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

JOB #: 8449-2017-05-80-C

May 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **June 19, 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 842b 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 842b Station.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3678 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Three Creeks 842b Station						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO ₂ (ppb)	172	48	0	0	0	1	5	17	9.7	SE	1	1	100.0
TRS (ppb)	-	-	-	-	0.17	0.81	28	3	1.2	ESE	0.29	28	100.0
THC (ppm)	-	-	-	-	1.96	2.61	4	23	3	E	2.06	10	100.0
CH ₄ (ppm)	-	-	-	-	1.96	2.60	4	23	3	E	2.06	10	100.0
NMHC (ppm)	-	-	-	-	0.00	0.05	9	23	3.1	ENE	0.00	1	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	55	96	1	3	2	WNW	92	13	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	941	955	28	7	4.3	ESE	953	28	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	12.1	27.3	30	15	13	SSE	20.4	30	100.0
STATION TEMPERATURE (°C)	-	-	-	-	22.5	31.0	30	17	11.5	S	25.4	5	100.0
VECTOR WS (kph)	-	-	-	-	2.4	31	3	17	-	ENE	13.0	3	100.0
VECTOR WD (sec)	-	-	-	-	214 (SSW)	-	-	-	-	-	-	-	100.0

**SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY**

Three Creeks 842b Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	May

CONTINUOUS AMBIENT MONITORING								
PARAMETER	STN No.	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE		
			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	0.001 ppm	-		0.000 ppm	-	
THC	1	100.0	2.61 ppm	-		2.06 ppm	-	
CH ₄	1	100.0	2.60 ppm	-		2.06 ppm	-	
NMHC	1	100.0	0.05 ppm	-		0.00 ppm	-	
RH	1	100.0	96 %	-		92 %	-	
BP	1	100.0	955 mb	-		953 mb	-	
Ambient TPX	1	100.0	27.3 °C	-		20.4 °C	-	
Station TPX	1	100.0	31.0 °C	-		25.4 °C	-	
Wind Speed	1	100.0	30.7 kph	-		13.0 kph	-	
Wind Direction	1	100.0	-	-		-	-	

SIGNATURE OF COMPANY REPRESENTATIVE

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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 10.
- Two instances of maximum instantaneous data, collected on May 28 at 15:00 and May 31 at 13:00, 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 10.
- Two instances of maximum instantaneous data, collected on May 28 at 15:00 and May 31 at 13:00, 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 10.
- Slight, sporadic noise was noted for the NMHC parameter when sampling ambient air and this is reflected in the NMHC instantaneous maximum data. With the exception of one isolated instance (May 9 at hour 23:00 - 0.22 ppm) this noise remained below the acceptable threshold for this parameter based on AMD requirements (0.2 ppm) and, at all times, remained below a level that might trigger a VOC canister (0.3 ppm). This noise had minimal effect on hourly average data and given the analyzer was demonstrated to be operating within accepted limits, this noise is considered not to be significant. However, as this observation has persisted over an extended period of time, the analyzer was replaced on June 14.
- Two instances of maximum instantaneous data, collected on May 28 at 15:00 and May 31 at 13:00, 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%.
- Two instances of maximum instantaneous data, collected on May 28 at 15:00 and May 31 at 13:00, 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 - API 100A 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 - RM Young Unit

Barometric Pressure - RM Young Unit

Ambient Temperature - RM Young Unit

Station Temperature - Maxxam Supplied 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

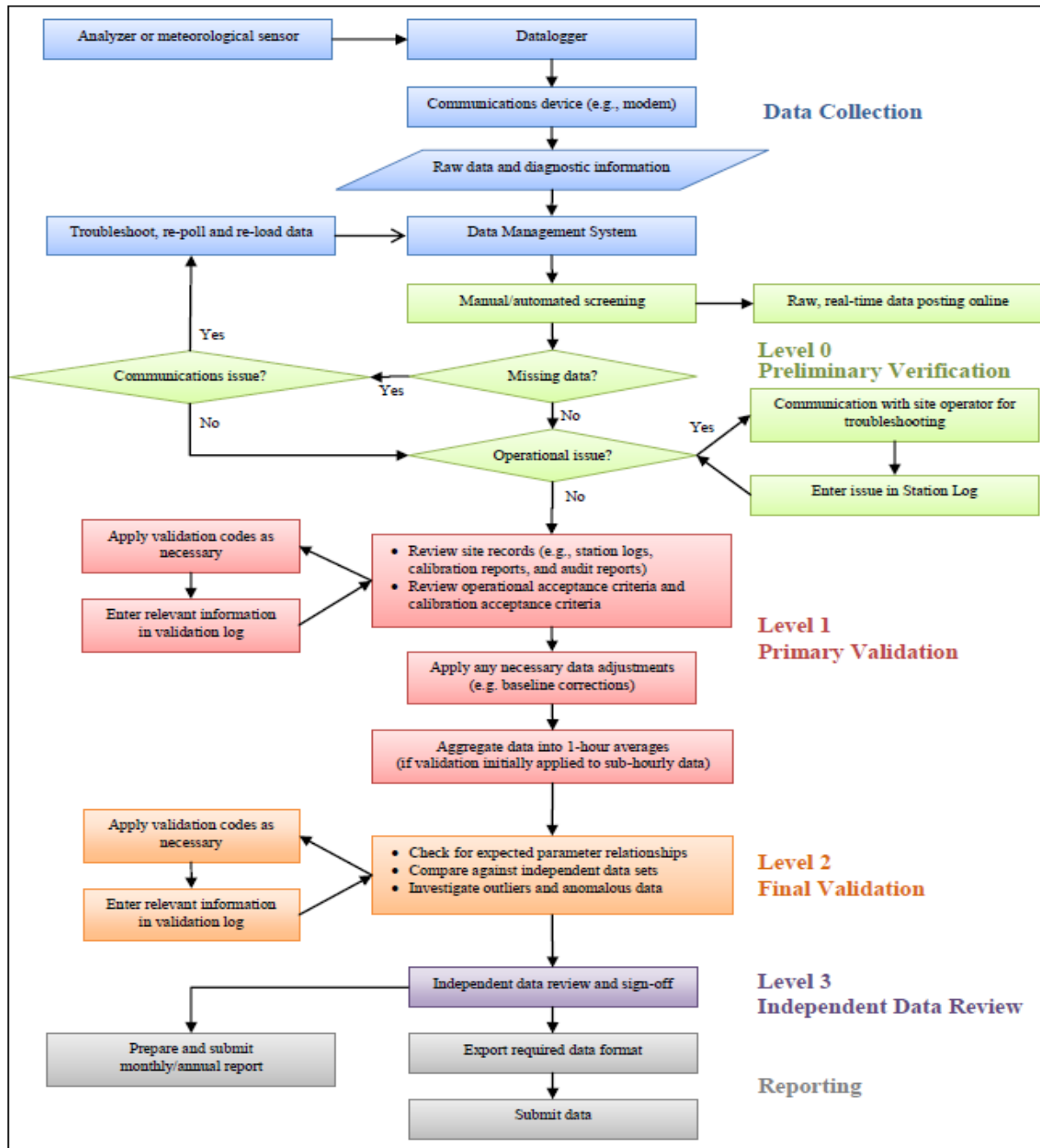
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
2	0	0	0	0	0	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	
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	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	0	0	0	24	
5	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	0	0	0	0	24	
6	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	0	0	0	24	
9	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	0	0	0	0	24	
10	0	S	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
11	S	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	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	0	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	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	0	S	0	0	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	0	0	S	0	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	0	0	S	0	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	0	S	0	0	0	0	0	0	0	0	0	0	0	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
21	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	
22	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	0	0	0	0	24	
23	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
24	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
25	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	0	0	0	24	
28	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
30	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	24	
31	0	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	24	
HOURLY MAX	1	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0					
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					

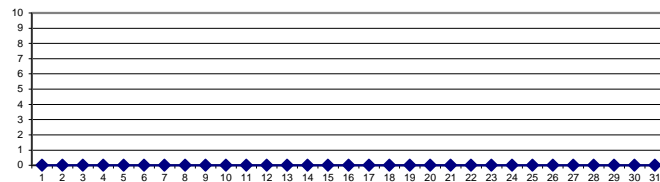
STATUS FLAG CODES

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
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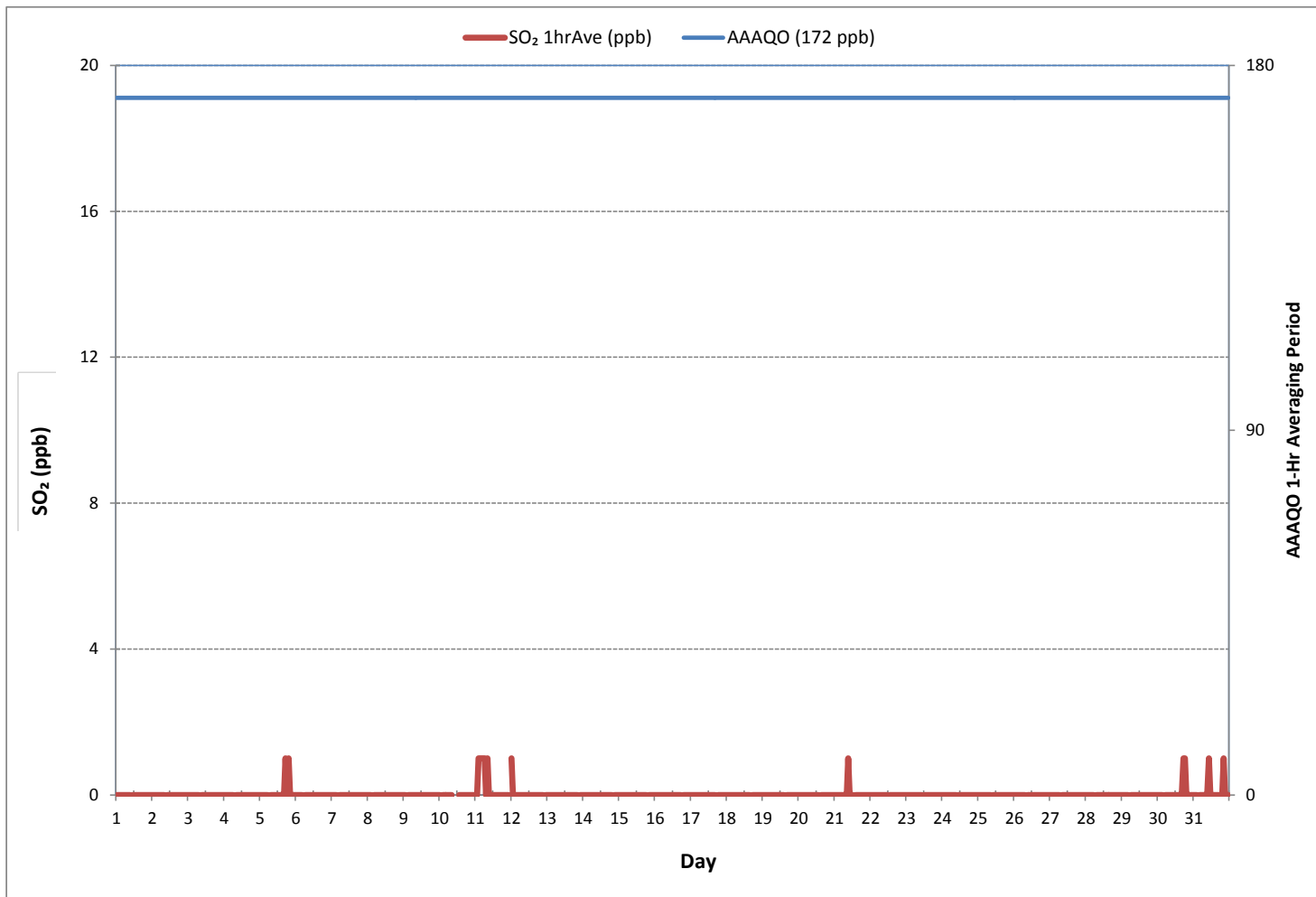
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	14
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 17 ON DAY 5
MAXIMUM 24-HR AVERAGE:	1 ppb 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
MONTHLY AVERAGE:	0 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b 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	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
2	1	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	1	0	24
3	0	0	0	0	0	0	0	0	S	0	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0	24
4	0	0	0	0	0	1	0	S	1	0	0	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0	1	0	24
5	0	0	0	0	0	0	S	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
6	0	1	1	0	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
7	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	24
8	0	0	0	S	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
9	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	24
10	1	S	0	0	0	0	0	0	0	C	C	C	C	0	1	1	1	1	0	1	1	1	1	1	0	1	1	24	
11	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	S	0	1	1	24	
12	2	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	0	0	1	1	S	0	0	2	1	24	
13	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	1	1	1	S	0	0	0	0	1	0	24
14	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	1	0	0	S	1	0	1	0	1	0	1	0	24
15	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	S	0	0	0	0	0	0	1	0	24
16	0	0	0	0	1	0	1	1	0	1	1	1	1	1	1	0	0	0	S	0	0	1	0	0	0	0	1	0	24
17	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0	24
18	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	24
19	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	1	1	1	1	0	1	0	24
20	1	0	0	0	0	0	1	1	1	0	1	1	0	0	S	0	0	0	1	0	1	0	1	0	0	0	1	0	24
21	0	0	0	0	0	0	0	1	1	1	0	0	0	S	1	0	1	1	1	1	0	0	0	0	0	0	1	0	24
22	0	0	0	0	0	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	24
23	1	1	0	1	0	1	0	0	0	0	0	S	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	24
24	1	1	0	0	1	1	1	1	1	1	S	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	24
25	0	0	0	1	0	0	0	0	0	S	1	0	0	1	0	1	0	0	1	0	1	1	0	0	0	0	1	0	24
26	0	1	0	0	0	0	1	S	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	1	0	1	0	24	
27	0	0	0	0	0	0	1	S	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	24
28	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	P	0	0	0	0	0	1	1	0	0	0	1	0	23
29	0	0	1	1	0	S	0	0	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	24
30	0	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	2	1	24
31	1	1	1	S	1	1	1	1	1	1	1	1	1	P	0	1	1	1	1	1	1	1	1	1	1	0	1	1	23
HOURLY MAX	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	1	1	
HOURLY AVG	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	1	

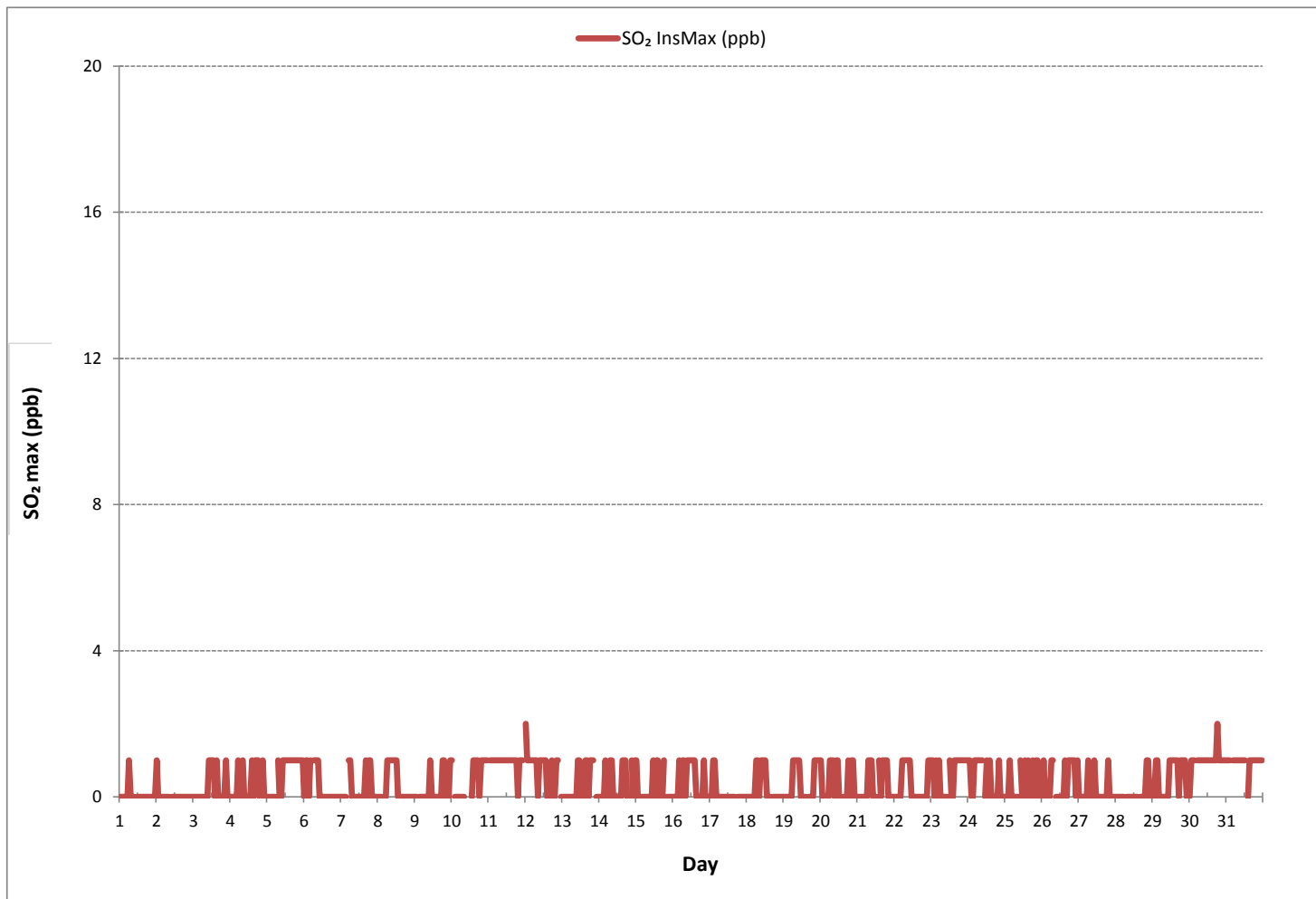
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	274
MAXIMUM INSTANTANEOUS VALUE:	2 ppb @ HOUR 0 ON DAY 12
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0
OPERATIONAL TIME:	742 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



Wind: PRAMP_842
 Poll.: PRAMP_842-SO2[ppb]
 Monthly: 17/05
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

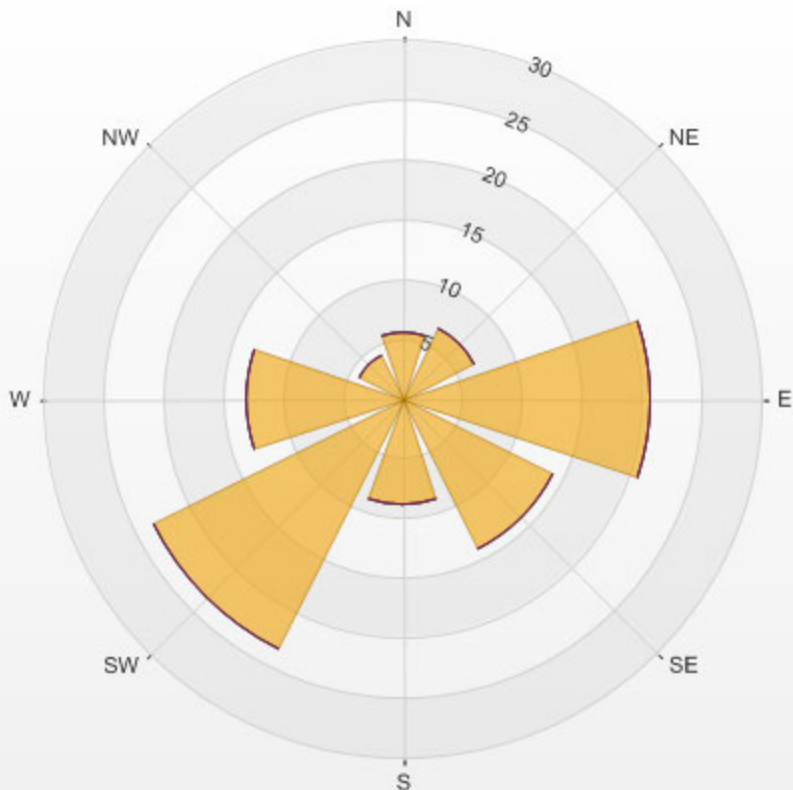
Calm: 3.40%

Calm Avg: 0.06 [ppb]

