4	19.1	18.8	18.7	19.3	18.9	19.3	19.4	17.8	15.6	14.9	12.2	10.0	8.8	8.8	19.4	14.5	24
25	7.2	6.7	6.7	5.2	4.4	6.4	9.1	11.2	11.9	14.4	16.5	17.6	18.7	19.4	16.9	17.8	16.7	18.0	17.5	19.5	15.7	12.0	12.1	11.8	4.4	19.5	13.1	24
26	10.4	9.4	8.7	8.3	7.5	9.6	12.6	15.2	17.0	19.0	20.8	21.8	22.7	22.8	24.3	24.6	24.9	25.1	24.8	24.3	22.1	17.7	16.3	13.5	7.5	25.1	17.6	24
27	9.9	8.0	7.1	6.8	6.8	10.5	14.2	15.9	17.1	18.2	20.0	21.3	21.7	22.3	22.4	22.7	22.4	22.1	21.4	20.2	18.4	14.0	11.8	7.4	6.8	22.7	15.9	24
28	5.6	4.7	4.5	4.1	4.6	7.2	11.9	14.8	16.3	17.8	19.2	20.0	20.9	21.7	22.7	23.3	23.0	23.6	22.9	21.4	19.6	16.4	14.5	13.1	4.1	23.6	15.6	24
29	12.3	11.0	9.7	9.9	9.7	11.3	14.7	17.0	18.7	21.1	22.5	23.5	24.3	25.1	25.9	26.1	26.2	25.7	24.9	23.1	20.5	18.2	17.1	16.4	9.7	26.2	19.0	24
30	15.6	14.1	12.9	11.8	11.6	12.5	15.7	18.6	21.0	22.9	24.9	26.4	27.7	28.5	29.3	29.6	29.6	27.8	26.4	25.7	24.0	20.8	18.6	17.4	11.6	29.6	21.4	24
31	16.5	15.3	15.1	15.3	13.7	13.4	15.7	17.7	18.9	21.2	22.4	23.2	24.0	24.5	23.1	22.1	21.8	21.6	23.3	23.3	21.0	15.9	13.3	12.8	12.8	24.5	19.0	24
HOURLY MAX	16.5	15.3	15.1	15.3	14.3	14.3	15.7	18.6	21.0	22.9	24.9	26.4	27.7	28.5	29.3	29.6	29.6	27.8	26.4	25.7	24.0	20.8	18.6	17.4				
HOURLY AVG	8.4	7.6	7.0	6.3	6.1	6.7	9.0	11.0	12.4	14.1	15.4	16.4	17.1	17.7	18.0	18.2	18.1	18.0	17.4	16.6	14.4	12.0	10.6	9.6				

STATUS FLAG CODES

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

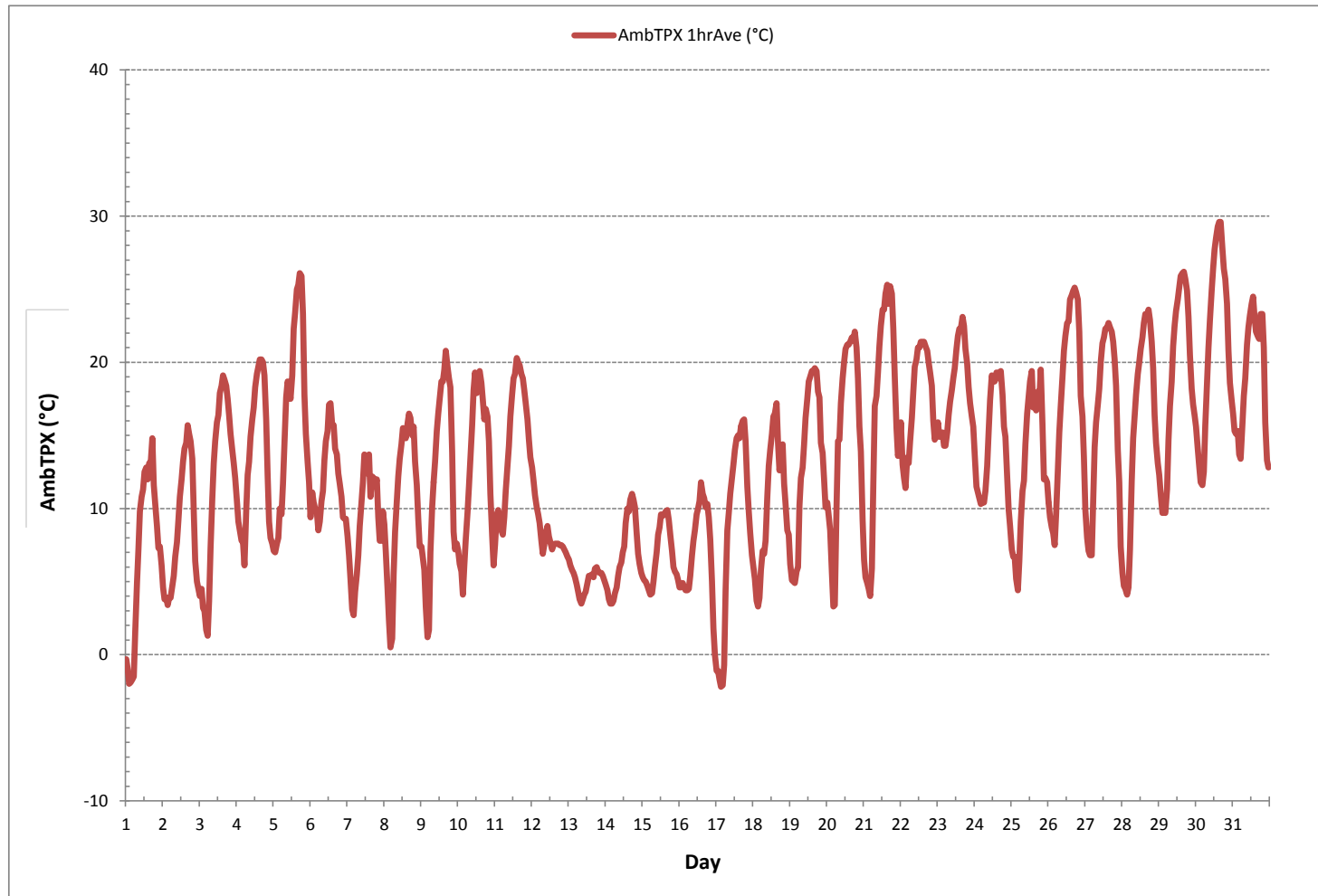
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-2.2	°C	@ HOUR	3	ON DAY	17
MAXIMUM 1-HR AVERAGE:	29.6	°C	@ HOUR	15	ON DAY	30
MAXIMUM 24-HR AVERAGE:	21.4	°C			ON DAY	30
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	6.5				MONTHLY AVERAGE:	12.8 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