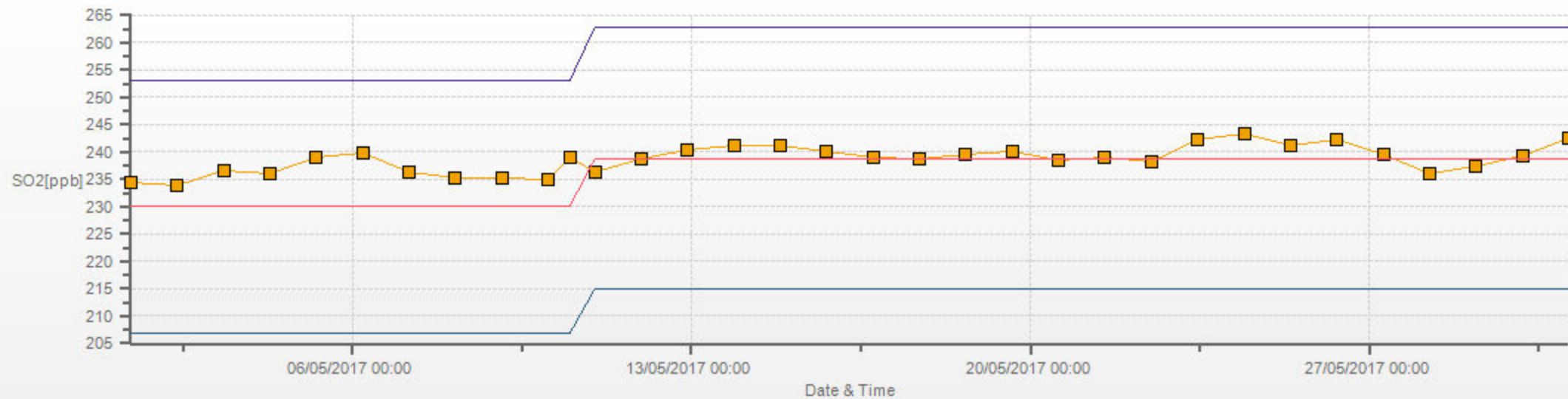
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	5.7	0.0	0.0	0.0	0.0	5.7
NE	6.7	0.0	0.0	0.0	0.0	6.7
E	20.7	0.0	0.0	0.0	0.0	20.7
SE	14.0	0.0	0.0	0.0	0.0	14.0
S	8.9	0.0	0.0	0.0	0.0	8.9
SW	23.4	0.0	0.0	0.0	0.0	23.4
W	13.2	0.0	0.0	0.0	0.0	13.2
NW	4.1	0.0	0.0	0.0	0.0	4.1
Summary	96.6	0.0	0.0	0.0	0.0	96.6

% Icon Classes (ppb) 97 0-3 0 3-10 0 10-85 0 85-170 0 >170.0

PRAMP_842 Poll.: PRAMP_842-SO2[ppb] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.40% Calm Poll Avg: 0.06[ppb]



SO2[ppb] Calibration: PRAMP_842 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR



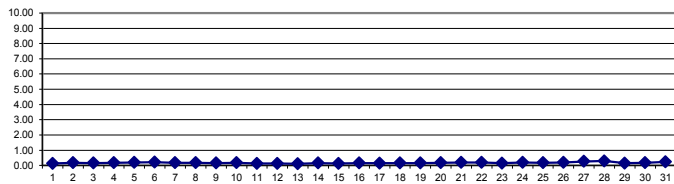
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.12	0.14	0.14	0.14	0.10	0.12	0.11	0.14	0.16	0.14	S	0.15	0.13	0.11	0.12	0.12	0.11	0.11	0.11	0.12	0.15	0.13	0.12	0.17	0.10	0.17	0.13	24	
2	0.16	0.16	0.22	0.24	0.19	0.32	0.32	0.27	0.18	S	0.17	0.14	0.15	0.14	0.14	0.13	0.13	0.14	0.14	0.14	0.16	0.16	0.17	0.14	0.13	0.32	0.18	24	
3	0.14	0.14	0.16	0.14	0.14	0.18	0.15	0.13	S	0.15	0.14	0.13	0.13	0.14	0.13	0.14	0.14	0.23	0.29	0.17	0.21	0.15	0.16	0.13	0.13	0.29	0.16	24	
4	0.13	0.16	0.15	0.20	0.31	0.31	0.32	S	0.21	0.13	0.15	0.19	0.14	0.11	0.12	0.10	0.11	0.10	0.11	0.15	0.18	0.24	0.26	0.10	0.32	0.17	24		
5	0.17	0.16	0.16	0.13	0.13	0.12	S	0.15	0.14	0.12	0.13	0.13	0.13	0.12	0.12	0.11	0.10	0.12	0.13	0.15	0.16	0.13	0.37	0.76	0.65	0.10	0.76	0.19	24
6	0.37	0.42	0.39	0.33	0.33	S	0.33	0.26	0.24	0.21	0.20	0.22	0.16	0.09	0.16	0.17	0.19	0.12	0.10	0.10	0.11	0.12	0.15	0.16	0.09	0.42	0.21	24	
7	0.16	0.15	0.17	0.13	S	0.20	0.16	0.20	0.18	0.18	0.17	0.20	0.18	0.16	0.17	0.15	0.17	0.16	0.20	0.17	0.20	0.23	0.25	0.22	0.13	0.25	0.18	24	
8	0.27	0.33	0.27	S	0.23	0.21	0.19	0.18	0.19	0.17	0.14	0.17	0.17	0.15	0.14	0.13	0.13	0.13	0.15	0.16	0.13	0.14	0.16	0.20	0.13	0.33	0.18	24	
9	0.16	0.31	S	0.19	0.22	0.22	0.19	0.20	0.19	0.18	0.17	0.16	0.14	0.11	0.11	0.11	0.10	0.10	0.08	0.09	0.12	0.13	0.18	0.33	0.08	0.33	0.16	24	
10	0.32	S	0.33	0.26	0.23	0.21	0.12	0.11	0.13	C	C	C	C	0.13	0.12	0.10	0.10	0.13	0.13	0.14	0.16	0.16	0.15	0.17	0.10	0.33	0.17	24	
11	S	0.18	0.18	0.17	0.15	0.14	0.16	0.15	0.13	0.11	0.12	0.13	0.12	0.12	0.11	0.12	0.12	0.13	0.13	0.12	0.13	0.12	0.13	S	0.11	0.18	0.13	24	
12	0.16	0.16	0.15	0.16	0.14	0.15	0.15	0.15	0.15	0.16	0.14	0.15	0.14	0.13	0.12	0.14	0.12	0.12	0.10	0.10	0.11	0.09	S	0.10	0.09	0.16	0.13	24	
13	0.10	0.11	0.12	0.12	0.10	0.10	0.09	0.10	0.09	0.11	0.09	0.10	0.10	0.09	0.10	0.11	0.10	0.08	0.10	0.12	0.11	S	0.14	0.15	0.08	0.15	0.11	24	
14	0.13	0.14	0.15	0.15	0.17	0.14	0.15	0.16	0.16	0.16	0.14	0.15	0.15	0.15	0.16	0.16	0.18	0.16	0.15	0.15	S	0.19	0.16	0.17	0.13	0.19	0.16	24	
15	0.18	0.14	0.14	0.13	0.14	0.16	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.11	0.11	0.12	S	0.16	0.15	0.12	0.14	0.11	0.18	0.13	24	
16	0.16	0.15	0.15	0.15	0.24	0.25	0.24	0.24	0.13	0.12	0.12	0.12	0.12	0.10	0.11	0.11	0.10	0.11	S	0.10	0.11	0.13	0.16	0.15	0.10	0.25	0.15	24	
17	0.18	0.17	0.19	0.20	0.20	0.17	0.13	0.11	0.12	0.12	0.11	0.12	0.12	0.12	0.12	0.12	0.12	S	0.13	0.13	0.13	0.16	0.15	0.15	0.11	0.20	0.14	24	
18	0.15	0.16	0.16	0.17	0.15	0.16	0.17	0.17	0.18	0.17	0.15	0.15	0.12	0.11	0.12	0.13	S	0.14	0.13	0.11	0.14	0.15	0.14	0.17	0.11	0.18	0.15	24	
19	0.18	0.16	0.17	0.17	0.16	0.19	0.17	0.15	0.15	0.14	0.13	0.11	0.10	0.10	0.11	S	0.12	0.11	0.11	0.11	0.12	0.16	0.20	0.30	0.18	0.10	0.30	0.15	24
20	0.16	0.17	0.22	0.20	0.21	0.23	0.20	0.21	0.20	0.17	0.18	0.15	0.11	0.12	S	0.12	0.11	0.11	0.11	0.14	0.14	0.20	0.36	0.38	0.11	0.38	0.18	24	
21	0.32	0.39	0.36	0.28	0.28	0.24	0.23	0.19	0.17	0.16	0.14	0.12	0.10	S	0.13	0.12	0.12	0.12	0.13	0.14	0.20	0.21	0.22	0.21	0.10	0.39	0.20	24	
22	0.29	0.20	0.22	0.24	0.27	0.29	0.29	0.26	0.25	0.22	0.19	0.16	S	0.17	0.16	0.16	0.16	0.14	0.16	0.13	0.13	0.15	0.14	0.16	0.13	0.29	0.20	24	
23	0.19	0.19	0.15	0.13	0.14	0.19	0.20	0.15	0.12	0.11	0.09	S	0.12	0.11	0.10	0.09	0.11	0.08	0.12	0.13	0.14	0.17	0.17	0.21	0.08	0.21	0.14	24	
24	0.31	0.57	0.27	0.28	0.24	0.23	0.21	0.19	0.18	0.19	S	0.17	0.15	0.15	0.16	0.13	0.12	0.13	0.12	0.14	0.15	0.15	0.16	0.16	0.12	0.57	0.20	24	
25	0.17	0.17	0.17	0.20	0.22	0.43	0.21	0.16	0.17	S	0.17	0.12	0.11	0.12	0.17	0.18	0.14	0.20	0.21	0.15	0.19	0.18	0.19	0.22	0.11	0.43	0.18	24	
26	0.24	0.25	0.28	0.28	0.27	0.31	0.32	0.24	S	0.15	0.13	0.12	0.09	0.08	0.08	0.09	0.11	0.12	0.14	0.12	0.14	0.16	0.18	0.39	0.08	0.39	0.19	24	
27	0.44	0.53	0.71	0.60	0.42	0.22	0.19	S	0.16	0.14	0.13	0.13	0.13	0.14	0.15	0.14	0.15	0.15	0.15	0.16	0.16	0.22	0.27	0.53	0.13	0.71	0.26	24	
28	0.60	0.74	0.73	0.81	0.77	0.52	S	0.22	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.14	0.15	0.17	0.13	0.81	0.29	24		
29	0.13	0.15	0.20	0.20	0.19	S	0.16	0.15	0.15	0.13	0.11	0.12	0.12	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.10	0.11	0.11	0.13	0.10	0.20	0.14	24	
30	0.13	0.13	0.14	0.17	S	0.18	0.17	0.17	0.18	0.16	0.17	0.16	0.15	0.16	0.16	0.16	0.18	0.17	0.17	0.18	0.19	0.19	0.19	0.20	0.13	0.20	0.17	24	
31	0.26	0.31	0.30	S	0.37	0.35	0.35	0.30	0.30	0.28	0.27	0.20	0.19	0.16	0.15	0.13	0.13	0.13	0.14	0.13	0.15	0.24	0.25	0.28	0.13	0.37	0.23	24	
HOURLY MAX	0.60	0.74	0.73	0.81	0.77	0.52	0.35	0.30	0.30	0.28	0.27	0.22	0.19	0.17	0.17	0.18	0.19	0.23	0.29	0.18	0.21	0.37	0.76	0.65					
HOURLY AVG	0.22	0.24	0.24	0.23	0.23	0.23	0.20	0.18	0.17	0.16	0.15	0.15	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.15	0.17	0.20	0.22					

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

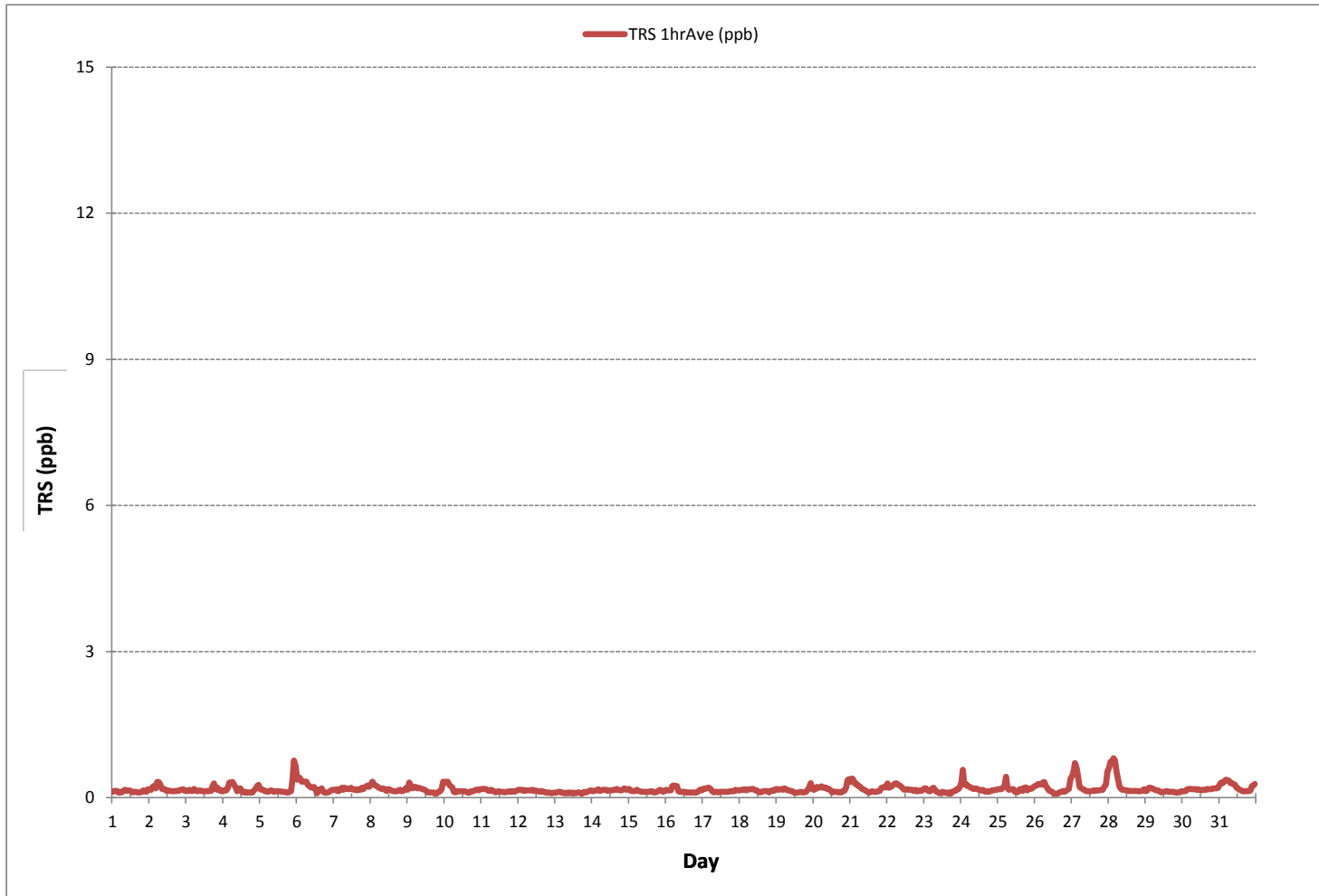
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	0.08	ppb @ HOUR	18	ON DAY 9
MAXIMUM 1-HR AVERAGE:	0.81	ppb @ HOUR	3	ON DAY 28
MAXIMUM 24-HR AVERAGE:	0.29	ppb		ON DAY 28
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.09		MONTHLY AVERAGE:	0.17 ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b 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	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	0.20	0.20	0.17	0.17	0.17	0.20	0.15	0.20	0.22	0.22	S	0.23	0.17	0.17	0.15	0.12	0.15	0.12	0.12	0.15	0.15	0.17	0.15	0.17	0.12	0.23	0.17	24	
2	0.20	0.20	0.25	0.25	0.20	0.38	0.41	0.28	0.22	S	0.22	0.12	0.17	0.15	0.15	0.12	0.12	0.15	0.14	0.15	0.15	0.17	0.20	0.17	0.12	0.41	0.20	24	
3	0.15	0.17	0.20	0.17	0.17	0.25	0.20	0.17	S	0.17	0.17	0.17	0.17	0.20	0.20	0.20	0.20	0.44	0.51	0.30	0.33	0.17	0.20	0.17	0.15	0.51	0.22	24	
4	0.17	0.25	0.20	0.33	0.41	0.36	0.46	S	0.43	0.17	0.23	0.23	0.23	0.17	0.15	0.17	0.17	0.15	0.15	0.15	0.23	0.25	0.33	0.36	0.15	0.46	0.25	24	
5	0.23	0.23	0.23	0.17	0.17	0.17	S	0.20	0.20	0.17	0.15	0.15	0.15	0.17	0.15	0.15	0.12	0.15	0.12	0.12	0.20	1.11	1.27	1.27	0.12	1.27	0.31	24	
6	0.46	0.51	0.46	0.36	0.46	S	0.41	0.28	0.26	0.20	0.25	0.25	0.20	0.08	0.17	0.23	0.17	0.17	0.12	0.09	0.12	0.15	0.17	0.07	0.51	0.25	24		
7	0.20	0.17	0.28	0.12	S	0.17	0.17	0.17	0.17	0.17	0.17	0.20	0.17	0.17	0.15	0.15	0.17	0.17	0.23	0.17	0.20	0.23	0.28	0.30	0.12	0.30	0.19	24	
8	0.30	0.38	0.38	S	0.22	0.22	0.20	0.17	0.20	0.20	0.15	0.20	0.20	0.17	0.15	0.14	0.15	0.20	0.17	0.20	0.15	0.17	0.23	0.14	0.38	0.21	24		
9	0.25	0.41	S	0.23	0.25	0.30	0.25	0.25	0.25	0.25	0.20	0.20	0.17	0.15	0.15	0.15	0.15	0.12	0.09	0.12	0.17	0.15	0.25	0.39	0.09	0.41	0.21	24	
10	0.38	S	0.41	0.33	0.33	0.33	0.17	0.17	0.17	C	C	C	C	0.17	0.25	0.12	0.12	0.22	0.17	0.15	0.20	0.17	0.17	0.22	0.12	0.41	0.22	24	
11	S	0.20	0.20	0.20	0.15	0.17	0.20	0.15	0.17	0.12	0.12	0.12	0.12	0.12	0.09	0.12	0.09	0.12	0.12	0.15	0.12	0.09	0.12	S	0.09	0.20	0.14	24	
12	0.12	0.15	0.12	0.12	0.12	0.12	0.15	0.17	0.17	0.12	0.12	0.15	0.15	0.12	0.12	0.12	0.12	0.12	0.12	0.09	0.09	0.09	S	0.09	0.09	0.17	0.12	24	
13	0.07	0.12	0.09	0.09	0.09	0.07	0.07	0.09	0.11	0.07	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.05	0.07	0.09	0.09	S	0.12	0.17	0.05	0.17	0.09	24
14	0.09	0.09	0.12	0.12	0.12	0.11	0.12	0.12	0.11	0.12	0.09	0.09	0.12	0.09	0.09	0.09	0.12	0.12	0.09	0.09	S	0.15	0.09	0.09	0.09	0.15	0.11	24	
15	0.12	0.09	0.07	0.09	0.09	0.15	0.09	0.07	0.05	0.07	0.09	0.05	0.07	0.05	0.07	0.07	0.05	0.05	0.07	S	0.09	0.09	0.07	0.07	0.05	0.15	0.08	24	
16	0.09	0.09	0.09	0.09	0.28	0.25	0.25	0.25	0.09	0.09	0.09	0.09	0.12	0.07	0.09	0.07	0.09	0.12	S	0.09	0.09	0.12	0.30	0.22	0.07	0.30	0.14	24	
17	0.20	0.17	0.20	0.20	0.15	0.17	0.09	0.07	0.09	0.09	0.07	0.07	0.09	0.09	0.09	0.12	S	0.09	0.09	0.09	0.09	0.12	0.09	0.12	0.07	0.20	0.12	24	
18	0.15	0.12	0.17	0.17	0.15	0.12	0.15	0.20	0.17	0.15	0.14	0.20	0.09	0.07	0.09	0.12	S	0.12	0.09	0.09	0.12	0.17	0.12	0.20	0.07	0.20	0.14	24	
19	0.36	0.15	0.15	0.12	0.17	0.20	0.17	0.12	0.12	0.12	0.07	0.09	0.09	0.09	0.07	S	0.09	0.07	0.07	0.09	0.17	0.41	0.64	0.28	0.07	0.64	0.17	24	
20	0.15	0.15	0.22	0.20	0.59	0.25	0.22	0.20	0.20	0.15	0.15	0.12	0.12	0.12	S	0.09	0.09	0.09	0.15	0.15	0.15	0.22	0.88	0.88	0.09	0.88	0.24	24	
21	0.54	0.57	0.54	0.36	0.46	0.28	0.25	0.20	0.17	0.15	0.15	0.12	0.17	S	0.12	0.12	0.12	0.12	0.15	0.15	0.33	0.25	0.22	0.20	0.12	0.57	0.25	24	
22	0.33	0.17	0.20	0.20	0.30	0.22	0.25	0.20	0.20	0.15	0.12	0.12	S	0.09	0.12	0.12	0.09	0.07	0.20	0.07	0.09	0.12	0.12	0.12	0.07	0.33	0.16	24	
23	0.22	0.17	0.15	0.09	0.15	0.22	0.20	0.15	0.09	0.12	0.09	S	0.15	0.07	0.07	0.07	0.07	0.07	0.14	0.07	0.12	0.28	0.17	0.78	0.07	0.78	0.16	24	
24	0.54	0.85	0.25	0.25	0.20	0.20	0.15	0.09	0.09	0.09	S	0.07	0.09	0.09	0.07	0.07	0.05	0.05	0.07	0.07	0.07	0.09	0.09	0.05	0.05	0.85	0.16	24	
25	0.12	0.12	0.12	0.20	0.25	0.54	0.20	0.12	0.12	S	0.14	0.05	0.07	0.07	0.25	0.22	0.12	0.36	0.15	0.23	0.59	0.25	0.15	0.22	0.05	0.59	0.20	24	
26	0.22	0.30	0.41	0.25	0.25	0.28	0.33	0.22	S	0.12	0.12	0.07	0.07	0.02	0.02	0.02	0.07	0.07	0.09	0.07	0.09	0.12	0.17	0.98	0.02	0.98	0.19	24	
27	1.03	0.85	1.29	1.03	0.62	0.17	0.15	S	0.15	0.09	0.07	0.07	0.07	0.05	0.09	0.07	0.09	0.12	0.12	0.09	0.12	0.43	0.57	0.78	0.05	1.29	0.35	24	
28	1.14	0.90	0.95	1.00	0.90	0.67	S	0.20	0.12	0.09	0.12	0.09	0.09	0.09	0.12	P	0.07	0.07	0.09	0.09	0.09	0.12	0.15	0.15	0.07	1.14	0.33	23	
29	0.09	0.12	0.20	0.20	0.17	S	0.15	0.12	0.12	0.12	0.09	0.09	0.12	0.12	0.09	0.12	0.12	0.12	0.12	0.12	0.12	0.15	0.09	0.12	0.12	0.09	0.20	0.13	24
30	0.12	0.15	0.20	0.20	S	0.17	0.17	0.17	0.17	0.15	0.12	0.15	0.12	0.12	0.12	0.12	0.15	0.12	0.12	0.12	0.12	0.15	0.15	0.12	0.12	0.20	0.14	24	
31	0.22	0.30	0.28	S	0.36	0.33	0.33	0.22	0.25	0.20	0.22	0.17	0.12	P	0.07	0.05	0.04	0.02	0.07	0.05	0.07	0.17	0.17	0.38	0.02	0.38	0.19	23	
HOURLY MAX	1.14	0.90	1.29	1.03	0.90	0.67	0.46	0.28	0.43	0.25	0.25	0.25	0.23	0.20	0.25	0.23	0.20	0.44	0.51	0.30	0.59	1.11	1.27	1.27					
HOURLY AVG	0.28	0.28	0.29	0.25	0.27	0.24	0.21	0.17	0.17	0.14	0.14	0.13	0.13	0.11	0.12	0.12	0.11	0.13	0.13	0.12	0.16	0.21	0.26	0.32					