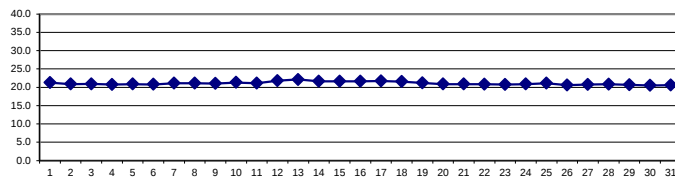
STATION TEMPERATURE Hourly Averages (StnTPX °C)

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	22.5	22.7	22.7	22.7	22.7	22.7	22.7	21.4	20.8	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.7	20.7	20.6	22.7	21.3	24
2	20.3	20.7	22.5	20.8	20.9	22.6	21.0	20.5	20.8	21.0	20.9	20.8	20.7	20.7	20.7	20.7	20.7	20.7	20.6	20.6	20.6	20.6	20.6	20.5	20.3	22.6	20.9	24
3	20.3	22.0	21.6	20.5	21.9	22.4	21.9	20.5	20.8	20.8	20.7	20.7	20.6	20.7	20.7	20.8	20.7	20.7	20.6	20.6	20.6	20.6	20.7	20.7	20.3	22.4	20.9	24
4	20.6	20.7	20.7	20.7	20.8	20.3	20.6	21.0	20.8	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.8	20.8	20.7	20.6	20.7	20.7	20.8	20.3	21.0	20.8	24
5	20.8	20.8	20.9	20.7	20.9	20.9	21.0	20.9	20.9	20.9	20.8	20.8	20.8	20.9	21.0	21.1	21.0	21.1	21.1	20.9	20.7	20.7	20.7	20.7	20.7	21.1	20.9	24
6	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.7	20.8	20.7	20.8	20.7	20.9	20.8	20.7	20.7	20.7	20.7	20.7	20.8	20.8	20.8	20.9	20.8	20.7	20.9	20.8	24
7	20.8	20.9	20.3	22.1	22.9	20.9	21.5	22.3	21.1	21.0	20.9	20.9	20.8	20.8	20.8	20.9	20.8	20.9	20.8	21.0	20.8	20.8	20.8	20.9	20.3	22.9	21.1	24
8	20.9	20.6	20.6	22.5	22.9	22.2	21.1	22.3	21.0	21.1	20.9	20.9	20.9	20.9	20.8	20.8	20.8	20.8	20.7	20.7	20.8	20.8	20.8	20.8	20.6	22.9	21.1	24
9	20.9	20.7	20.3	22.1	22.8	20.9	22.1	21.9	21.0	20.9	20.9	20.9	17.6	20.5	21.1	20.8	21.1	21.1	20.9	21.1	21.0	21.2	21.2	21.2	17.6	22.8	21.0	24
10	21.3	21.3	21.5	21.9	21.9	21.5	21.9	21.2	21.3	21.2	20.9	20.6	21.5	21.1	20.8	20.9	21.6	21.1	21.2	21.3	21.4	21.0	21.0	21.8	20.6	21.9	21.3	24
11	21.4	21.4	21.5	21.7	21.9	21.3	21.7	20.9	21.2	21.1	21.2	21.4	20.4	20.9	20.2	20.3	20.6	20.8	21.2	21.3	21.4	21.0	21.0	21.2	20.2	21.9	21.1	24
12	21.3	20.9	21.4	21.6	21.5	21.5	21.5	22.5	21.8	21.4	21.8	21.5	21.7	22.0	21.8	22.3	21.9	21.8	22.2	22.5	21.8	21.8	21.8	21.8	20.9	22.5	21.8	24
13	21.8	22.2	21.8	21.7	22.0	22.5	21.8	22.5	22.9	23.0	21.8	22.6	21.7	22.3	22.1	21.9	21.9	22.0	21.8	21.8	22.5	21.9	22.0	22.0	21.7	23.0	22.1	24
14	22.2	22.6	21.9	22.5	22.2	21.9	22.3	22.3	21.9	21.3	21.7	21.2	21.3	21.6	21.2	20.9	21.0	21.2	20.9	21.0	21.3	21.7	21.4	21.9	20.9	22.6	21.6	24
15	21.9	21.8	21.9	21.9	22.2	22.4	21.9	22.2	21.8	21.7	21.7	21.8	20.8	21.1	21.2	20.9	21.1	21.2	21.5	21.6	21.7	21.4	21.6	21.8	20.8	22.4	21.6	24
16	21.8	22.1	22.3	21.8	22.0	22.7	21.8	21.8	21.9	21.8	21.4	21.4	21.4	20.9	21.1	21.3	21.0	21.0	21.2	21.3	21.3	21.4	21.9	22.1	20.9	22.7	21.6	24