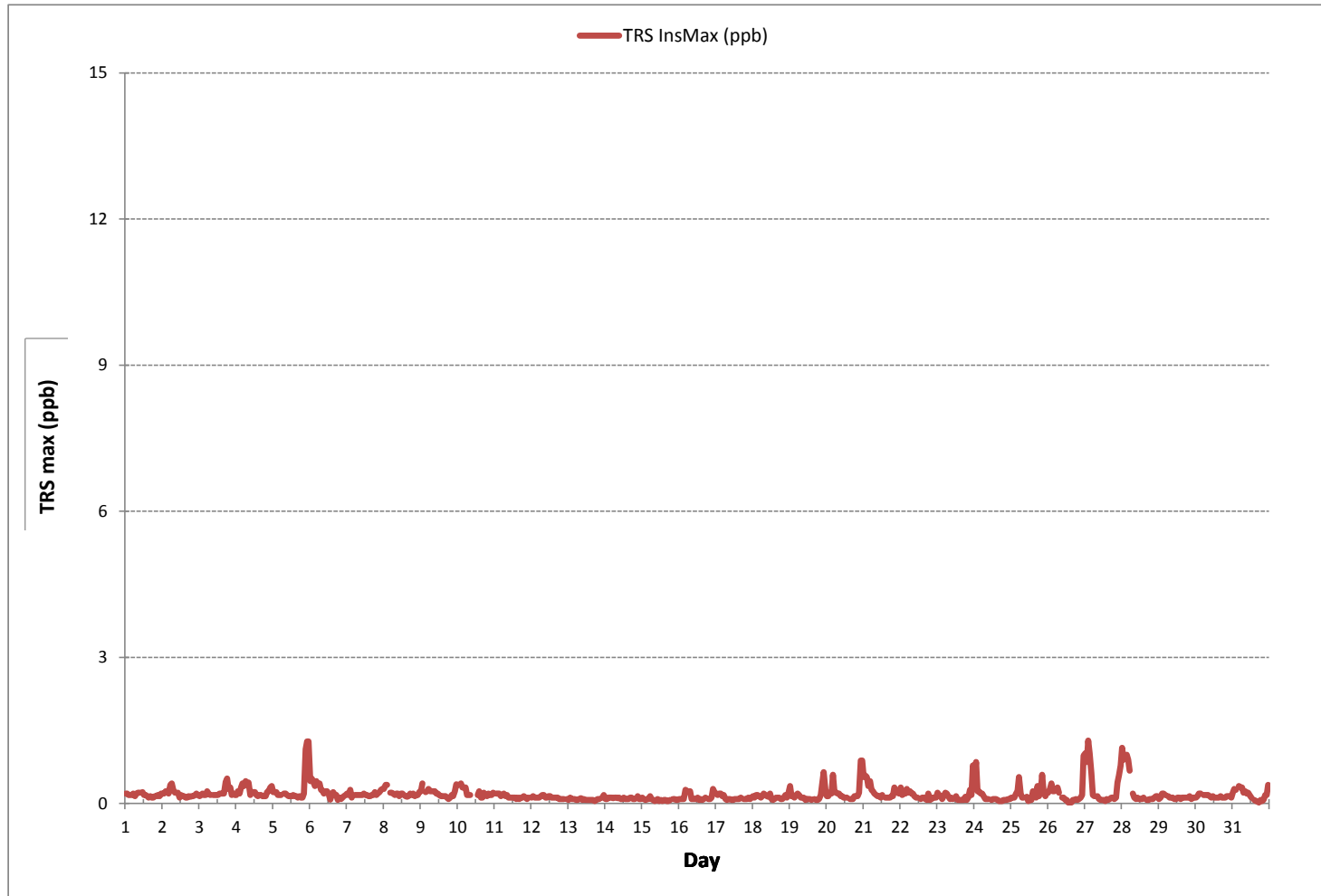
STATUS FLAG CODES

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:	706
MAXIMUM INSTANTANEOUS VALUE:	1.29 ppb @ HOUR 2 ON DAY 27
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	742 hrs
STANDARD DEVIATION:	0.16

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



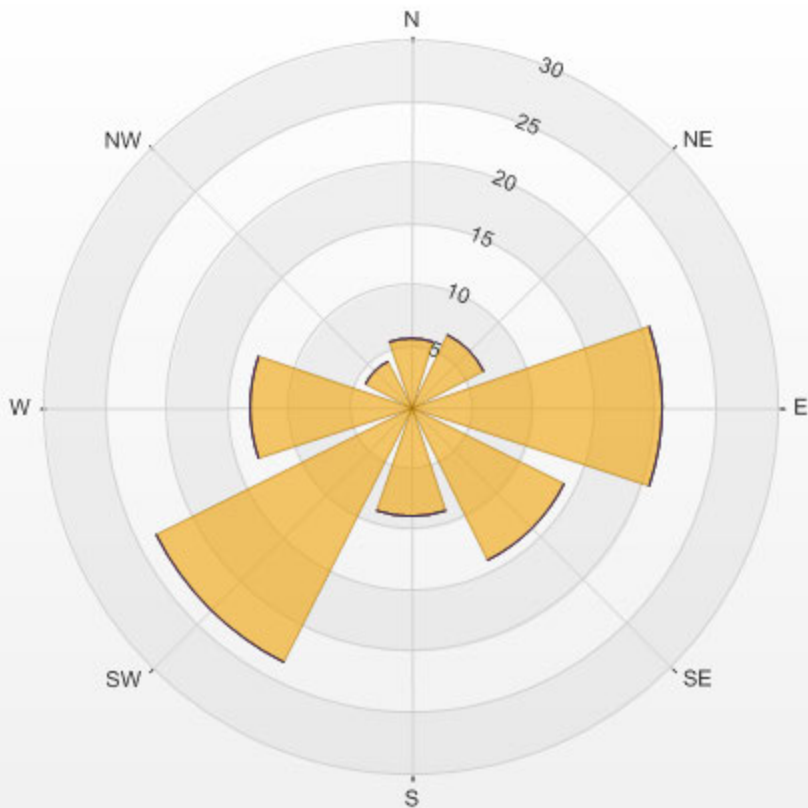
Wind: PRAMP_842
Poll.: PRAMP_842-TRS[ppb]
Monthly: 17/05
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 3.40% Calm Avg: 0.27 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	5.7	0.0	0.0	0.0	5.7
NE	6.7	0.0	0.0	0.0	6.7
E	20.7	0.0	0.0	0.0	20.7
SE	14.0	0.0	0.0	0.0	14.0
S	8.9	0.0	0.0	0.0	8.9
SW	23.4	0.0	0.0	0.0	23.4
W	13.2	0.0	0.0	0.0	13.2
NW	4.1	0.0	0.0	0.0	4.1
Summary	96.6	0.0	0.0	0.0	96.6

% Icon Classes (ppb) 97 0-1 0 1-3 0 3-10 0 >10.0

PRAMP_842 Poll.: PRAMP_842-TRS[ppb] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.40% Calm Poll Avg: 0.27[ppb]



TRS[ppb] Calibration: PRAMP_842 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON



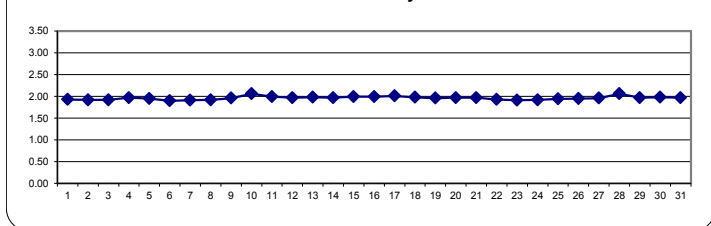
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.91	1.91	1.93	1.94	1.95	2.00	2.06	1.95	1.93	1.92	S	1.93	1.92	1.92	1.92	1.91	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.91	2.06	1.93	24	
2	1.91	1.91	1.93	1.96	1.98	1.91	1.92	1.91	1.91	S	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.91	1.91	1.91	1.93	1.93	1.92	1.96	1.90	1.98	1.92	24	
3	1.99	1.97	1.96	1.94	1.93	1.93	1.94	1.96	S	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.91	1.91	1.90	1.90	1.92	1.90	1.99	1.92	24	
4	1.91	1.91	1.91	1.91	1.92	1.92	1.92	S	1.91	1.90	1.90	1.91	1.92	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.93	2.03	2.35	2.61	1.90	2.61	1.97	24	
5	2.13	2.10	2.13	2.02	2.02	1.94	S	1.96	1.94	1.92	1.92	1.93	1.94	1.94	1.92	1.90	1.89	1.90	1.89	1.88	1.88	1.88	1.90	1.92	1.88	2.13	1.95	24	
6	1.91	1.87	1.87	1.88	1.88	S	1.91	1.92	1.92	1.90	1.89	1.90	1.90	1.91	1.90	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.91	1.92	1.87	1.92	1.90	24	
7	1.92	1.91	1.91	1.91	S	1.91	1.92	1.92	1.91	1.91	1.90	1.91	1.90	1.90	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.93	1.92	1.90	1.93	24	
8	1.92	1.92	1.91	S	1.94	1.94	1.93	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.94	1.93	1.91	1.95	1.92	24	
9	1.92	1.91	S	1.93	1.94	1.95	1.94	1.94	1.94	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.93	1.92	1.92	1.91	1.92	1.92	2.01	2.51	1.91	2.51	1.96	24	
10	2.52	S	2.50	2.32	2.19	2.08	1.96	1.95	1.94	1.94	1.93	1.91	C	C	C	C	1.95	1.95	1.96	1.96	1.99	1.98	2.01	2.06	1.91	2.52	2.06	24	
11	S	2.02	2.07	2.04	2.01	1.99	2.00	1.99	1.99	1.98	1.97	1.98	1.98	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.98	2.00	1.98	S	1.96	2.07	1.99	24	
12	1.98	1.98	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.97	1.96	1.98	24	
13	1.97	1.98	2.00	1.99	1.99	1.98	1.99	1.98	1.96	1.96	1.96	1.96	1.98	1.97	1.97	1.97	1.97	1.97	1.98	2.00	1.98	S	1.97	1.96	1.96	2.00	1.98	24	
14	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.94	1.95	S	2.00	1.96	1.98	1.94	2.00	1.97	24	
15	2.08	1.99	1.97	1.97	1.98	2.06	2.03	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.98	S	1.97	1.98	1.98	1.99	1.97	2.08	1.99	24	
16	2.00	1.99	2.00	1.99	1.99	1.99	2.00	1.99	1.98	1.98	1.97	1.98	1.98	1.97	1.98	1.98	1.97	1.98	S	1.97	1.99	1.99	2.00	2.04	1.97	2.04	1.99	24	
17	2.14	2.18	2.13	2.14	2.10	2.02	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	S	1.96	1.96	1.96	1.97	1.98	1.98	1.96	2.18	2.01	24	
18	2.00	2.00	1.99	1.98	1.98	1.99	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.97	S	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.95	2.00	1.98	24	
19	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.96	1.95	1.94	1.94	1.94	S	1.94	1.94	1.95	1.96	1.96	1.95	1.95	1.98	1.94	1.98	1.96	24	
20	2.00	1.99	1.99	1.97	1.97	1.98	1.99	1.97	1.96	1.97	1.96	1.95	1.95	1.95	S	1.94	1.94	1.94	1.95	1.95	1.95	1.97	1.98	1.99	1.94	2.00	1.97	24	
21	1.98	2.02	2.08	2.08	2.04	2.02	2.05	1.98	1.97	1.97	1.96	1.95	1.95	S	1.94	1.93	1.93	1.93	1.93	1.93	1.95	1.96	1.94	1.93	1.93	2.08	1.97	24	
22	1.93	1.94	1.95	1.95	1.95	1.96	1.96	1.96	1.94	1.93	1.93	1.93	S	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.92	1.93	1.91	1.96	1.93	24	
23	1.93	1.92	1.91	1.91	1.91	1.94	1.93	1.93	1.91	1.91	1.90	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.91	1.90	1.92	1.89	1.94	1.91	24	
24	1.90	1.89	1.89	1.89	1.89	1.90	1.91	1.92	1.93	1.93	S	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.89	1.94	1.92	24
25	1.93	1.93	1.94	1.93	1.94	1.98	1.95	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.93	1.93	1.95	1.95	1.96	1.93	1.98	1.94	24	
26	1.97	1.97	1.98	1.99	1.98	1.99	2.00	1.97	S	1.95	1.94	1.93	1.94	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.92	1.93	1.93	1.96	1.92	2.00	1.95	24
27	1.96	1.97	1.99	2.04	2.02	1.96	1.96	S	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.98	1.95	2.04	1.96	24
28	2.13	2.43	2.53	2.31	2.28	2.13	S	1.99	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.98	1.97	1.96	1.96	1.96	1.96	1.98	1.99	1.99	1.96	2.53	2.06	24	
29	2.00	2.00	1.99	2.00	2.00	S	1.99	1.99	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.97	1.97	1.96	1.96	1.97	1.98	1.98	1.95	2.00	1.97	24	
30	2.00	1.99	1.99	2.00	S	2.01	2.00	1.99	1.99	1.99	1.98	1.97	1.95	1.95	1.96	1.97	1.99	2.00	1.97	1.96	1.97	2.00	2.00	1.99	1.95	2.01	1.98	24	
31	1.97	2.01	2.06	S	2.08	2.09	2.09	2.04	2.00	1.98	1.98	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.91	1.93	1.94	1.96	1.90	2.09	1.97	24	
HOURLY MAX	2.52	2.43	2.53	2.32	2.28	2.13	2.09	2.04	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.98	1.99	2.00	1.98	2.00	1.99	2.03	2.35	2.61					
HOURLY AVG	2.00	1.99	2.01	2.00	1.99	1.98	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.97	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

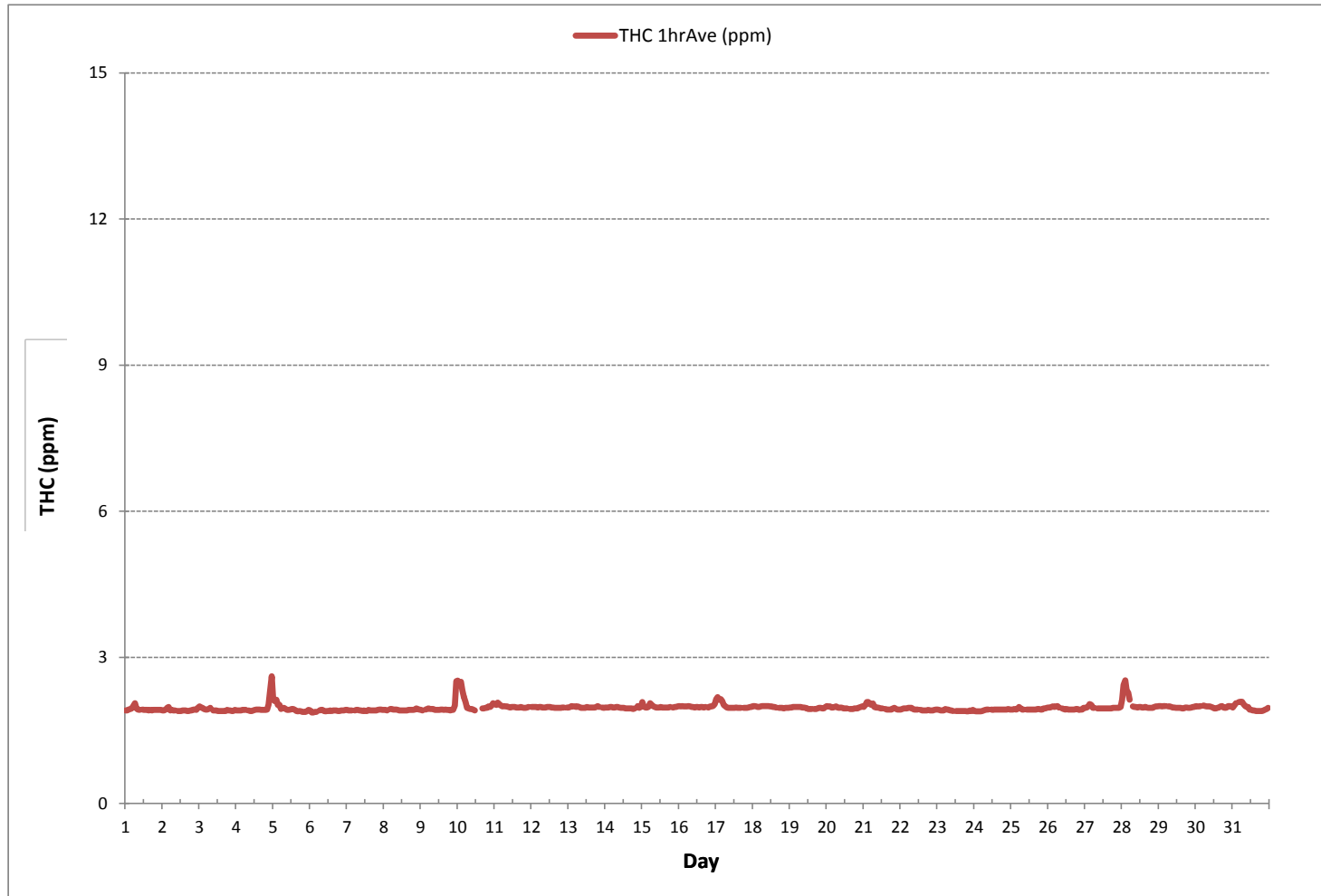
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	1	ON DAY 6
MAXIMUM 1-HR AVERAGE:	2.61 ppm	@ HOUR	23	ON DAY 4
MAXIMUM 24-HR AVERAGE:	2.06 ppm			ON DAY 10
IZS CALIBRATION TIME:	32 hrs	OPERATIONAL TIME:	744 hrs	
MONTHLY CALIBRATION TIME:	4 hrs	AMD OPERATION UPTIME:	100.0 %	
STANDARD DEVIATION:	0.07	MONTHLY AVERAGE:	1.96 ppm	

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b 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 MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY 1	1.93	1.92	1.98	1.98	1.98	2.07	2.11	2.02	1.94	1.92	S	1.94	1.93	1.97	1.92	1.93	1.92	1.92	1.96	1.93	1.92	1.92	1.92	1.93	1.92	2.11	1.95	24	
2	1.94	1.93	1.98	2.01	2.00	1.97	1.96	1.93	1.93	S	1.91	1.92	1.90	1.97	1.92	1.92	1.91	1.91	1.91	1.92	1.97	1.98	1.92	1.99	1.90	2.01	1.94	24	
3	2.01	2.02	1.98	2.01	1.96	1.96	1.99	2.00	S	1.94	1.92	1.92	1.91	1.96	1.91	1.91	1.90	1.91	2.01	1.93	1.91	1.91	1.91	1.95	1.90	2.02	1.95	24	
4	1.91	1.92	1.94	1.92	1.93	1.94	1.97	S	1.94	1.91	1.93	1.92	1.93	1.93	1.93	2.05	1.93	1.93	1.92	1.93	2.11	2.20	2.85	3.07	1.91	3.07	2.04	24	
5	2.56	2.25	2.18	2.14	2.09	2.00	S	2.01	2.00	1.98	1.97	1.94	2.02	1.97	1.95	2.01	1.91	1.90	1.89	1.88	2.00	1.95	1.97	1.96	1.88	2.56	2.02	24	
6	1.95	1.89	1.88	1.88	1.89	S	2.08	1.93	1.93	1.91	1.90	2.01	1.92	2.05	1.90	1.91	1.92	1.91	1.92	1.94	1.92	1.93	1.94	1.88	2.08	1.93	24		
7	1.94	1.93	1.92	1.94	S	1.95	1.92	1.96	1.92	2.00	1.91	1.93	1.91	1.93	1.94	1.93	1.93	1.92	1.91	1.92	1.94	1.92	1.93	1.94	1.91	2.00	1.94	24	
8	1.94	1.94	1.93	S	1.97	1.96	1.95	1.98	1.93	1.93	1.92	1.96	1.92	2.09	1.92	1.92	1.94	1.93	1.92	1.92	1.98	1.97	1.96	1.96	1.92	2.09	1.95	24	
9	1.94	1.93	S	1.97	1.96	1.96	1.95	1.95	1.96	1.93	1.94	1.92	1.94	1.95	2.07	1.93	2.34	1.92	1.96	1.96	1.93	1.93	2.19	3.08	1.92	3.08	2.03	24	
10	2.85	S	2.68	2.44	2.30	2.19	2.00	1.97	1.96	1.95	1.98	1.92	C	C	C	C	1.96	1.97	1.98	2.00	2.04	2.02	2.15	2.14	1.92	2.85	2.13	24	
11	S	2.06	2.16	2.07	2.06	2.03	2.02	2.02	2.03	2.05	1.99	2.00	2.00	2.00	1.98	1.99	1.99	1.99	1.99	1.98	1.97	1.99	1.99	S	1.97	2.16	2.02	24	
12	2.00	2.00	2.00	2.10	1.99	2.00	2.00	1.99	1.98	2.02	2.01	1.99	1.99	2.00	1.98	1.97	1.97	1.97	1.97	1.98	1.98	1.97	S	1.99	1.97	2.10	1.99	24	
13	2.08	2.02	2.02	2.01	2.10	2.00	2.01	2.12	1.98	1.98	1.98	1.98	1.99	2.11	1.98	1.98	1.98	1.98	2.06	2.03	2.04	S	1.98	1.98	1.98	2.12	2.02	24	
14	1.98	2.01	1.99	1.99	1.99	1.98	1.98	2.00	2.00	1.99	1.98	1.98	1.97	1.97	1.97	1.96	1.97	1.96	1.96	1.97	S	2.07	1.98	2.06	1.96	2.07	1.99	24	
15	2.16	2.04	1.99	1.99	2.03	2.14	2.08	2.01	2.12	1.99	1.98	1.99	2.01	1.99	1.99	1.98	1.99	1.98	1.99	S	1.99	1.99	1.99	2.01	1.98	2.16	2.02	24	
16	2.01	2.01	2.01	2.06	2.01	2.00	2.09	2.00	2.00	1.99	1.99	2.01	1.99	1.99	1.99	2.11	1.99	2.02	S	2.00	2.02	2.01	2.02	2.19	1.99	2.19	2.02	24	
17	2.50	2.37	2.18	2.31	2.15	2.06	2.01	1.98	1.98	1.97	1.97	1.98	1.97	2.13	1.97	1.98	1.97	S	1.97	1.97	1.98	2.00	2.00	1.99	1.97	2.50	2.06	24	
18	2.01	2.02	2.02	2.00	1.99	2.04	2.01	2.02	2.01	2.01	2.03	2.01	1.99	1.99	1.98	S	1.98	S	1.97	1.97	1.98	1.97	1.97	1.98	2.00	1.97	2.04	2.00	24
19	1.99	1.98	1.99	1.99	2.00	1.99	1.99	1.99	1.99	1.98	1.98	1.97	1.96	1.94	1.95	S	1.95	1.96	1.95	1.99	1.98	1.98	1.96	2.02	1.94	2.02	1.98	24	
20	2.04	2.08	2.02	1.99	1.98	2.01	2.03	1.98	1.98	1.98	1.97	1.97	1.97	1.96	S	1.95	1.98	2.00	1.99	1.98	2.00	2.01	1.99	2.14	1.95	2.14	2.00	24	
21	2.01	2.14	2.24	2.19	2.09	2.05	2.08	2.01	1.98	1.98	1.97	1.98	1.96	S	1.96	1.93	1.93	1.93	2.13	2.01	2.00	1.97	1.95	1.96	1.93	2.24	2.02	24	
22	1.95	1.95	2.02	1.97	1.97	2.00	1.97	1.97	1.96	1.93	1.94	1.93	S	1.92	1.92	1.91	1.92	1.92	1.93	1.91	1.91	1.92	1.93	1.93	1.91	2.02	1.94	24	
23	1.95	1.96	1.93	1.93	1.92	1.99	1.99	1.97	1.92	1.92	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.90	1.91	1.92	1.91	1.94	1.90	1.99	1.93	24
24	1.96	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	2.10	S	1.93	1.93	1.93	1.95	1.93	1.95	1.96	1.95	1.95	1.95	1.96	1.97	1.95	1.91	2.10	1.94	24	
25	1.94	1.95	2.02	1.94	1.99	2.02	2.11	1.97	1.95	S	1.96	1.96	1.94	1.97	1.95	1.97	1.94	1.97	1.97	1.98	2.03	1.97	1.96	1.97	1.94	2.11	1.98	24	
26	1.99	1.99	2.00	1.99	2.00	2.01	2.12	1.99	S	1.96	1.96	1.95	1.95	2.03	1.94	1.95	1.96	1.94	1.96	1.94	1.94	1.95	1.94	1.98	1.94	2.12	1.98	24	
27	1.98	1.99	2.03	2.10	2.08	1.98	1.97	S	1.96	1.96	1.97	1.98	1.96	1.96	1.96	2.10	1.96	1.97	1.97	1.96	1.97	1.98	1.98	2.00	1.96	2.10	1.99	24	
28	2.39	2.60	2.75	2.50	2.34	2.29	S	2.00	2.08	2.00	1.99	1.99	1.99	1.98	1.99	P	2.00	1.99	1.97	1.99	2.00	1.99	2.02	1.99	1.97	2.75	2.13	23	
29	2.03	2.04	2.00	2.01	2.02	S	2.00	2.00	2.00	1.99	1.98	1.97	2.12	1.97	1.97	1.97	1.96	1.98	2.03	2.03	1.97	2.13	2.00	2.01	1.96	2.13	2.01	24	
30	2.01	2.01	2.00	2.01	S	2.01	2.01	2.00	2.00	2.13	1.99	1.98	1.97	1.96	2.00	1.99	2.01	2.15	1.99	1.98	1.99	2.01	2.03	2.01	1.96	2.15	2.01	24	
31	1.99	2.15	2.17	S	2.19	2.12	2.25	2.09	2.02	2.00	2.00	1.97	1.93	P	1.92	1.92	1.92	1.92	1.91	1.92	1.93	2.10	2.03	2.12	1.91	2.25	2.03	23	
HOURLY MAX	2.85	2.60	2.75	2.50	2.34	2.29	2.25	2.12	2.12	2.13	2.01	2.03	2.12	2.13	2.07	2.11	2.34	2.15	2.13	2.03	2.11	2.20	2.85	3.08					
HOURLY AVG	2.06	2.03	2.06	2.05	2.03	2.02	2.02	1.99	1.98	1.98	1.96	1.96	1.96	1.98	1.96	1.96	1.96	1.96	1.97	1.96	1.98	1.99	2.01	2.07					

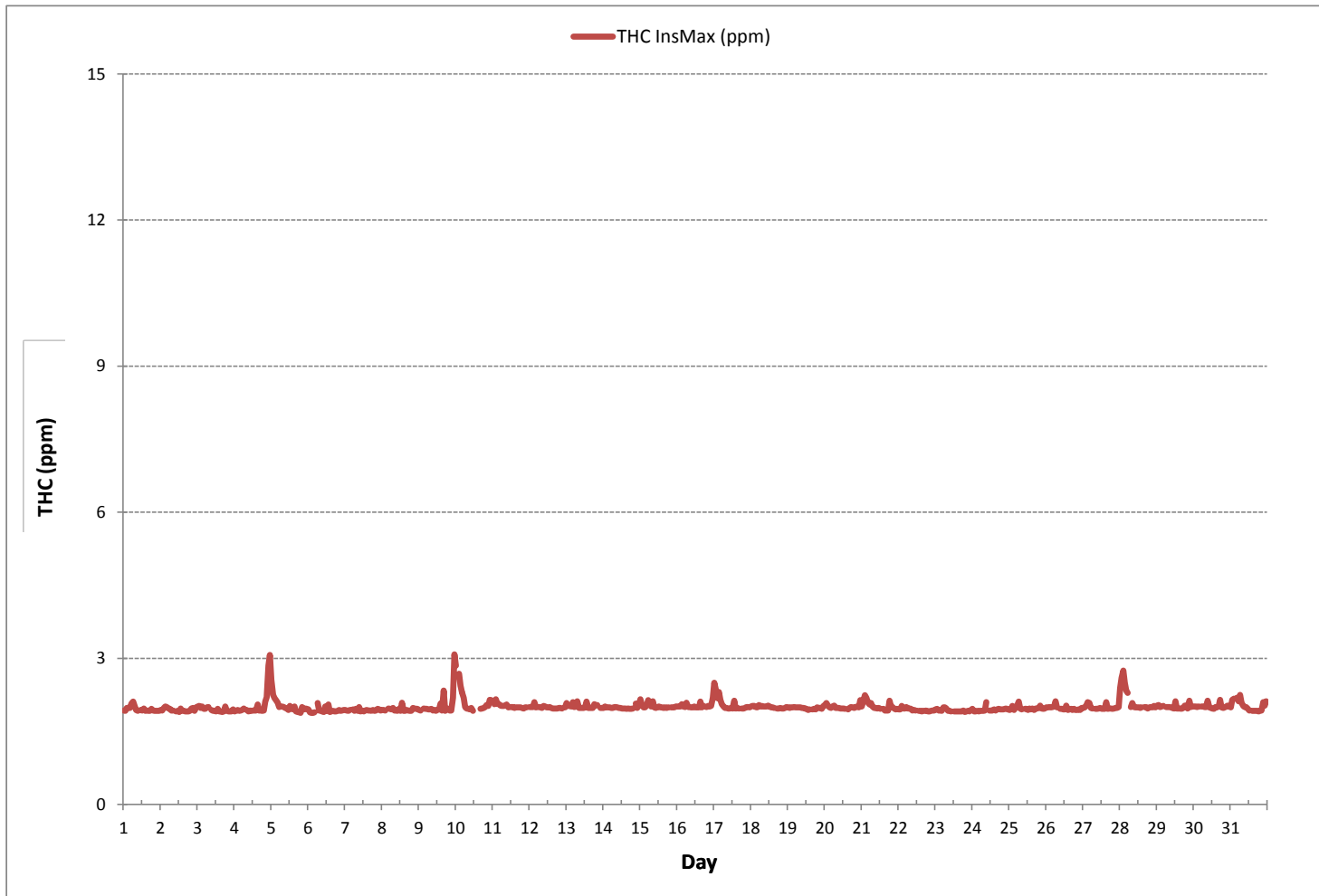
STATUS FLAG CODES

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:	706
MAXIMUM INSTANTANEOUS VALUE:	3.08 ppm @ HOUR 23 ON DAY 9
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	742 hrs
STANDARD DEVIATION:	0.12

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-THC55[ppm]
 Monthly: 17/05
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

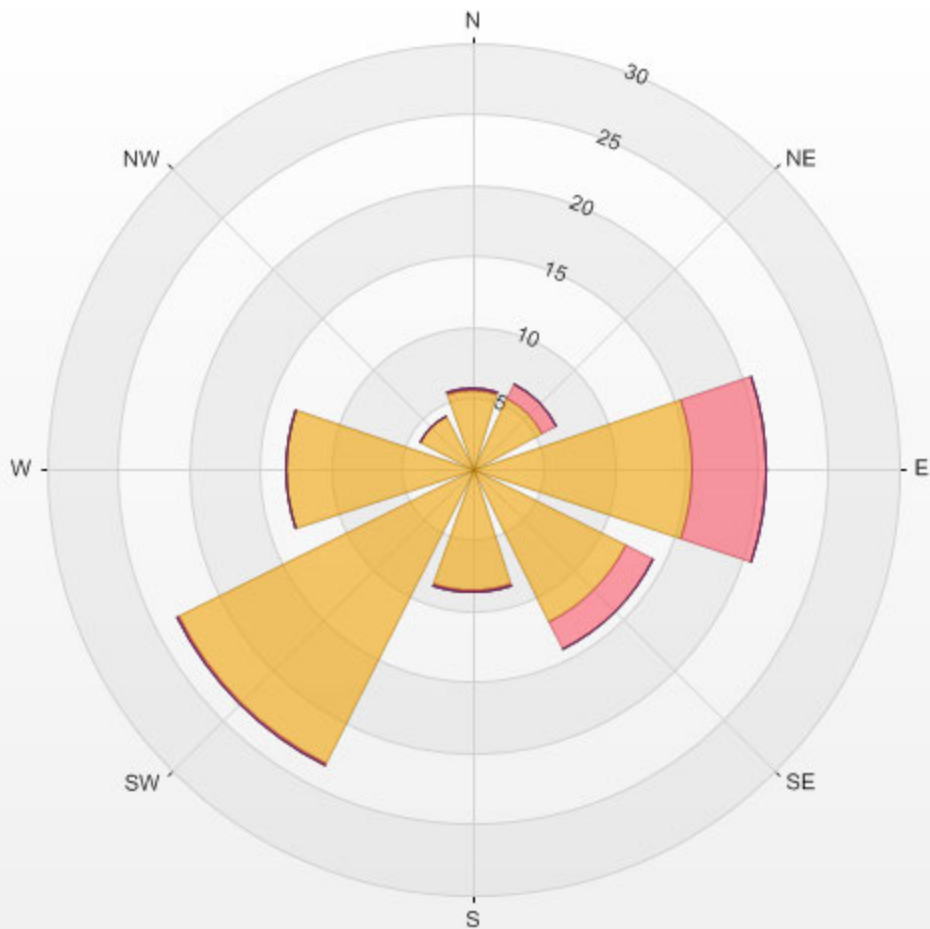
Calm: 3.40%

Calm Avg: 1.98 [ppm]