17	22.4	22.7	22.7	22.6	22.5	22.4	22.5	22.1	21.6	21.4	21.2	21.4	21.1	21.2	21.4	21.5	21.1	21.2	21.3	21.4	20.9	20.9	21.4	21.6	20.9	22.7	21.7	24
18	21.7	22.0	21.9	22.7	21.7	22.3	22.0	22.0	21.9	21.6	21.4	21.2	21.5	21.1	21.1	21.4	21.5	20.9	21.0	21.1	21.2	20.8	21.4	21.5	20.8	22.7	21.5	24
19	21.8	21.9	21.8	22.2	21.9	21.9	21.3	21.4	21.3	21.3	21.2	20.5	20.3	20.3	20.3	20.2	20.2	20.5	21.4	21.1	21.2	21.2	21.3	21.0	20.2	22.2	21.1	24
20	21.1	21.3	21.4	21.4	21.9	22.1	22.0	21.1	21.3	20.6	20.4	20.4	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.7	21.3	21.4	21.0	20.1	22.1	20.9	24
21	21.4	21.3	21.8	21.8	21.8	22.3	21.4	21.4	21.2	20.5	20.3	20.3	20.2	20.3	20.2	20.0	20.1	20.2	20.1	20.1	20.6	21.4	21.3	21.0	20.0	22.3	20.9	24
22	21.1	21.3	21.3	21.0	21.1	21.3	21.0	21.2	21.1	20.5	20.3	20.3	20.3	20.2	20.2	20.3	20.2	20.3	20.3	21.2	21.3	21.4	21.0	21.0	20.2	21.4	20.8	24
23	21.2	21.4	21.0	21.1	21.2	21.1	21.0	21.3	21.1	20.2	20.3	20.3	20.3	20.2	20.2	20.1	20.1	20.1	20.3	20.1	21.4	20.9	21.1	21.4	20.0	21.4	20.7	24
24	20.9	21.0	21.1	21.0	20.9	21.3	21.3	21.0	21.0	21.0	20.8	20.2	20.6	20.6	20.1	20.5	20.8	20.1	20.9	21.4	20.9	20.9	21.0	21.2	20.1	21.4	20.9	24
25	21.7	21.1	21.8	21.8	21.8	21.8	21.5	21.2	20.9	20.9	20.6	20.3	20.2	20.2	20.8	21.1	21.4	21.0	21.1	21.3	20.8	20.9	21.1	21.1	20.2	21.8	21.1	24
26	20.9	21.3	21.6	21.6	21.2	21.3	21.2	21.2	20.7	20.2	20.2	20.1	20.2	20.0	20.0	20.1	19.9	20.0	20.0	19.9	19.9	20.8	21.3	20.8	19.9	21.6	20.6	24
27	20.9	21.2	21.3	21.5	21.6	21.9	21.2	21.1	20.6	20.3	20.2	20.2	20.2	20.1	20.0	20.2	20.1	20.1	20.0	20.5	20.9	20.9	21.1	21.0	20.0	21.9	20.7	24
28	21.4	21.7	21.9	21.8	21.8	21.9	21.5	21.3	21.2	20.9	20.2	20.2	20.1	20.1	20.0	20.0	20.1	20.0	20.0	20.0	20.7	21.0	21.2	21.0	20.0	21.9	20.8	24
29	20.9	21.4	21.3	21.5	21.7	21.3	21.5	21.1	20.9	20.3	20.3	20.2	20.1	20.1	20.2	20.0	20.0	20.1	20.1	20.0	20.0	20.8	21.5	21.1	20.0	21.7	20.7	24
30	21.0	21.2	21.1	20.9	21.3	21.2	21.3	21.1	20.3	20.3	20.3	20.0	20.2	19.9	20.0	20.0	19.9	19.8	20.0	19.9	20.0	20.6	21.0	21.0	19.8	21.3	20.5	24
31	21.3	20.9	21.0	21.3	21.0	20.9	21.1	21.1	20.9	20.4	20.0	20.2	20.0	20.1	19.9	20.0	20.0	19.9	20.0	20.1	20.9	20.8	21.1	20.7	19.9	21.3	20.6	24
HOURLY MAX	22.5	22.7	22.7	22.7	22.9	22.7	22.7	22.5	22.9	23.0	21.8	22.6	21.7	22.3	22.1	22.3	21.9	22.0	22.2	22.5	22.5	21.9	22.0	22.1				
HOURLY AVG	21.3	21.4	21.5	21.6	21.7	21.7	21.5	21.4	21.2	21.0	20.8	20.8	20.6	20.7	20.7	20.7	20.7	20.7	20.7	20.8	20.9	21.0	21.2	21.2				