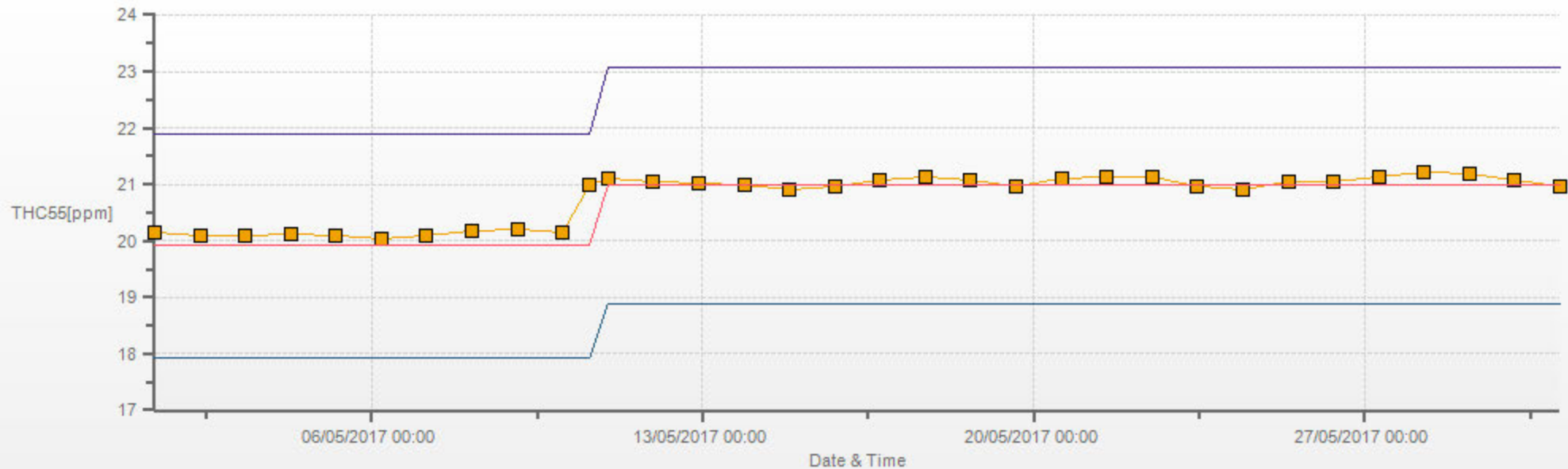
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	5.5	0.1	0.0	0.0	0.0	5.7
NE	5.5	1.1	0.0	0.0	0.0	6.7
E	15.4	5.2	0.0	0.0	0.0	20.7
SE	12.2	2.0	0.0	0.0	0.0	14.2
S	8.6	0.1	0.0	0.0	0.0	8.8
SW	23.2	0.1	0.0	0.0	0.0	23.4
W	13.2	0.0	0.0	0.0	0.0	13.2
NW	4.1	0.0	0.0	0.0	0.0	4.1
Summary	87.8	8.8	0.0	0.0	0.0	96.6

% Icon	Classes (ppm)	88	9	0	0	0
		0-2	2-3	3-5	5-10	>10.0

PRAMP_842 Poll.: PRAMP_842-THC55[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.40% Calm Poll Avg: 1.98[ppm]



THC55[ppm] Calibration: PRAMP_842 Monthly: 17/05 Type: Span



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

METHANE



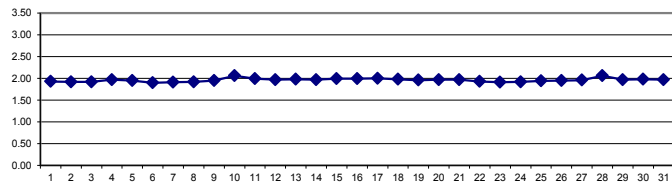
METHANE Hourly Averages (CH₄ ppm)

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	1.91	1.91	1.93	1.94	1.95	2.00	2.06	1.95	1.93	1.92	S	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	2.06	1.93	24
2	1.91	1.91	1.93	1.96	1.98	1.91	1.92	1.91	1.91	S	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.91	1.93	1.93	1.92	1.96	1.90	1.98	1.92	24
3	1.99	1.97	1.96	1.94	1.93	1.93	1.94	1.96	S	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.91	1.91	1.90	1.90	1.92	1.90	1.99	1.92	24	
4	1.91	1.91	1.91	1.91	1.92	1.92	1.92	S	1.91	1.90	1.90	1.91	1.92	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	2.03	2.35	2.60	1.90	2.60	1.97	24	
5	2.13	2.10	2.13	2.02	2.02	1.94	S	1.96	1.94	1.92	1.92	1.93	1.94	1.94	1.92	1.90	1.89	1.90	1.89	1.88	1.88	1.88	1.90	1.92	1.88	2.13	1.95	24	
6	1.91	1.87	1.87	1.88	1.88	S	1.91	1.92	1.92	1.90	1.89	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.91	1.92	1.87	1.92	1.90	24	
7	1.92	1.91	1.90	1.91	S	1.91	1.92	1.92	1.91	1.91	1.90	1.91	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.93	1.92	1.90	1.93	1.91	24
8	1.92	1.92	1.91	S	1.94	1.94	1.93	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.95	1.94	1.93	1.91	1.95	1.92	24	
9	1.91	1.91	S	1.93	1.94	1.95	1.94	1.94	1.94	1.92	1.91	1.92	1.92	1.93	1.93	1.92	1.93	1.92	1.92	1.91	1.91	1.92	2.01	2.45	1.91	2.45	1.95	24	
10	2.51	S	2.50	2.32	2.19	2.08	1.96	1.95	1.94	1.94	1.92	1.91	C	C	C	C	1.95	1.95	1.96	1.96	1.99	1.98	2.01	2.06	1.91	2.51	2.06	24	
11	S	2.02	2.07	2.04	2.01	1.99	2.00	1.99	1.99	1.98	1.97	1.98	1.98	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.98	2.00	1.98	S	1.96	2.07	1.99	24	
12	1.98	1.98	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.97	1.96	1.98	1.97	24
13	1.97	1.98	2.00	1.99	1.99	1.98	1.99	1.97	1.96	1.96	1.96	1.96	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.98	2.00	1.98	S	1.97	1.96	1.96	2.00	1.98	24
14	1.97	1.97	1.97	1.98	1.98	1.97	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.94	1.95	S	2.00	1.96	1.98	1.94	2.00	1.97	24	
15	2.08	1.99	1.97	1.97	1.98	2.06	2.03	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.98	S	1.97	1.98	1.98	1.99	1.97	2.08	1.99	24	
16	2.00	1.99	2.00	1.99	1.99	1.99	2.00	1.99	1.98	1.98	1.97	1.97	1.98	1.97	1.98	1.98	1.97	1.98	S	1.97	1.99	1.99	2.00	2.04	1.97	2.04	1.99	24	
17	2.14	2.18	2.13	2.13	2.10	2.02	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.97	1.98	1.98	1.98	1.96	2.18	2.00	24	
18	2.00	2.00	1.99	1.98	1.98	1.99	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.97	S	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.95	2.00	1.98	24	
19	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.96	1.95	1.94	1.94	1.94	S	1.94	1.94	1.95	1.96	1.96	1.95	1.95	1.98	1.94	1.98	1.96	24	
20	2.00	1.99	1.99	1.97	1.97	1.98	1.99	1.97	1.96	1.97	1.96	1.95	1.95	1.95	S	1.94	1.94	1.94	1.95	1.95	1.95	1.97	1.98	1.99	1.94	2.00	1.97	24	
21	1.98	2.02	2.08	2.08	2.04	2.02	2.05	1.98	1.97	1.97	1.96	1.95	1.95	S	1.94	1.93	1.93	1.93	1.93	1.93	1.95	1.96	1.94	1.93	1.93	2.08	1.97	24	
22	1.93	1.94	1.95	1.95	1.95	1.96	1.96	1.96	1.94	1.93	1.93	S	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.93	1.91	1.96	1.93	24	
23	1.93	1.92	1.91	1.91	1.91	1.94	1.93	1.93	1.91	1.91	1.90	S	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.91	1.90	1.92	1.89	1.94	1.91	24	
24	1.90	1.89	1.89	1.89	1.89	1.90	1.91	1.92	1.93	1.92	S	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.89	1.94	1.92	24
25	1.93	1.93	1.93	1.93	1.94	1.98	1.94	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.95	1.95	1.96	1.93	1.98	1.94	24
26	1.97	1.97	1.98	1.99	1.98	1.99	2.00	1.97	S	1.95	1.94	1.93	1.94	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.92	1.93	1.93	1.96	1.92	2.00	1.95	24
27	1.96	1.97	1.99	2.04	2.02	1.96	1.96	S	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.98	1.95	2.04	1.96	24
28	2.13	2.43	2.53	2.31	2.28	2.13	S	1.99	1.98	1.98	1.97	1.98	1.98	1.97	1.97	1.98	1.97	1.96	1.95	1.96	1.96	1.98	1.99	1.99	1.95	2.53	2.06	24	
29	2.00	2.00	1.99	2.00	2.00	S	1.99	1.99	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.97	1.97	1.97	1.96	1.95	1.98	1.98	1.95	2.00	1.97	24	
30	1.99	1.99	1.99	2.00	S	2.00	2.00	1.99	1.99	1.99	1.98	1.96	1.95	1.95	1.96	1.97	1.99	1.99	1.97	1.96	1.97	2.00	2.00	1.99	1.95	2.00	1.98	24	
31	1.97	2.01	2.06	S	2.07	2.09	2.09	2.04	2.00	1.98	1.98	1.93	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.91	1.93	1.94	1.96	1.90	2.09	1.97	24	
HOURLY MAX	2.51	2.43	2.53	2.32	2.28	2.13	2.09	2.04	2.00	2.00	2.00	1.99	1.99	1.98	1.98	1.98	1.99	1.99	1.98	2.00	1.99	2.03	2.35	2.60					
HOURLY AVG	1.99	1.99	2.01	2.00	1.99	1.98	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.97	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

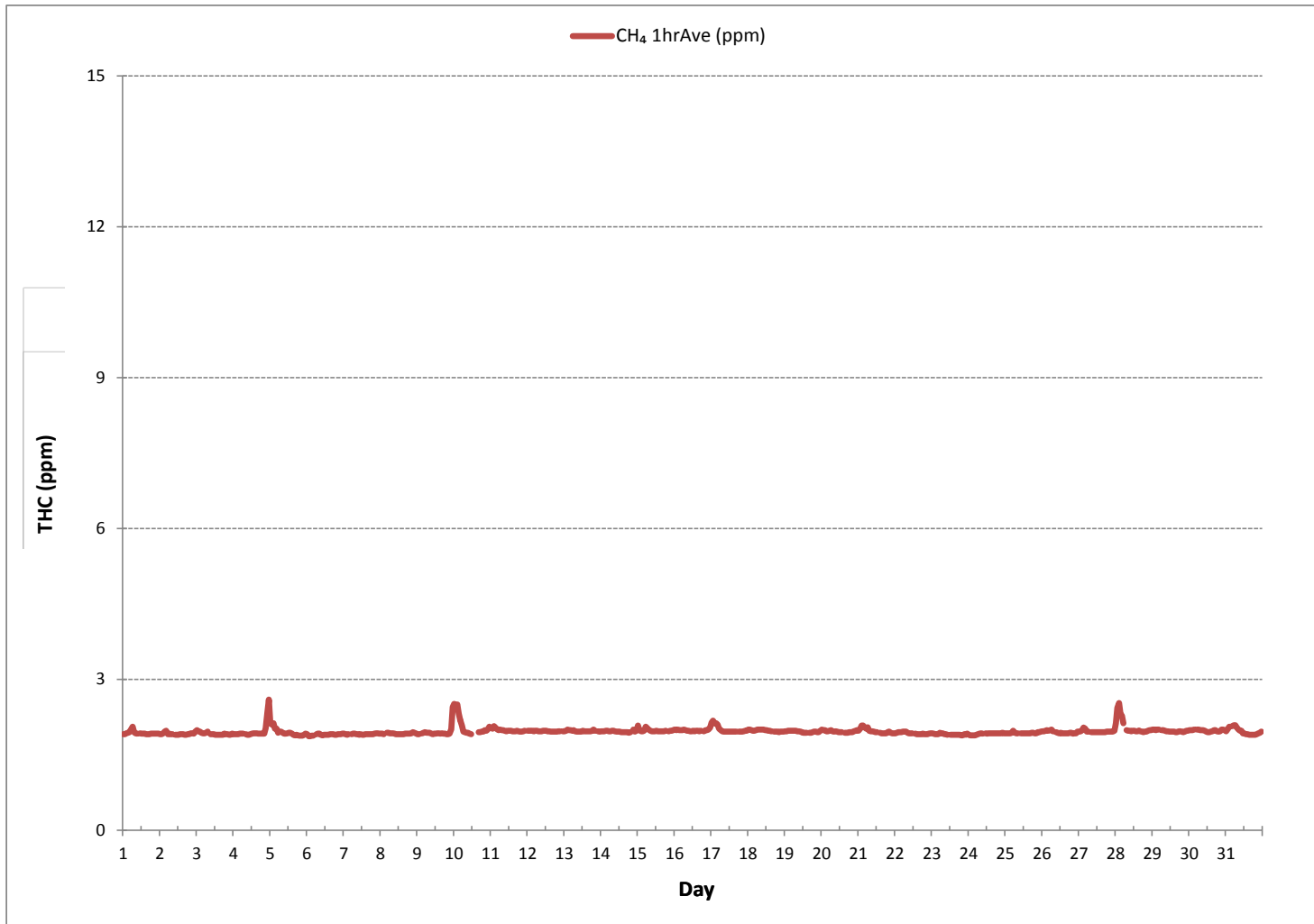
24 HR AVERAGES May 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	1	ON DAY 6
MAXIMUM 1-HR AVERAGE:	2.60 ppm	@ HOUR	23	ON DAY 4
MAXIMUM 24-HR AVERAGE:	2.06 ppm			ON DAY 10
IZS CALIBRATION TIME:	32 hrs	OPERATIONAL TIME:	744 hrs	
MONTHLY CALIBRATION TIME:	4 hrs	AMD OPERATION UPTIME:	100.0 %	
STANDARD DEVIATION:	0.07	MONTHLY AVERAGE:	1.96 ppm	

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - May 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	1.94	1.93	1.98	1.99	1.98	2.06	2.10	2.03	1.94	1.93	S	1.95	1.94	1.97	1.93	1.94	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.93	2.10	1.96	24	
2	1.94	1.93	1.98	2.01	2.00	1.97	1.96	1.94	1.93	S	1.92	1.93	1.91	1.97	1.92	1.92	1.92	1.92	1.91	1.93	1.97	1.95	1.93	1.99	1.91	2.01	1.95	24	
3	2.01	2.02	1.98	1.96	1.96	1.95	1.99	2.00	S	1.94	1.92	1.92	1.92	1.96	1.92	1.92	1.91	1.92	1.93	1.93	1.92	1.92	1.91	1.95	1.91	2.02	1.95	24	
4	1.92	1.93	1.92	1.92	1.94	1.95	1.97	S	1.95	1.91	1.93	1.93	1.93	1.94	1.94	2.05	1.94	1.94	1.93	1.93	1.94	2.20	2.85	3.08	1.91	3.08	2.04	24	
5	2.55	2.25	2.18	2.13	2.08	2.00	S	2.01	2.01	1.95	1.97	1.95	2.02	1.97	1.95	1.92	1.91	1.91	1.90	1.89	1.89	1.92	1.91	1.96	1.89	2.55	2.01	24	
6	1.95	1.89	1.89	1.89	1.90	S	1.92	1.94	1.93	1.92	1.91	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.95	1.92	1.94	1.94	1.89	1.95	1.92	24	
7	1.95	1.93	1.93	1.92	S	1.95	1.93	1.96	1.92	2.01	1.92	1.94	1.91	1.94	1.93	1.94	1.94	1.92	1.95	1.93	1.94	1.96	1.96	1.94	1.91	2.01	1.94	24	
8	1.95	1.95	1.94	S	1.96	1.95	1.95	1.97	1.94	1.94	1.92	1.95	1.93	1.92	1.93	1.92	1.94	1.94	1.93	1.93	1.97	1.97	1.96	1.96	1.92	1.97	1.94	24	
9	1.94	1.94	S	1.96	1.96	1.96	1.95	1.96	1.95	1.94	1.95	1.93	1.94	1.94	1.94	1.94	2.34	1.93	1.95	1.93	1.94	1.94	2.18	2.91	1.93	2.91	2.01	24	
10	2.85	S	2.68	2.44	2.30	2.19	2.00	1.96	1.95	1.95	1.94	1.93	C	C	C	C	1.96	1.96	1.98	2.01	2.05	2.03	2.15	2.13	1.93	2.85	2.13	24	
11	S	2.05	2.15	2.06	2.06	2.04	2.03	2.02	2.01	2.05	1.99	2.00	2.00	2.00	1.98	1.99	1.99	1.99	1.99	1.99	1.98	1.97	1.99	1.99	S	1.97	2.15	2.02	24
12	2.00	2.01	2.00	2.00	1.99	2.00	1.99	2.00	1.99	1.98	1.99	2.00	2.00	2.00	1.99	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.99	1.97	2.01	1.99	24
13	1.99	2.01	2.02	2.01	2.10	2.00	2.01	2.00	1.98	1.98	1.97	1.99	1.99	1.99	1.98	1.99	1.98	1.99	2.00	2.03	2.04	S	1.98	1.98	1.97	2.10	2.00	24	
14	1.98	2.01	2.00	1.99	1.99	1.98	1.99	1.99	2.00	1.99	1.98	1.98	1.97	1.96	1.97	1.96	1.97	1.96	1.96	1.98	S	2.06	1.98	2.05	1.96	2.06	1.99	24	
15	2.16	2.04	1.99	2.00	2.04	2.13	2.08	2.01	2.01	1.99	1.99	1.99	2.01	1.99	1.99	1.99	1.99	1.99	1.98	2.00	S	1.99	1.99	1.99	2.01	1.98	2.16	2.02	24
16	2.01	2.01	2.01	2.01	2.01	2.00	2.08	2.01	2.00	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	S	2.01	2.02	2.01	2.02	2.19	1.99	2.19	2.01	24	
17	2.39	2.37	2.18	2.16	2.15	2.05	2.02	1.98	1.98	1.97	1.97	1.97	1.98	1.98	1.97	1.97	S	1.97	1.97	1.97	1.98	2.00	2.00	1.99	1.97	2.39	2.04	24	
18	2.01	2.02	2.00	2.00	2.00	2.01	2.01	2.02	2.01	2.01	2.01	2.01	2.01	2.00	1.99	1.98	S	1.97	1.97	1.98	1.96	1.97	1.97	1.97	1.96	2.02	1.99	24	
19	2.00	1.99	2.00	2.00	2.00	1.99	1.99	1.99	1.99	1.98	1.98	1.96	1.96	1.95	1.95	S	1.96	1.96	1.96	1.98	1.98	1.98	1.96	2.02	1.95	2.02	1.98	24	
20	2.04	2.02	2.02	2.00	1.98	2.01	2.04	1.98	1.98	1.97	1.97	1.97	1.96	1.96	S	1.95	1.96	1.96	1.95	1.96	2.00	2.01	1.99	2.13	1.95	2.13	1.99	24	
21	2.01	2.13	2.25	2.19	2.09	2.05	2.07	2.01	1.97	1.98	1.97	1.97	1.96	S	1.95	1.94	1.94	1.94	1.94	2.13	2.02	2.00	1.96	1.95	1.94	2.25	2.02	24	
22	1.95	1.95	1.96	1.97	1.97	2.00	1.97	1.97	1.96	1.94	1.94	1.94	S	1.93	1.93	1.92	1.93	1.93	1.94	1.92	1.92	1.93	1.94	1.94	1.92	2.00	1.95	24	
23	1.94	1.96	1.93	1.93	1.92	2.00	1.99	1.97	1.93	1.93	1.91	S	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.91	1.91	1.93	1.92	1.94	1.91	2.00	1.93	24	
24	1.96	1.92	1.90	1.90	1.91	1.91	1.93	1.93	1.94	1.94	S	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.90	1.96	1.94	24	
25	1.94	1.95	1.95	1.95	2.00	2.02	1.97	1.95	1.95	S	1.95	1.95	1.95	1.95	1.95	1.97	1.95	1.97	1.97	1.98	1.97	1.96	1.96	1.97	1.94	2.02	1.96	24	
26	1.99	2.00	2.00	2.00	2.00	2.01	2.01	2.00	S	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.95	1.96	1.95	1.94	1.95	1.95	1.97	1.94	2.01	1.97	24	
27	1.98	1.99	2.03	2.10	2.07	1.99	1.97	S	1.97	1.96	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.98	2.00	1.96	2.10	1.98	24	
28	2.39	2.59	2.76	2.50	2.34	2.29	S	2.01	2.00	2.00	1.98	2.00	1.99	1.99	1.99	P	1.98	1.98	1.97	1.99	1.98	1.99	2.02	2.00	1.97	2.76	2.12	23	
29	2.04	2.04	2.01	2.01	2.03	S	2.00	2.00	2.00	1.99	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.98	1.98	1.97	1.97	1.99	2.01	1.99	1.96	2.04	1.99	24	
30	2.01	2.01	2.01	2.01	S	2.01	2.01	2.00	2.00	2.00	1.99	1.98	1.97	1.96	1.97	1.99	2.01	2.03	1.99	1.97	1.99	2.02	2.03	2.01	1.96	2.03	2.00	24	
31	1.99	2.06	2.17	S	2.19	2.11	2.11	2.08	2.02	2.00	2.01	1.96	1.93	P	1.92	1.92	1.92	1.92	1.91	1.91	1.93	1.94	1.99	2.00	1.91	2.19	2.00	23	
HOURLY MAX	2.85	2.59	2.76	2.50	2.34	2.29	2.11	2.08	2.02	2.05	2.01	2.01	2.02	2.00	1.99	2.05	2.34	2.03	2.13	2.03	2.05	2.20	2.85	3.08					
HOURLY AVG	2.06	2.03	2.06	2.03	2.03	2.02	2.00	1.99	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.97	1.95	1.96	1.96	1.96	1.97	1.98	2.01	2.06					

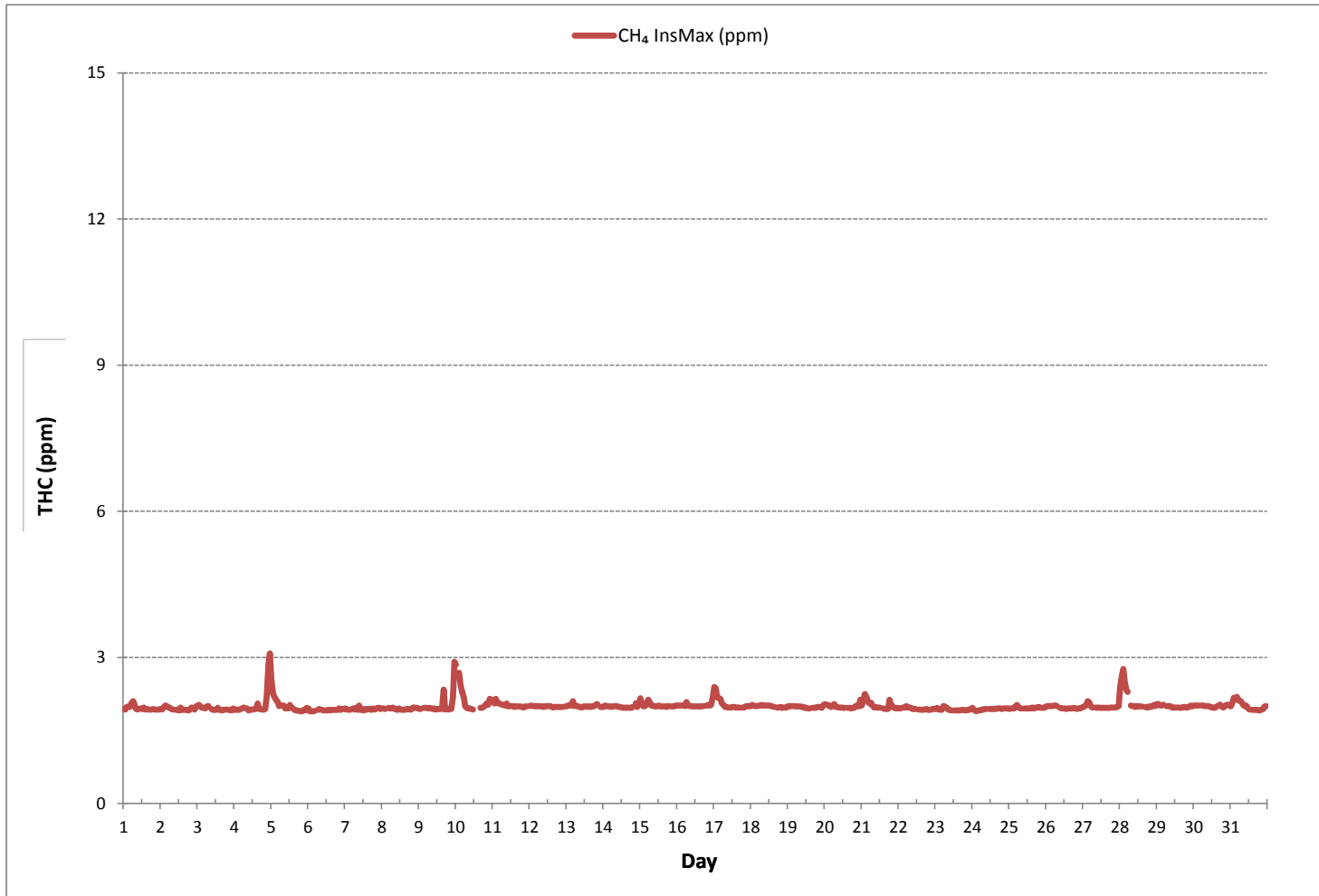
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706
MAXIMUM INSTANTANEOUS VALUE:	3.08 ppm @ HOUR 23 ON DAY 4
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	742 hrs
STANDARD DEVIATION:	0.11

METHANE MAX Instantaneous Maximum (CH₄ ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-CH4[ppm]
 Monthly: 17/05
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

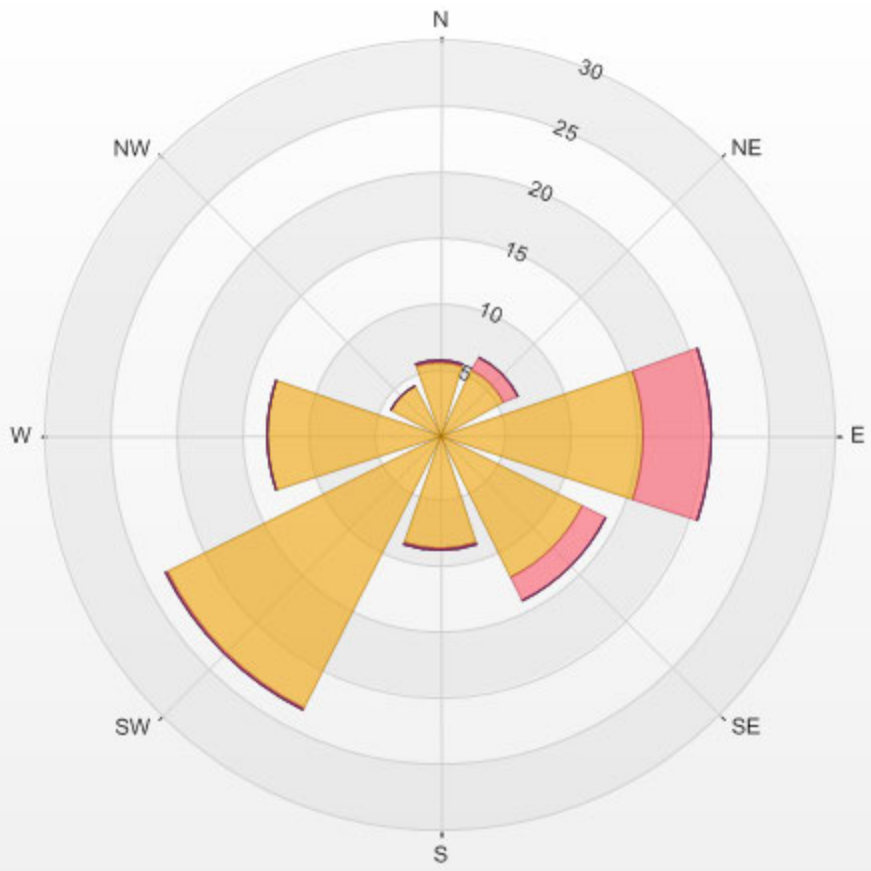
Calm: 3.40%

Calm Avg: 1.98 [ppm]

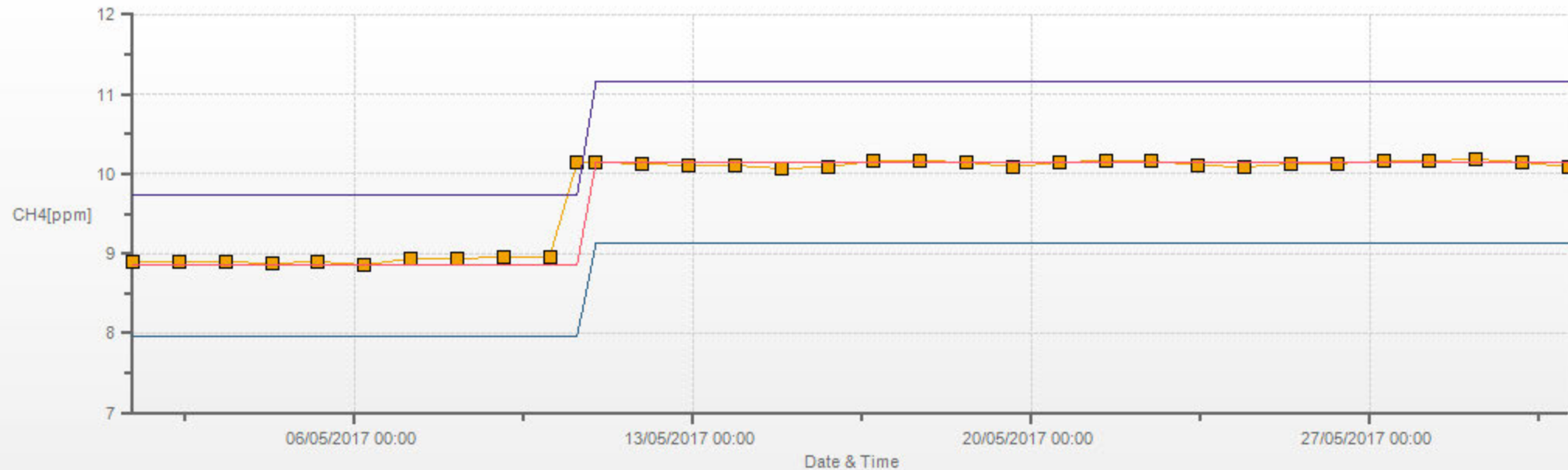
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	5.5	0.1	0.0	0.0	0.0	5.7
NE	5.5	1.1	0.0	0.0	0.0	6.7
E	15.4	5.2	0.0	0.0	0.0	20.7
SE	12.2	2.0	0.0	0.0	0.0	14.2
S	8.6	0.1	0.0	0.0	0.0	8.8
SW	23.2	0.1	0.0	0.0	0.0	23.4
W	13.2	0.0	0.0	0.0	0.0	13.2
NW	4.1	0.0	0.0	0.0	0.0	4.1
Summary	87.8	8.8	0.0	0.0	0.0	96.6

% Icon Classes (ppm) 88 0-2 9 2-3 0 3-5 0 5-10 0 >10.0

PRAMP_842 Poll.: PRAMP_842-CH4[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.40% Calm Poll Avg: 1.98[ppm]



CH4[ppm] Calibration: PRAMP_842 Monthly: 17/05 Type: Span



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

NON-METHANE HYDROCARBON



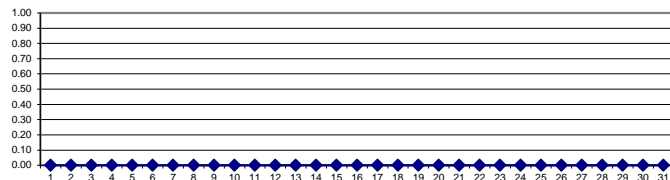
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	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																						
3	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																						
4	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	0.01	0.00	0.01	24																						
5	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																						
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	24																						
10	0.01	S	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	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	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	0.00	S	0.00	0.00	0.00	24																					
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	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	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	0.00	24																					
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	24																					
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
28	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24																					
30	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05																								
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																								

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

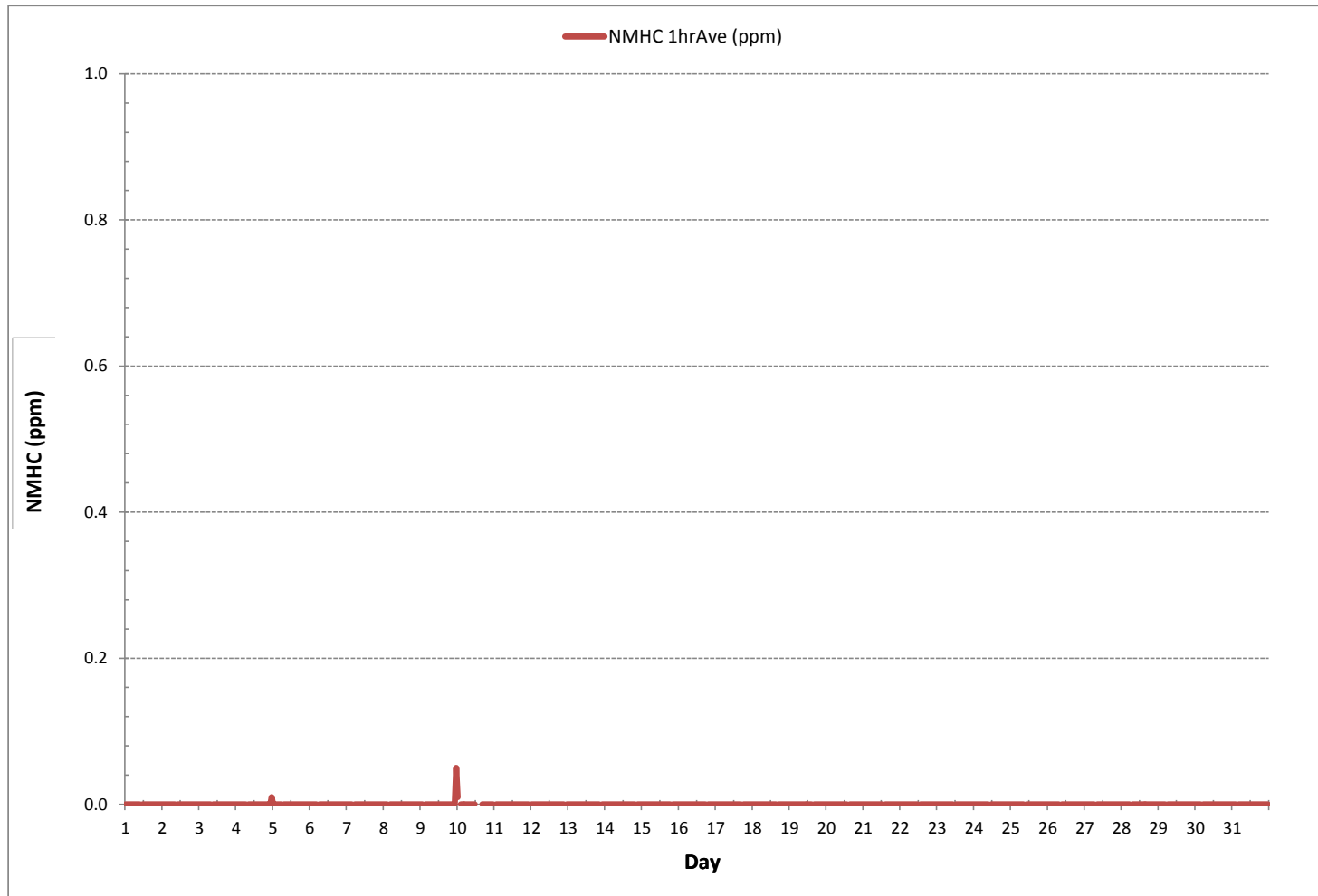


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	3			
MINIMUM 1-HR AVERAGE:	0.00	ppm @ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.05	ppm @ HOUR	23	ON DAY 9
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 842b 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	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	0.01	0.00	0.02	0.00	0.00	0.00	0.01	S	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	24	
2	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	S	0.00	0.02	0.00	0.00	0.02	0.00	0.01	0.02	0.00	0.01	0.00	0.04	0.00	0.00	0.00	0.04	0.01	24	
3	0.02	0.00	0.00	0.05	0.00	0.00	0.00	0.00	S	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.09	0.02	0.00	0.01	0.00	0.00	0.00	0.09	0.01	24	
4	0.00	0.00	0.04	0.02	0.00	0.00	0.01	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.17	0.00	0.12	0.18	0.00	0.18	0.02	24	
5	0.15	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.06	0.04	0.01	0.00	0.00	0.11	0.02	0.00	0.01	0.01	0.12	0.07	0.06	0.00	0.00	0.15	0.03	24		
6	0.00	0.01	0.01	0.00	0.00	S	0.17	0.00	0.00	0.02	0.00	0.12	0.02	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02	24		
7	0.00	0.00	0.02	0.03	S	0.04	0.00	0.00	0.00	0.04	0.02	0.00	0.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.05	0.01	24	
8	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.18	0.01	24		
9	0.04	0.00	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.04	0.15	0.02	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.22	0.00	0.22	0.02	24	
10	0.15	S	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.00	C	C	C	C	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.15	0.02	24		
11	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	S	0.00	0.03	0.00	24	
12	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.02	0.01	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.10	0.01	24	
13	0.11	0.06	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.02	0.00	0.08	0.00	0.00	S	0.00	0.00	0.15	0.02	24		
14	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	S	0.01	0.00	0.00	0.02	0.00	24		
15	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.14	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	S	0.00	0.00	0.00	0.00	0.14	0.01	24		
16	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.12	0.01	0.03	S	0.00	0.01	0.00	0.00	0.12	0.00	0.12	0.02	24	
17	0.12	0.08	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.01	S	0.00	0.00	0.00	0.03	0.02	0.00	0.16	0.03	24		
18	0.00	0.00	0.03	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.05	0.01	24		
19	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	S	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.02	0.00	24	
20	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	S	0.00	0.04	0.05	0.04	0.02	0.00	0.00	0.01	0.00	0.06	0.01	24		
21	0.00	0.07	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	24		
22	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	S	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.07	0.01	24		
23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	S	0.02	0.00	0.01	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24		
24	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.16	S	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.04	0.01	0.00	0.16	0.01	24		
25	0.00	0.00	0.08	0.00	0.01	0.00	0.18	0.04	0.00	S	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.18	0.02	24			
26	0.00	0.00	0.00	0.00	0.00	0.13	0.00	S	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.13	0.01	24			
27	0.00	0.00	0.06	0.02	0.00	0.00	0.00	S	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.15	0.01	24			
28	0.00	0.00	0.02	0.03	0.00	0.00	S	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	P	0.04	0.00	0.00	0.00	0.02	0.00	0.00	0.09	0.01	23			
29	0.00	0.00	0.00	0.01	0.00	S	0.00	0.01	0.01	0.00	0.02	0.00	0.16	0.00	0.00	0.00	0.02	0.01	0.06	0.00	0.17	0.01	0.03	0.17	0.02	24			
30	0.00	0.01	0.00	0.00	S	0.00	0.00	0.00	0.01	0.14	0.01	0.00	0.00	0.01	0.05	0.00	0.02	0.16	0.01	0.00	0.00	0.00	0.00	0.16	0.02	24			
31	0.00	0.15	0.00	S	0.08	0.00	0.18	0.02	0.00	0.02	0.00	0.00	0.00	P	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.17	0.11	0.16	0.18	0.04	23		
HOURLY MAX	0.15	0.15	0.08	0.16	0.08	0.05	0.18	0.15	0.14	0.16	0.05	0.12	0.16	0.18	0.15	0.15	0.04	0.16	0.09	0.06	0.17	0.17	0.12	0.22					
HOURLY AVG	0.02	0.02	0.01	0.02	0.00	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.03	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.03				