STATUS FLAG CODES

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

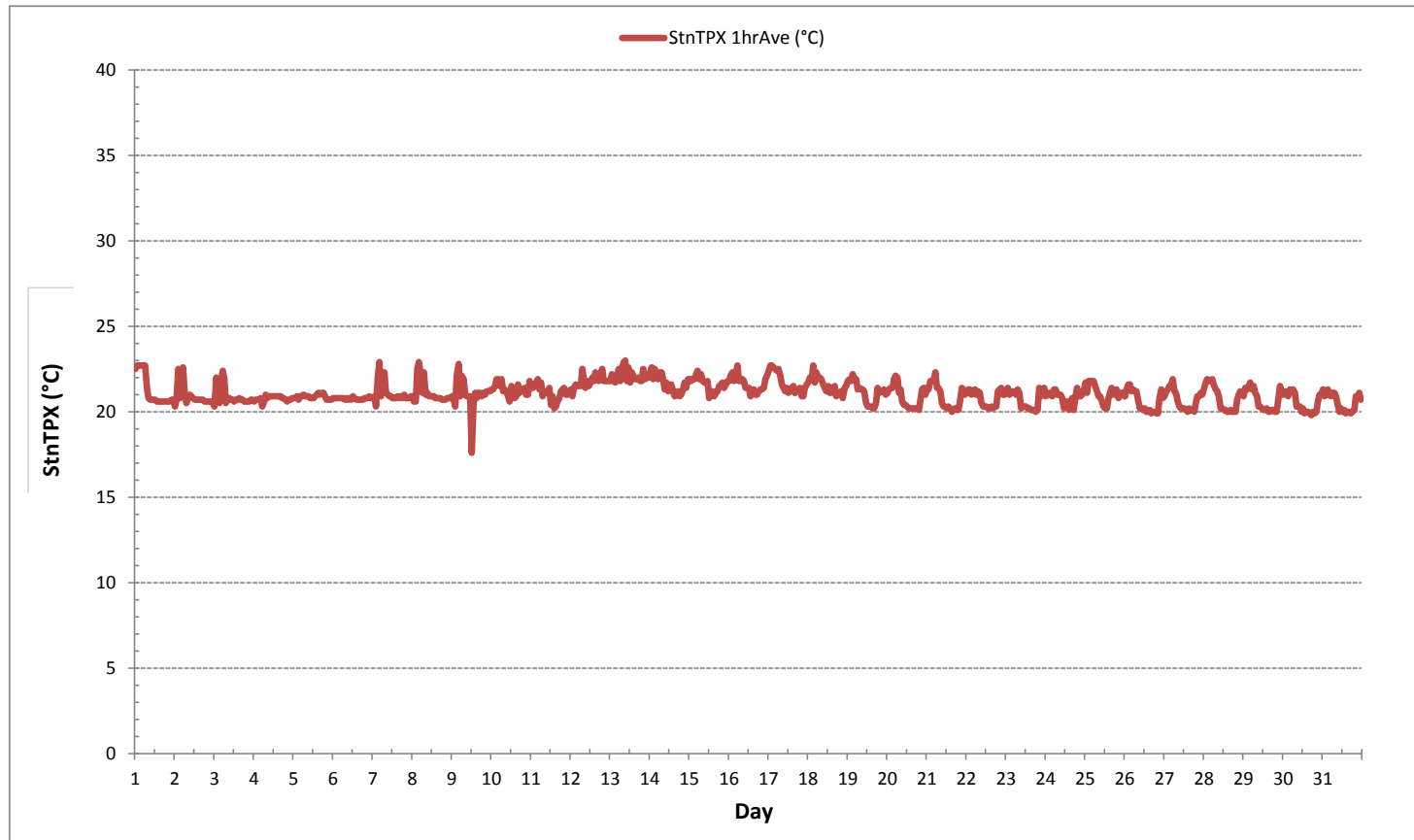
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	17.6	°C	@ HOUR	12	ON DAY	9
MAXIMUM 1-HR AVERAGE:	23.0	°C	@ HOUR	9	ON DAY	13
MAXIMUM 24-HR AVERAGE:	22.1	°C			ON DAY	13
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.7		MONTHLY AVERAGE:		21.1	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



Thermo 43C Sulphur Dioxide Analyzer Calibration

Date:	May 9, 2017	Barometric Pressure:	27.87 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	20
Location/Station Name:	986b	Weather Conditions:	Mainly sunny
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	12:43	Performed By/Reviewer:	Michael Espiritu Trina Whitsitt
End Time 24 hr. (mst):	16:00	Cal Gas Expiry Date:	December 2, 2019
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a

Analyzer:			
ID# or Serial Number:	43C-62339-335	Range ppb:	500
Last Calibration Date:	April 18, 2017	As Found C.F.:	1.024
Previous C.F.:	1.000	New C.F.:	0.995

Calibrator:		Standard Calibration Points for Ranges
Flow Meter ID's:	Defender SN: 148944 & 152019	
Make & Model:	Sabio 2010	
Serial #:	042531101(0911)	
Cal Gas Cylinder I.D. #:	LL119329	
Cal Gas Conc. (ppm):	50.1	

Point	ppb
High	380
Mid	180
Low	90

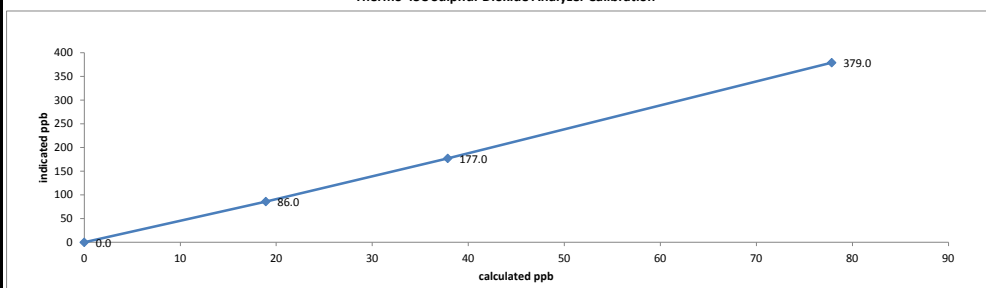
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	6049	0.00	6049	0.0	1.0	n/a
as found high	5997	45.47	6042	377.0	369.0	1.024
adjusted zero	6049	0.00	6049	0.0	0.0	n/a
adjusted high	5997	45.47	6042	377.0	379.0	0.995
mid	5996	21.45	6017	178.6	177.0	1.009
low	5861	10.51	5872	89.7	86.0	1.043
calibrator zero	6049	0.00	6049	0.0	0.0	n/a
Average C.F. =						1.015

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS
Slope =	0.991	> or = 0.995
b (Intercept as % of full scale) =	0.44%	.95-1.05
% change in C.F. from last cal =	-2.45%	± 3% F.S.
		± 10%

Thermo 43C Sulphur Dioxide Analyzer Calibration



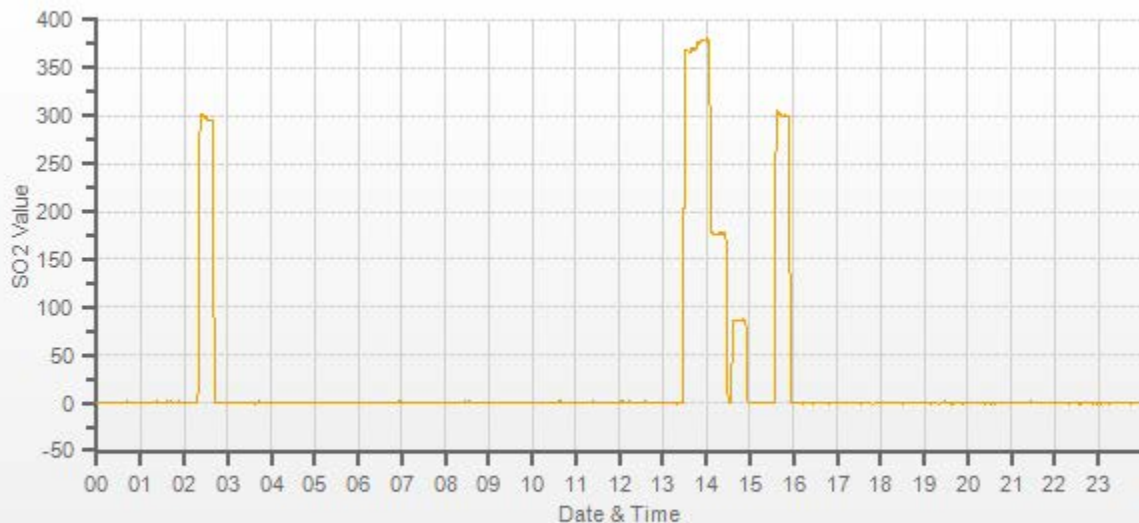
As found:	As left:
BKG: 73.7	BKG: 75.5
COEF: .889	COEF: .905
PMT: -654	PMT: -654
LAMP: 845	LAMP: 846
BATTERY: 3.3	BATTERY: 3.3
INTERNAL: 29.9	INTERNAL: 32.4
CHAMBER: 45.6	CHAMBER: 45.6
PRESSURE: 449.4	PRESSURE: 448.7
FLOW: .806	FLOW: .804
INTENSITY: 38002	INTENSITY: 38260
CONVERTER: n/a	CONVERTER: n/a
CONVERTER SET: n/a	CONVERTER SET: n/a
Expected Value: 284.7	Expected Value: 300.0

Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

Flow measurements after mid-point.



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date:	May 9, 2017	Barometric Pressure:	27.87 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	20
Location/Station Name:	986b	Weather Conditions:	Mainly sunny
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	12:43	Performed By/Reviewer:	Michael Espiritu Trina Whitsitt
End Time 24 hr. (mst):	16:00	Cal Gas Expiry Date:	July 15, 2017
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CDN 101 SN: 516

Analyzer:		Range ppb:	100
ID# or Serial Number:	1152940011	As Found C.F.:	0.979
Last Calibration Date:	April 18, 2017	New C.F.:	1.001
Previous C.F.:	0.999		

Calibrator:	Standard Calibration Points for Ranges	SO ₂ Scrubber Check (10 mins.)								
Flow Meter ID's: Defender SN: 148944 & 152019	<table><tr><th>Point</th><th>ppb</th></tr><tr><td>High</td><td>78</td></tr><tr><td>Mid</td><td>38</td></tr><tr><td>Low</td><td>19</td></tr></table>	Point	ppb	High	78	Mid	38	Low	19	Start/End Time 24 hr.: 9:35 - 9:45
Point	ppb									
High	78									
Mid	38									
Low	19									
Make & Model: API 700		Target Concentration (ppb): 780								
Serial #: 831		Result (ppb): 0								
Cal Gas Cylinder I.D. #: LL74267		Zero Corrected Result (ppb): 0								
Cal Gas Conc. (ppm): 9.9										

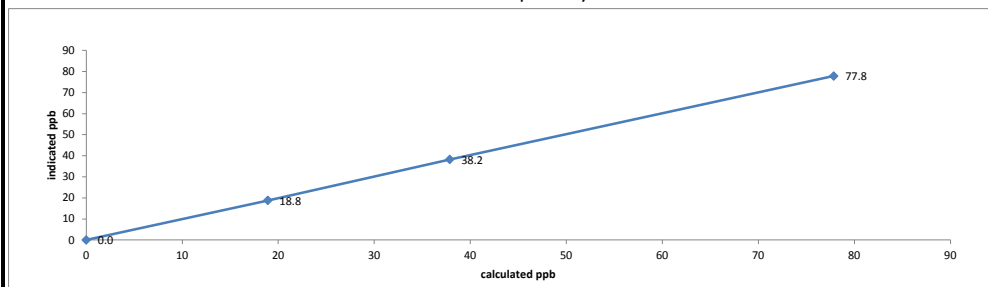
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	7590	0.00	7590	0.0	0.0	n/a
as found high	7529	59.80	7589	77.9	79.5	0.979
adjusted zero	7590	0.00	7590	0.0	0.0	n/a
adjusted high	7529	59.80	7589	77.9	77.8	1.001
mid	7576	29.14	7605	37.9	38.2	0.991
low	7593	14.57	7608	18.9	18.8	1.006
calibrator zero	7590	0.00	7590	0.0	0.2	n/a
Average C.F. =						0.999

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	1.000		.95-1.05
b (Intercept as % of full scale) =	-0.03%		± 3% F.S.
% change in C.F. from last cal =	1.97%		± 10%