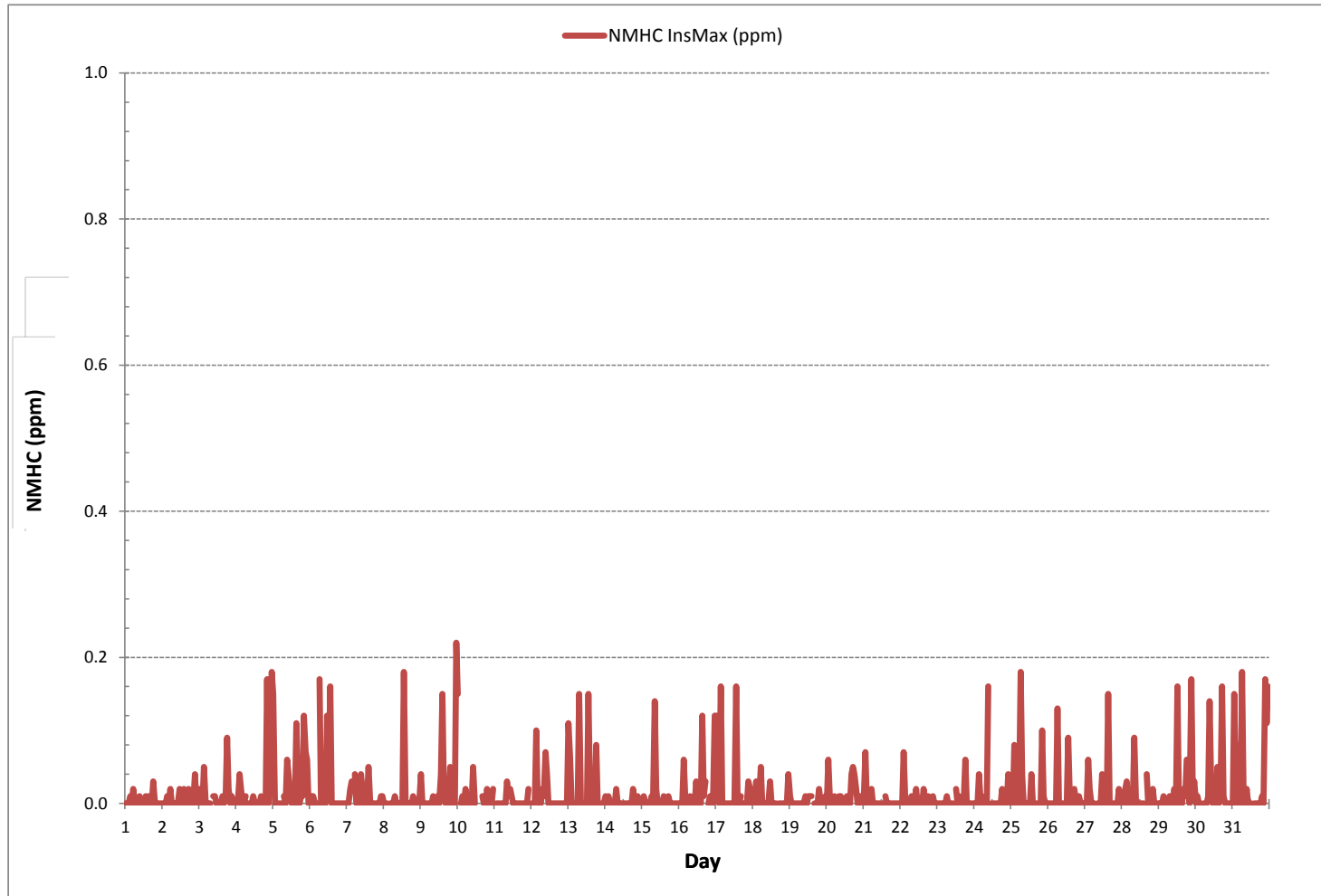
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	212
MAXIMUM INSTANTANEOUS VALUE:	0.22 ppm @ HOUR 23 ON DAY 9
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	4 hrs
STANDARD DEVIATION:	0.04
OPERATIONAL TIME:	742 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-NMHC[ppm]
 Monthly: 17/05
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

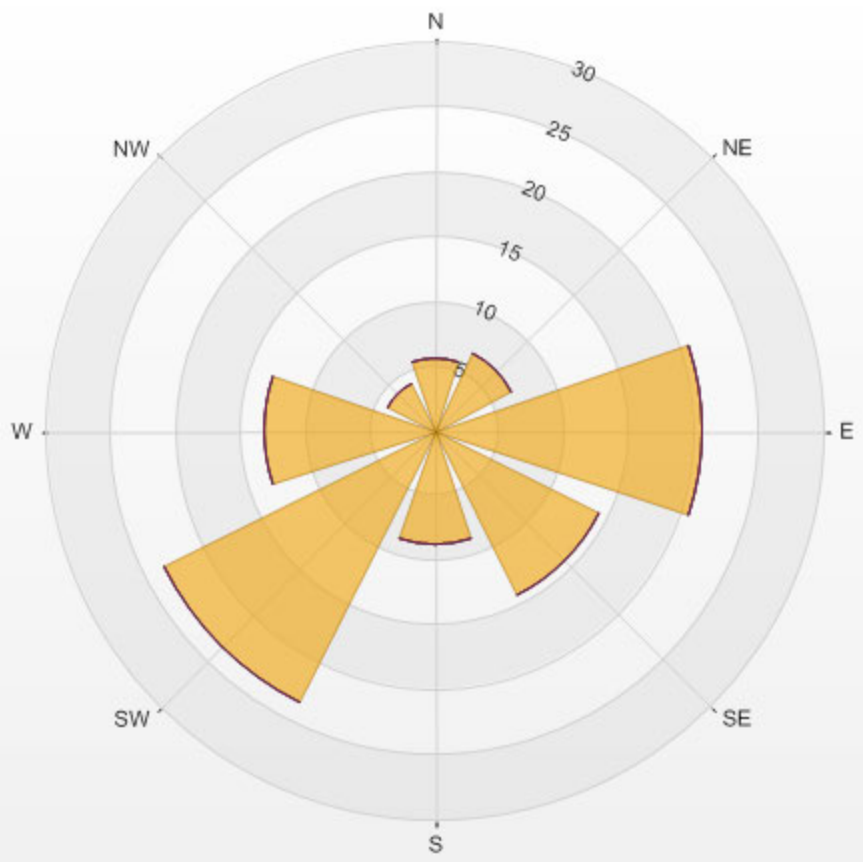
Calm: 3.40%

Calm Avg: 0.00 [ppm]

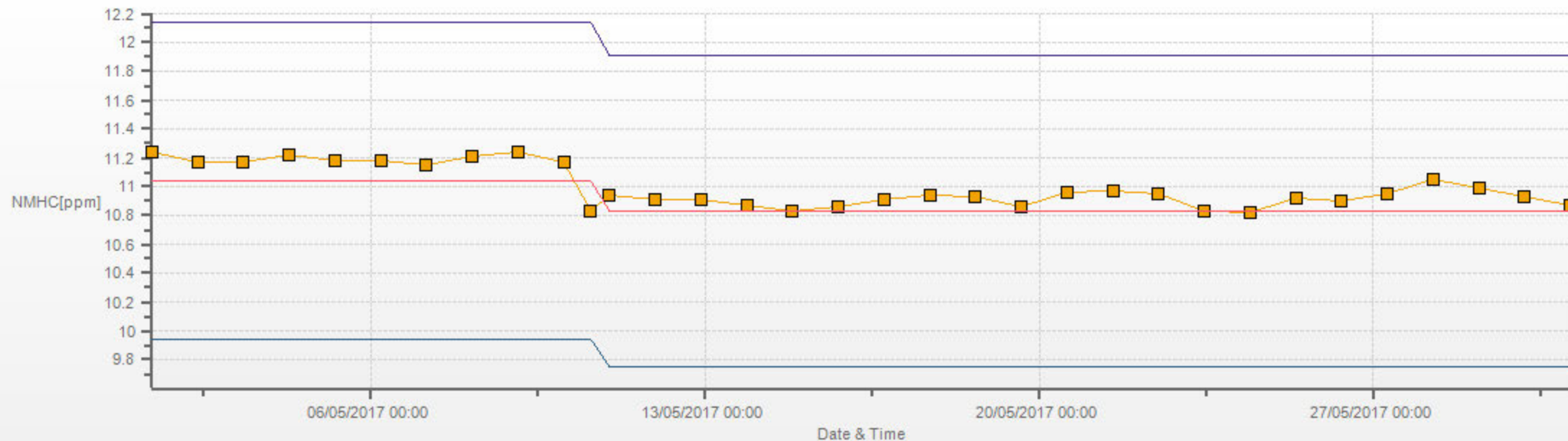
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	5.7	0.0	0.0	0.0	0.0	5.7
NE	6.7	0.0	0.0	0.0	0.0	6.7
E	20.7	0.0	0.0	0.0	0.0	20.7
SE	14.2	0.0	0.0	0.0	0.0	14.2
S	8.8	0.0	0.0	0.0	0.0	8.8
SW	23.4	0.0	0.0	0.0	0.0	23.4
W	13.2	0.0	0.0	0.0	0.0	13.2
NW	4.1	0.0	0.0	0.0	0.0	4.1
Summary	96.6	0.0	0.0	0.0	0.0	96.6

% Icon Classes (ppm) 97 0-0.1 0 0.1-0.3 0 0.3-1 0 1-2 0 >2.0

PRAMP_842 Poll.: PRAMP_842-NMHC[ppm] 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.40% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_842 Monthly: 17/05 Type: Span



Span Meas Span Ref Span Low Span High

WIND SPEED



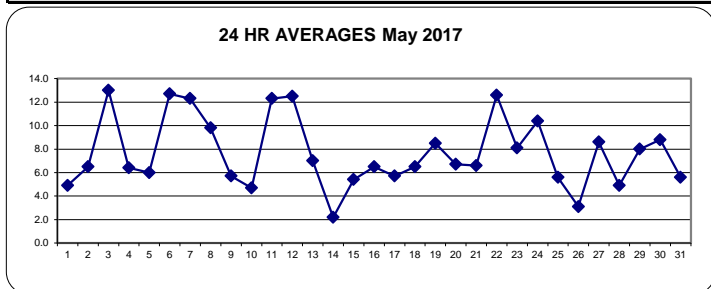
WIND SPEED Hourly Averages (WS kph)

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 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	4.4	2.3	2.0	0.7	1.0	1.2	1.1	2.9	1.9	4.6	8.8	8.0	8.8	11.1	8.0	8.8	7.1	9.8	13.6	7.0	7.3	9.5	7.1	4.4	0.7	13.6	4.9	24
2	4.3	1.7	1.1	0.9	3.6	4.1	5.3	6.4	9.4	7.9	10.3	11.9	9.8	13.6	14.0	12.3	14.6	16.8	16.1	10.6	4.5	3.2	4.0	7.3	0.9	16.8	6.5	24
3	7.5	8.7	8.5	8.0	3.2	4.8	7.8	8.5	10.5	11.4	16.1	18.1	21.8	21.9	28.7	28.9	27.7	30.7	26.3	21.1	19.0	17.8	11.9	10.3	3.2	30.7	13.0	24
4	11.3	8.0	8.8	6.6	7.7	6.5	6.3	7.3	9.3	9.4	6.9	7.0	13.7	17.5	15.0	11.6	11.5	13.1	8.1	3.7	2.4	3.2	2.5	4.2	2.4	17.5	6.4	24
5	5.7	4.2	5.2	10.2	9.3	9.4	10.9	12.0	12.3	11.2	10.0	11.9	11.3	11.9	11.1	11.4	9.7	12.7	14.0	5.2	1.2	17.7	14.1	4.4	1.2	17.7	6.0	24
6	7.5	7.9	6.7	7.8	7.6	7.7	8.0	11.9	8.8	12.8	16.5	18.1	21.7	21.4	21.0	21.4	17.2	17.0	18.0	17.1	4.8	12.0	15.3	13.1	4.8	21.7	12.7	24
7	13.4	14.4	12.4	14.1	13.4	12.7	18.2	17.9	18.8	20.5	21.0	20.7	20.5	21.9	23.8	11.4	7.2	2.4	4.3	2.0	0.9	3.7	11.3	12.8	0.9	23.8	12.3	24
8	10.8	7.1	4.3	5.3	4.3	8.6	7.6	11.0	13.0	13.6	14.0	14.4	16.2	18.2	14.8	17.0	13.8	17.9	14.8	11.6	6.1	4.8	4.0	3.3	3.3	18.2	9.8	24
9	8.7	6.7	8.2	7.5	5.1	6.2	7.9	10.6	9.9	8.7	11.7	10.3	6.6	5.3	5.9	4.3	9.4	7.3	10.6	6.2	0.4	2.2	3.1	4.7	0.4	11.7	5.7	24
10	3.2	4.4	3.6	4.7	6.6	6.7	9.3	3.1	3.6	8.4	10.6	9.6	7.7	8.2	8.5	11.0	16.0	3.1	11.3	7.4	4.6	3.6	5.6	4.0	3.1	16.0	4.7	24
11	5.7	6.5	7.2	7.9	8.2	9.8	9.7	12.3	11.7	12.1	14.4	14.1	14.3	11.6	13.9	14.0	15.5	16.3	16.3	16.1	14.2	14.9	14.8	16.2	5.7	16.3	12.3	24
12	11.7	9.8	10.2	12.3	12.8	10.9	13.6	14.4	13.8	13.4	14.1	11.6	13.0	12.4	12.7	15.2	14.1	15.4	16.1	14.6	12.9	10.3	10.2	9.8	9.8	16.1	12.5	24
13	9.4	7.6	8.0	6.6	7.9	8.7	7.9	10.0	9.5	10.6	10.1	9.8	7.6	9.4	9.5	9.2	9.5	6.8	3.6	3.9	4.2	6.0	6.9	6.3	3.6	10.6	7.0	24
14	6.4	8.0	7.2	6.9	7.8	8.1	5.1	5.6	8.5	10.4	9.3	9.0	7.6	3.4	2.8	5.1	4.8	5.4	5.6	5.3	3.0	5.7	3.4	3.1	2.8	10.4	2.2	24
15	4.8	5.8	4.6	3.9	4.4	4.5	6.3	6.3	6.8	5.9	4.3	3.4	3.5	4.8	5.4	5.9	6.1	9.2	10.3	10.0	6.3	4.6	5.6	4.4	3.4	10.3	5.4	24
16	3.2	4.2	4.3	5.5	6.6	5.6	8.1	7.3	9.2	9.3	10.0	10.4	11.0	11.0	9.8	9.2	4.8	8.4	8.0	5.9	2.2	2.3	3.4	3.5	2.2	11.0	6.5	24
17	2.3	2.0	2.0	3.9	4.4	5.6	6.4	9.0	10.4	11.1	8.5	8.1	7.9	8.0	7.9	8.1	10.1	9.4	8.8	8.1	3.4	4.6	4.6	4.9	2.0	11.1	5.7	24
18	6.7	5.6	3.9	4.0	4.9	5.2	4.4	4.6	5.1	11.1	11.5	14.9	12.2	15.5	17.3	13.7	12.1	7.8	3.5	2.1	10.6	12.8	7.3	4.1	2.1	17.3	6.5	24
19	3.8	4.7	7.5	7.5	6.5	5.7	11.3	13.8	14.9	15.5	17.3	18.2	19.5	20.1	19.6	16.9	14.8	11.1	6.5	1.5	9.4	5.3	3.3	1.5	20.1	8.5	24	
20	4.6	1.4	3.8	3.4	2.6	2.0	2.5	5.9	5.4	7.0	8.7	11.6	14.9	17.0	15.9	14.4	14.0	13.6	13.7	10.5	7.8	4.7	1.3	0.7	0.7	17.0	6.7	24
21	1.9	3.1	3.5	3.8	3.6	4.2	3.7	5.6	10.0	9.2	9.4	11.5	13.7	12.6	14.7	16.0	20.6	14.8	11.8	3.7	2.1	4.3	6.4	7.8	1.9	20.6	6.6	24
22	5.7	7.2	6.5	5.8	3.4	8.2	7.6	9.0	13.6	20.5	21.1	22.1	21.5	23.0	24.2	24.6	20.1	23.5	13.0	10.5	10.7	8.4	9.6	10.3	3.4	24.6	12.6	24
23	3.7	7.8	12.7	16.1	9.7	8.0	8.8	14.6	19.4	19.1	19.3	18.4	16.7	15.2	12.7	9.9	6.4	4.8	1.9	4.6	4.9	3.8	7.3	1.3	1.3	19.4	8.1	24
24	11.6	6.5	3.5	5.2	6.2	6.3	8.4	10.5	11.0	11.9	14.9	17.8	19.1	20.4	19.5	17.5	15.2	15.7	13.6	14.2	9.4	6.8	6.1	5.8	3.5	20.4	10.4	24
25	7.1	8.1	7.3	3.8	0.7	1.1	6.6	7.8	7.6	9.2	9.0	7.9	11.3	11.9	16.0	13.4	11.6	12.4	8.9	6.5	3.2	4.6	4.9	4.6	0.7	16.0	5.6	24
26	4.4	3.2	3.1	2.7	3.0	3.9	0.8	2.1	4.3	8.1	11.2	10.6	11.2	10.0	5.7	8.6	8.0	6.5	11.2	10.9	7.4	6.3	4.9	1.1	0.8	11.2	3.1	24
27	1.7	2.9	0.9	5.4	4.7	9.3	8.7	10.3	13.0	13.2	16.5	16.3	16.2	17.5	17.0	15.2	14.6	12.7	12.0	10.5	7.9	4.5	2.8	3.1	0.9	17.5	8.6	24
28	3.2	2.4	1.2	2.1	3.2	2.3	4.3	8.2	8.9	5.8	5.3	5.6	5.1	2.4	3.2	5.6	3.7	6.4	7.9	8.7	7.7	6.2	7.1	7.1	1.2	8.9	4.9	24
29	7.1	5.2	4.2	4.3	5.0	5.5	7.1	7.9	7.7	9.2	11.0	9.7	10.2	9.2	10.4	12.1	12.7	11.7	11.7	6.3	5.8	6.6	7.6	8.1	4.2	12.7	8.0	24
30	6.5	6.3	6.0	6.2	5.2	5.0	6.8	12.3	12.1	9.1	13.0	12.9	14.7	11.3	13.0	13.5	11.5	11.3	10.5	10.2	5.6	3.7	5.3	6.5	3.7	14.7	8.8	24
31	1.0	4.5	4.8	4.4	3.2	1.8	3.2	3.2	4.2	5.4	11.0	11.1	16.5	20.7	19.8	15.5	15.2	14.3	13.7	10.0	3.8	1.5	3.0	2.6	1.0	20.7	5.6	24
HOURLY MAX	13.4	14.4	12.7	16.1	13.4	12.7	18.2	17.9	19.4	20.5	21.1	22.1	21.8	23.0	28.7	28.9	27.7	30.7	26.3	21.1	19.0	17.8	15.3	16.2				
HOURLY AVG	2.3	1.9	2.3	2.5	2.0	2.2	2.1	2.2	2.2	3.2	4.2	4.7	5.8	5.7	6.0	5.2	4.9	4.8	3.6	2.0	1.5	1.9	1.5	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