Thermo 43i Total Reduced Sulphur Analyzer Calibration



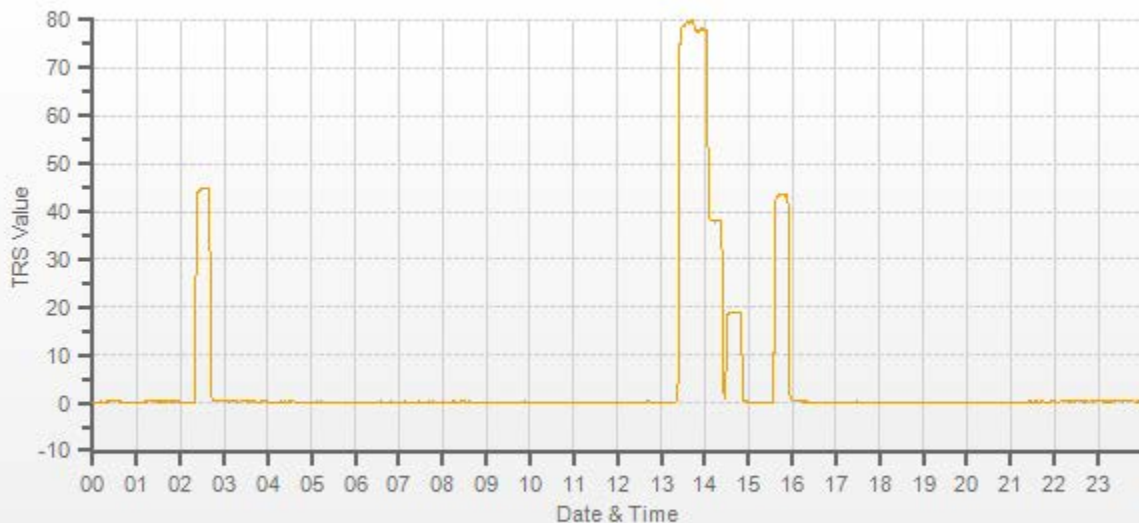
As found:		As left:	
BKG:	2.02	BKG:	1.97
COEF:	1.004	COEF:	.980
PMT:	-687.1	PMT:	-686
FLASH:	973	FLASH:	971
INTERNAL:	30.4	INTERNAL:	32.5
CHAMBER:	45	CHAMBER:	45.1
PERM OVEN GAS:	45	PERM OVEN GAS:	45
PERM OVEN HEATER:	44.24	PERM OVEN HEATER:	44.25
PRESSURE:	664.7	PRESSURE:	655.3
SAMPLE FLOW:	.475	SAMPLE FLOW:	.468
LAMP INTENSITY:	89	LAMP INTENSITY:	92
CONVERTER:	820	CONVERTER:	820
CONVERTER SET:	820	CONVERTER SET:	820
Expected Value:	44.3	Expected Value:	43.6

Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

Flow measurements after mid-point.



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

☒ remove

Date:	May 9, 2017	Barometric Pressure:	22.87 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	20
Location/Station Name:	986b	Weather Conditions:	Mainly sunny
Parameter:	CH ₄ / NMHC / THC	Calibration Purpose:	routine monthly
Start/End Time 24 hr. (mst):	15:15 - 18:22	Performed By/Reviewer:	Michael Espiritu Trina Whitsitt
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	November 25, 2023

Analyser:		Correction Factors:	
ID# or Serial Number:	1022143392	Previous C.F.:	As Found C.F.:
Measured Flow:	1027scm	CH ₄ =	1.000
Last Calibration Date:	April 18, 2017	NMHC =	1.000
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC =	1.000

Calibrator:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm
Flow Meter ID's:	SN: 148944 & 152019	
Make & Model:	Sabio 2010	
Serial #:	042531101(0911)	
Cal Gas Cylinder I.D. #:	LL86139	
CH ₄ Cylinder Conc. =	599.0	211.0 =C ₃ H ₈ Cylinder Conc.
CH ₄ as C ₃ H ₈ =	580.3	1179.3 =total CH ₄ equivalent

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

Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
as found zero	2502	0.00	2502	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2457	56.70	2514	13.51	13.09	26.60	13.02	13.22	26.25	1.038	0.990	1.013
adjusted zero	2502	0.00	2502	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2457	56.70	2514	13.51	13.09	26.60	13.50	13.05	26.54	1.001	1.003	1.002
mid	2440	30.00	2470	7.28	7.05	14.32	7.28	7.03	14.31	0.999	1.002	1.001
low	2485	12.82	2498	3.07	2.98	6.05	3.08	2.95	6.03	0.998	1.010	1.004
calibrator zero	2502	0.00	2502	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a

Average C.F. =

0.999 1.005 1.002

Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.999	0.998	0.998	.95-1.05
b (Intercept as % of full scale) =	0.03%	-0.04%	0.00%	± 3% F.S.
% change in C.F. from last cal =	-3.77%	1.00%	-1.33%	± 10%

As found:				As left:			
Interface Board Voltages:	Bias Supply:	-311.8		Calibration History cnt'd:	NM Peak Area:	74499	
Temperatures:	Detector Oven:	175.1		Crucial Settings:	Methane Start:	n/a	
	Filter:	175			Methane End:	n/a	
	Column Oven:	75.5			Backflush:	n/a	
	Internal:	37.4			NMHV Start:	n/a	
Cylinder Pressures/reg.:	Carrier:	1650	28		NMHC End:	n/a	
	Fuel:	1400	50	Run History>1:	Date:	09May17	
	Span Gas:	1900	50		Time:	17:33	
	Zero Air Generator:	45			CH ₄ PK HT:	0	
Internal Pressures:	Carrier:	31.4			CH ₄ RT:	12.4	
	Fuel:	40.5			CH ₄ Baseline:	1640	
	Air:	32.4			CH ₄ LOD:	22	
FID Status:	Status:	LIT			CH ₄ SD:	7	
	Counts:	20499			CH ₄ CONC:	0	
	Flame:	323			NM PK HT:	0	
	Det Base:	175.1			NM Peak Area:	0	
Flame and Power Stats:	Last Power On:	22Feb17@13:45:46			NM CONC:	0	
	Flameouts:	1			NM Base Start:	1644	
	Det Oven at Start:	170.6			NM Base End:	1643	
	Col Oven at Start:	74.7			NM LOD:	13	
Calibration History:	Time:	18Apr17@13:24			NM Start IDX:	16	
	Type:	Span			NM End IDX:	60	
	Status:	Good			NM Max Slope:	2.5e-01	
	Check/Adjust:	Adjust			NM Min Slope:	-5.0e-01	
	CH ₄ Span Conc:	14.64		Expected Values:	NM PT Count:	0	
	CH ₄ SP Ratio:	.000738			Previous CH ₄ :	8.84	
	CH ₄ RT:	12.4			Previous NMHC:	10.93	
	CH ₄ PK IDX:	22			Previous THC:	19.79	
	CH ₄ PK HT:	19826			New CH ₄ :	9.29	
	NM Span Conc:	14.13			New NMHC:	11.00	
	NM SP Ratio:	.00019			New THC:	20.30	

Comments:

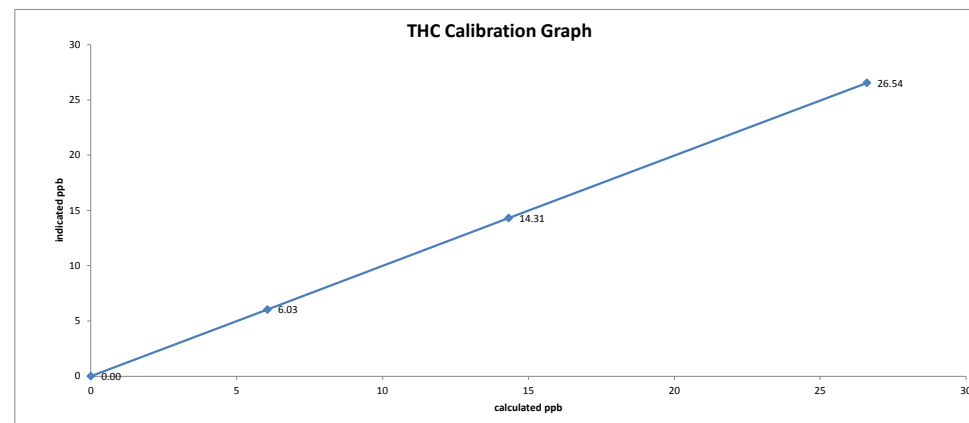
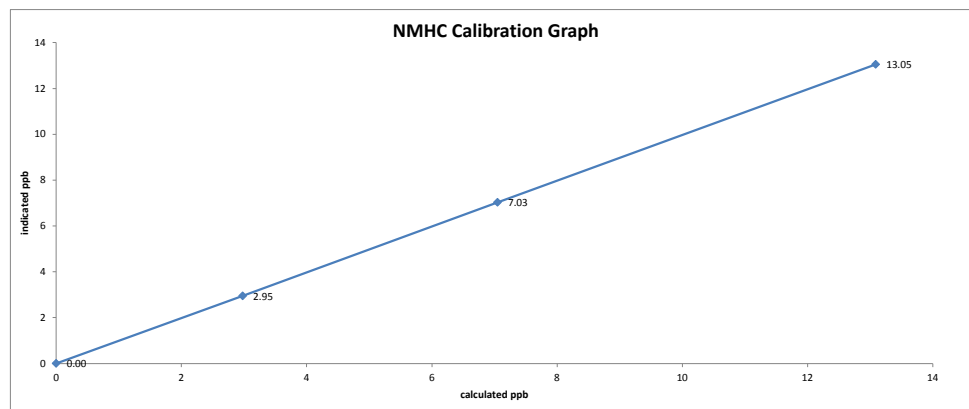
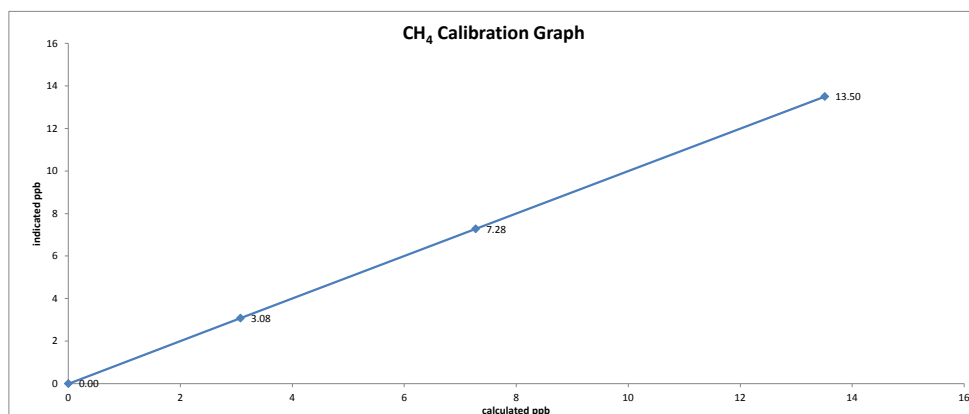
The analyzer sample inlet filter was changed.

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

The analyzer cooling fan filter(s) were cleaned.

Flow measurements after mid-point.

Date:	May 9, 2017	Start/End Time 24 hr. (mst):	15:15 - 18:22
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	986b	Calibration Method:	Gas Dilution





CH4[ppm] NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

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

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

Wind Sensor Information

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

Wind Calibrator Information

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

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

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

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

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

Comments: Adjust wind speed gain before calibration.

CALIBRATORS

Company <u>Maxxam</u>		Operator: <u>Mike</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>Bios Defender 530</u>
Serial Number	<u>42531101</u>	Serial Number	<u>Hi148944 Lo 152019</u>
Last Verification Date	<u>February 4, 2016</u>	Temperature (°C)	<u>24.6</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>701.4mmHg</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>4919</u>	Pt. #2	<u>4939</u>
Pt. #3	<u>4958</u>		
Gas Flow (sccm)			
Pt. #1	<u>79.7</u>	Pt. #2	<u>38.5</u>
Pt. #3	<u>19.0</u>		

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5005	0.0	0.0000	0.0000	0.0000	0.0002	0.0002	Limit ± 10%	
4999	79.7	0.7812	0.7812	0.7827	-0.0004	0.7823	0%	0%
4977	38.5	0.3790	0.3790	0.3803	-0.0004	0.3799	0%	0%
4977	19.0	0.1871	0.1871	0.1874	0.0001	0.1875	0%	0%
Absolute Average Percent Difference							0%	0%

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)=	1.0020	0.90-1.10		m (Slope)=	1.0012
b (Intercept % of FS)=	0.0095	± 3% F.S.		b (Intercept % of FS)=	0.0248

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4999	0.000	0.0000	0.7868	-0.0007	0.7861	NO ₂	% Diff. Limit
4999	0.500	0.5116	0.2752	0.5118	0.7870	0%	± 10%
4999	0.250	0.2843	0.5025	0.2832	0.7857	0%	± 10%
4999	0.100	0.1034	0.6834	0.1031	0.7866	0%	± 10%
Absolute Average Percent Difference						0%	± 10%

LINEAR REGRESSION ANALYSIS				$y=mx+b$ (where x=calculated concentration, y=indicated concentration)
NO₂		LIMITS		
Correlation=	1.0000	≥ 0.995		
m (Slope)=	1.0012	0.90-1.10		
b (Intercept % of FS)=	-0.0751	± 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>1809</u>	Serial/AMU Number	<u>1868</u>
SRM Gas Cylinder No.	<u>CAL018140</u>	Last Calibration Date	<u>February 13, 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: February 14, 2017
Location: McIntyre Center Edmonton

Company: Maxxam **Operator:** Mike

Calibrator:		Flow Measurement Device:	
Make/Model	API 700	Make/Model	Bios Defender 530+
Serial Number	831	Serial Number	Hi148944 Lo 152019
Last Verification Date	January 19, 2016	Temperature (°C)	24.6
SO ₂ Cylinder Conc.	50.5	Barometric Pressure	701.4mmHg
SO ₂ Cylinder S/N	EY0000769		
Expiry Date	December 8, 2019		

Flow Measurements

Pt. No. 1 77.3 **Pt. No. 2** 37.5 **Pt. No. 3** 18.8

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.0000	0.0001		
4995	0.7815	0.7889	1%	± 10%
5003	0.3785	0.3840	1%	± 10%
5007	0.1896	0.1911	1%	± 10%
Absolute Average Percent Difference			1%	± 10%

LINEAR REGRESSION ANALYSIS

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

SO₂ **LIMITS**
 Correlation= 1.0000 **≥ 0.995**
 m (Slope)= 1.0097 **0.90-1.10**
 b (Intercept % of FS)= 0.0341 **± 3% F.S.**

AENV Standards

Audit Calibrator

Make/Model R&R MFC 201
 Serial/AMU Number 1690
 SO₂
 SRM Gas Cylinder No. CAL016625
 Cylinder Conc. (ppm) 98.07

SO₂ Analyzer

Make/Model Themro 43i
 Serial/AMU Number 1623
 Last Calibration Date January 31, 2017
 Full Scale (ppm) 1.0
 Expiry Date January 5, 2019

COMMENTS: Analyzer verified prior to audit

Auditor: Shea Beaton
 Operator Signature: [Signature]

Date: February 14, 2017
 Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-111CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: LL119329 Concentration PPM: 50.1 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: Thermo146i
Serial Number: 1809
Last Verification Date: February 2, 2016
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625

Flow Measurement Device:

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

Reference Analyzer:

Make/Model: Thermo 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
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				
4960	0.0	0.000			
4959	79.09	0.791	0.01595	62.701	49.6
4950	39.44	0.394	0.00797	125.507	49.4
4942	19.44	0.194	0.00393	254.218	49.3
Average Cylinder Concentration:					49.5

Previous Stated Concentration PPM: 50.1

Percent variance from Stated: 1.3

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: SO2/NO blend 50.3ppm NO
<=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

Single Component Cylinder Gas

File No. 2014-250CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL74267 Concentration PPM: 9.88 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P.: 702 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
Last Calibration: Date: Dec15/14 C.F.: 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000			
5099	38.5	0.0731	0.00755	132.442	9.68
5092	18.0	0.0342	0.00353	282.889	9.67
5066	9.2	0.0173	0.00182	550.652	9.53
Average Cylinder Concentration:					9.63

Previous Stated Concentration PPM: 9.88

Percent variance from Stated: 2.6

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

Auditor: Al Clark Date: December 16, 2014
Operator Signature: [Signature] Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-091CGA

Company: Maxxam Operators name: Chris Wesson
Cylinder #: LL86139 Conc CH₄ (PPM) 599/211 Tolerance (%) 0.5 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1698
Last Verification Date January 18, 2016
Gas Type CH₄ Conc. 999.2
Cylinder Number D751932
Gas Type C₃H₈ Conc. 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC-2
Serial Number Bios D
Temp. °C 23
B.P. 599mmHg

Reference Analyzer:

Make/Model Thermo 55C Serial/AMU Number: 1643
Instrument Settings Zero: NA Span: NA Range: 20.0
Last Calibration: Date: 18-Jan-16 C.F. 1.000 Done By: SB

Calibrator Flows (scm)		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
2583	0.00	0.00	0.00				
2635	56.52	12.80	12.59	0.02145	46.621	597	213
2592	19.72	4.54	4.49	0.00761	131.440	597	215
2584	9.69	2.25	2.24	0.00375	266.667	600	217
Average Cylinder Concentration:						598	215

	<u>CH₄</u>	<u>C₃H₈</u>
Previous Stated Concentration PPM:	<u>599</u>	<u>211</u>
Percent variance from Stated:	<u>0.2</u>	<u>1.9</u>

Cylinder gas tolerances based on CH₄ only

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: C₃H₈ manufacturers tolerance 1.1%
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐

Auditor: Shea Beaton Date: January 19, 2016
Operator Signature: [Signature] 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
Maram Ghaleb	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.

Maram Ghaleb

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

June 20, 2017
Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2017-05-67-C

Site: Three Creeks 986b Station

Contact: Lily Lin

Level 0 Preliminary Verification

Maram Ghalet

Date June 15, 2017

Level 1 Primary Validation

Maram Ghalet

Date June 15, 2017

Level 2 Final Validation

Maram Ghalet

Date June 19, 2017

Level 3 Independent Data Review

Chadlinh

Date June 20, 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.