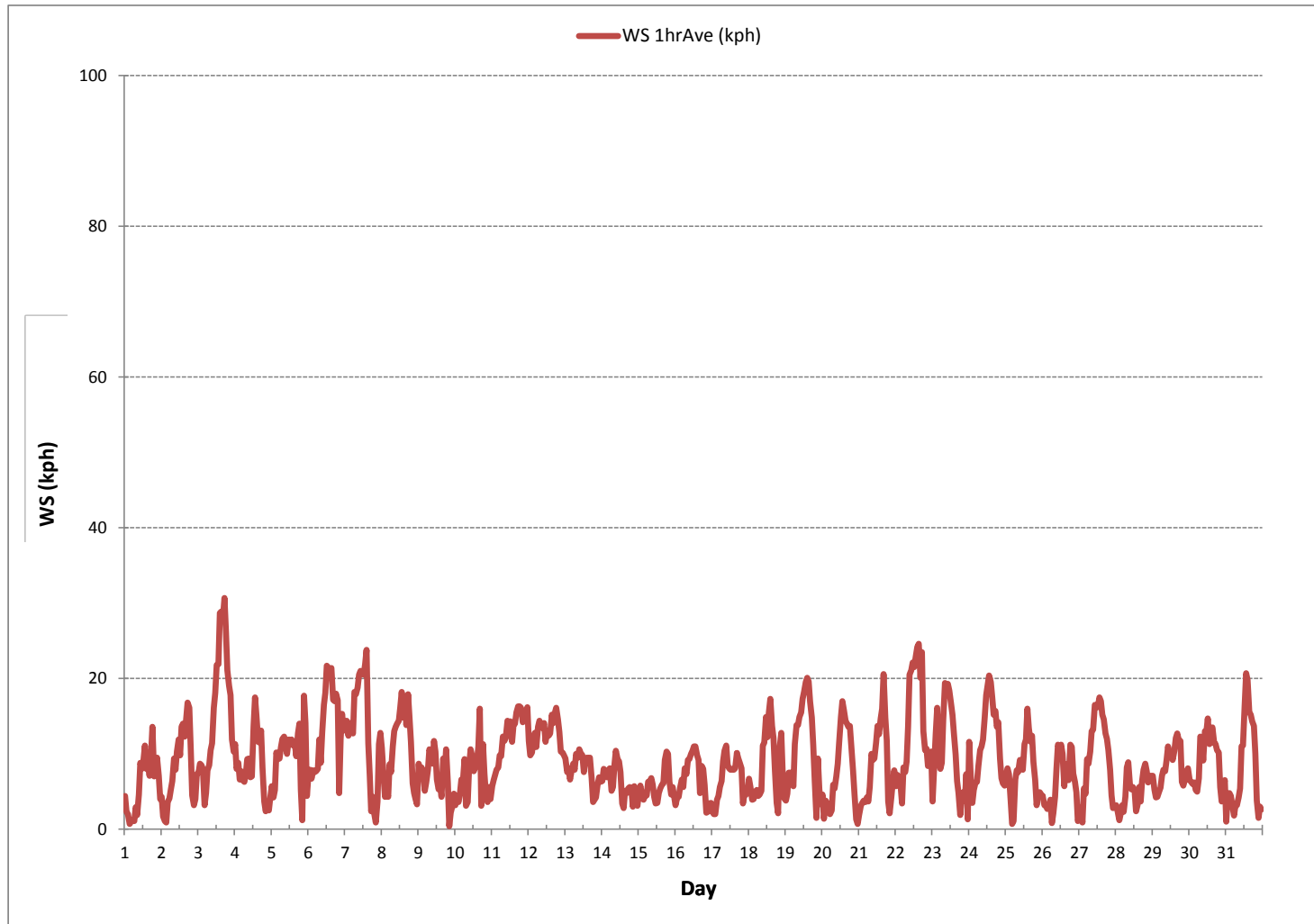
LAST CALIBRATION:	April 5, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744
MINIMUM 1-HR AVERAGE:	0.4 kph @ HOUR 20 ON DAY 9
MAXIMUM 1-HR AVERAGE:	30.7 kph @ HOUR 17 ON DAY 3
MAXIMUM 24-HR AVERAGE:	13.0 kph ON DAY 3
MONTHLY CALIBRATION TIME:	0 hrs
OPERATIONAL TIME:	744 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	5.2
MONTHLY AVERAGE:	2.4 kph

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b 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	7.8	5.8	5.8	4.2	3.4	4.1	3.1	7.9	6.7	13.9	20.5	21.9	25.0	22.3	23.4	22.0	22.2	28.5	26.4	15.6	17.5	16.9	17.7	9.1	3.1	28.5	14.6	24
2	9.8	6.2	5.4	3.6	7.2	7.5	9.9	10.9	19.1	19.9	21.4	25.6	26.0	32.8	30.5	31.7	31.3	35.6	28.6	23.1	8.9	7.5	8.0	12.2	3.6	35.6	17.6	24
3	13.2	14.9	15.0	15.4	13.1	9.7	13.1	15.9	16.7	19.8	30.7	34.3	43.2	49.1	56.4	61.7	53.4	55.7	51.4	40.9	38.5	28.6	27.7	22.1	9.7	61.7	30.8	24
4	22.6	16.4	17.0	13.0	12.2	12.0	11.5	12.8	21.7	21.8	21.9	22.3	36.0	34.9	32.7	26.9	30.0	25.3	22.1	10.5	5.0	5.9	5.4	9.1	5.0	36.0	18.7	24
5	12.2	8.2	18.2	22.7	19.8	21.1	22.9	31.5	29.8	28.8	32.4	31.2	30.8	27.9	33.7	30.0	25.5	25.6	25.8	16.2	4.5	65.0	43.7	15.5	4.5	65.0	25.9	24
6	21.5	19.7	13.9	14.4	16.0	12.5	12.9	23.0	21.2	23.8	30.4	37.3	39.3	41.0	38.2	37.0	33.4	36.8	39.2	41.9	16.3	26.1	27.8	28.1	12.5	41.9	27.1	24
7	25.4	26.3	20.6	25.6	23.6	29.1	35.7	35.8	33.9	36.1	39.9	39.2	40.0	47.3	40.6	42.4	18.9	14.7	17.8	8.5	3.1	9.5	29.2	22.8	3.1	47.3	27.7	24
8	21.6	12.0	11.3	9.3	10.9	13.8	14.8	21.1	24.9	25.2	29.9	36.3	38.9	35.6	32.9	36.6	43.6	33.3	34.1	20.3	16.2	11.3	6.8	10.7	6.8	43.6	22.9	24
9	16.5	13.5	15.0	11.0	8.8	12.8	17.1	17.7	17.0	18.8	23.4	24.3	28.3	23.0	23.1	22.3	26.4	18.2	20.5	14.8	7.9	3.7	6.9	9.0	3.7	28.3	16.6	24
10	5.5	7.5	8.6	11.6	16.8	16.7	20.6	14.9	13.8	24.6	29.8	27.6	23.8	23.5	28.9	27.5	30.8	17.3	31.0	17.8	9.6	6.4	10.4	7.1	5.5	31.0	18.0	24
11	13.6	12.6	13.1	17.6	19.0	24.1	23.3	28.0	27.7	28.8	32.4	38.2	40.8	35.9	34.2	42.2	41.0	38.7	40.6	40.7	33.7	36.7	36.2	40.6	12.6	42.2	30.8	24
12	33.5	28.0	27.1	29.6	33.3	27.3	29.7	34.7	35.6	34.1	37.5	37.5	39.3	31.7	31.5	38.8	35.8	39.6	39.1	34.6	32.5	25.1	22.8	25.3	22.8	39.6	32.6	24
13	23.1	18.9	17.7	18.2	20.1	21.9	21.3	25.8	25.8	25.1	26.6	24.9	20.6	29.8	24.4	28.4	26.7	15.4	10.8	9.9	11.9	11.1	12.8	10.7	9.9	29.8	20.0	24
14	11.3	13.2	12.0	11.3	15.7	18.5	15.1	12.9	17.8	19.0	17.7	18.6	17.3	15.2	12.9	17.1	14.9	17.1	16.0	14.6	10.2	14.4	14.5	9.4	9.4	19.0	14.8	24
15	12.2	14.7	13.6	9.4	10.9	13.8	14.3	14.7	17.4	13.3	13.2	10.5	10.9	14.3	21.4	19.2	21.6	30.7	30.5	24.4	16.7	10.1	11.1	11.0	9.4	30.7	15.8	24
16	8.0	10.4	9.9	12.3	13.5	13.8	16.7	18.6	25.4	24.9	26.2	30.4	26.6	27.4	23.2	32.9	19.4	20.4	20.4	22.7	6.9	5.6	7.1	7.1	5.6	32.9	17.9	24
17	7.9	7.7	6.4	8.0	11.1	12.3	17.5	20.2	32.5	33.2	26.7	34.3	27.0	29.5	26.8	28.3	28.4	22.0	28.0	17.1	9.7	11.1	14.8	14.0	6.4	34.3	19.7	24
18	13.6	11.9	10.6	9.8	13.7	13.0	11.6	15.4	14.5	22.3	24.6	32.5	28.4	35.5	44.8	26.9	26.8	33.7	17.4	11.7	18.7	22.2	18.3	8.1	8.1	44.8	20.2	24
19	9.9	11.7	17.9	14.5	11.7	14.3	21.5	24.3	23.9	27.7	29.7	33.0	37.9	36.5	49.7	39.2	33.1	30.4	21.3	17.1	5.4	33.7	20.0	15.8	5.4	49.7	24.1	24
20	12.9	20.9	7.7	9.4	6.9	5.7	14.0	13.6	12.3	14.7	20.2	27.1	34.6	37.2	32.2	33.0	33.0	32.6	25.9	19.5	20.2	9.2	3.2	2.8	2.8	37.2	18.7	24
21	3.4	8.2	8.0	7.6	6.4	8.4	7.2	12.6	18.5	17.9	20.3	24.4	30.8	31.7	31.1	34.0	37.7	29.9	25.6	14.2	5.8	8.1	16.2	15.4	3.4	37.7	17.6	24
22	10.9	14.8	12.0	9.6	10.4	13.5	14.6	21.3	28.5	34.9	36.2	39.5	41.4	42.9	44.1	47.4	39.1	47.6	26.2	22.1	18.3	17.7	18.9	20.7	9.6	47.6	26.3	24
23	14.6	21.3	22.5	33.4	21.6	15.1	16.3	30.0	36.3	36.5	38.0	34.1	34.8	32.8	29.2	27.9	19.9	12.3	7.3	12.9	10.4	10.5	23.7	9.5	7.3	38.0	22.9	24
24	21.8	14.4	10.4	12.2	14.0	16.2	19.3	25.7	26.5	30.0	37.5	43.9	49.0	53.3	46.4	48.3	45.0	40.0	35.4	38.6	23.4	17.5	15.5	17.8	10.4	53.3	29.2	24
25	16.2	17.9	19.7	9.8	7.4	7.5	18.1	14.8	16.0	20.7	21.4	20.5	27.4	29.6	46.4	31.0	36.9	21.6	18.6	12.4	11.7	8.5	9.0	8.9	7.4	46.4	18.8	24
26	8.0	6.2	5.1	5.1	5.5	7.5	3.5	6.7	13.5	19.7	23.5	28.6	30.3	26.6	32.8	23.7	22.7	19.1	23.1	19.2	12.3	11.5	10.4	4.6	3.5	32.8	15.3	24
27	5.2	7.2	4.2	11.7	18.2	22.9	20.0	27.8	26.5	32.3	38.3	41.7	38.4	39.0	39.6	39.5	39.3	34.3	34.1	29.0	19.4	13.9	7.6	5.5	4.2	41.7	24.8	24
28	6.6	8.6	6.1	5.4	7.2	9.3	17.0	20.9	21.5	18.3	19.7	18.9	18.0	21.8	19.5	P	18.7	21.3	26.2	25.8	21.7	14.8	17.2	19.6	5.4	26.2	16.7	23
29	20.4	13.9	14.4	15.5	14.1	14.2	17.7	19.9	18.9	29.4	26.4	25.7	26.7	30.2	29.1	34.1	31.4	30.9	26.2	20.8	16.4	21.5	20.4	18.4	13.9	34.1	22.3	24
30	19.3	15.9	12.8	13.6	12.2	10.6	17.1	25.2	23.6	21.6	27.3	29.1	33.1	28.9	30.0	28.5	30.2	25.5	22.3	26.7	20.3	10.3	12.6	23.2	10.3	33.1	21.6	24
31	17.1	9.9	11.7	10.1	11.3	7.8	10.1	17.1	17.9	21.4	22.7	27.5	36.0	P	40.5	31.4	29.5	28.6	26.4	19.6	10.3	3.8	8.6	7.3	3.8	40.5	18.5	23
HOURLY MAX	33.5	28.0	27.1	33.4	33.3	29.1	35.7	35.8	36.3	36.5	39.9	43.9	49.0	53.3	56.4	61.7	53.4	55.7	51.4	41.9	38.5	65.0	43.7	40.6				
HOURLY AVG	14.4	13.5	12.7	13.1	13.4	14.1	16.4	20.1	22.1	24.5	27.3	29.7	31.6	32.2	33.2	33.0	30.5	28.5	26.4	21.4	14.9	16.1	16.3	14.2				

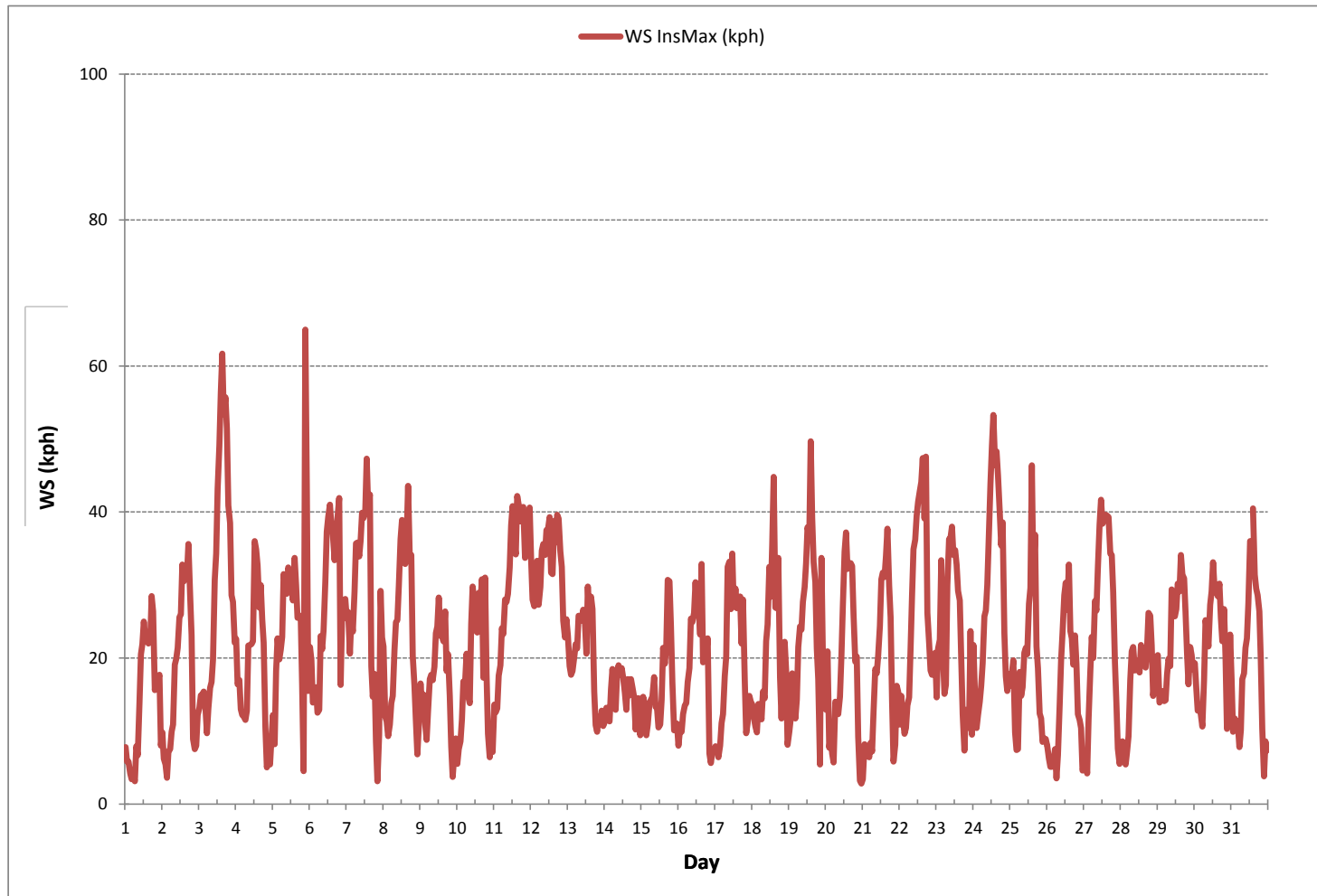
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	65.0	kph	@ HOUR	21	ON DAY	5	
OPERATIONAL TIME:						742	hrs

WIND SPEED Instantaneous Maximum (WS kph)



Wind: PRAMP_842
 Monitor: WSP [kph]
 Monthly: 17/05
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 3.23%

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	1.2	2.4	1.9	0.1	0.0	0.0	5.6
NE	4.2	1.6	0.9	0.0	0.0	0.0	6.7
E	7.8	9.5	3.5	0.0	0.0	0.0	20.8
SE	7.0	6.5	0.8	0.0	0.0	0.0	14.3
S	2.3	5.2	1.3	0.0	0.0	0.0	8.9
SW	3.9	10.4	6.9	2.0	0.0	0.0	23.1
W	1.3	4.0	5.8	1.9	0.1	0.0	13.2
NW	1.3	2.2	0.7	0.0	0.0	0.0	4.2
Summary	29.0	41.8	21.8	4.0	0.1	0.0	96.7

% Icon Classes (kph)

29  1.8-6.0

42  6.0-12.0

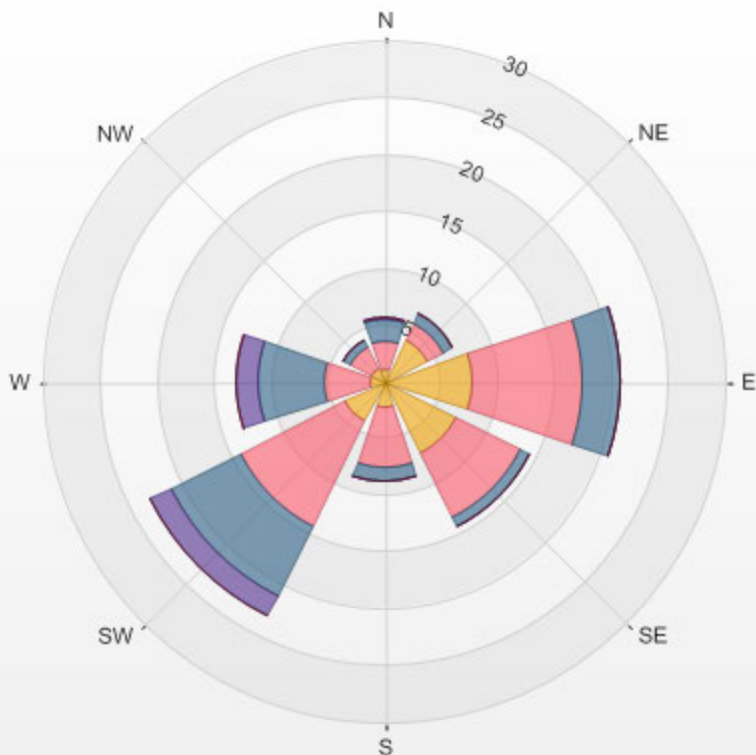
22  12.0-20.0

4  20.0-29.0

0  29.0-39.0

0  >39.0

PRAMP_842 2017/05/01 00:00 - 2017/05/31 23:00 Calm: 3.23% Calm Wind Avg Speed: 1.10(kph)



WIND DIRECTION



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

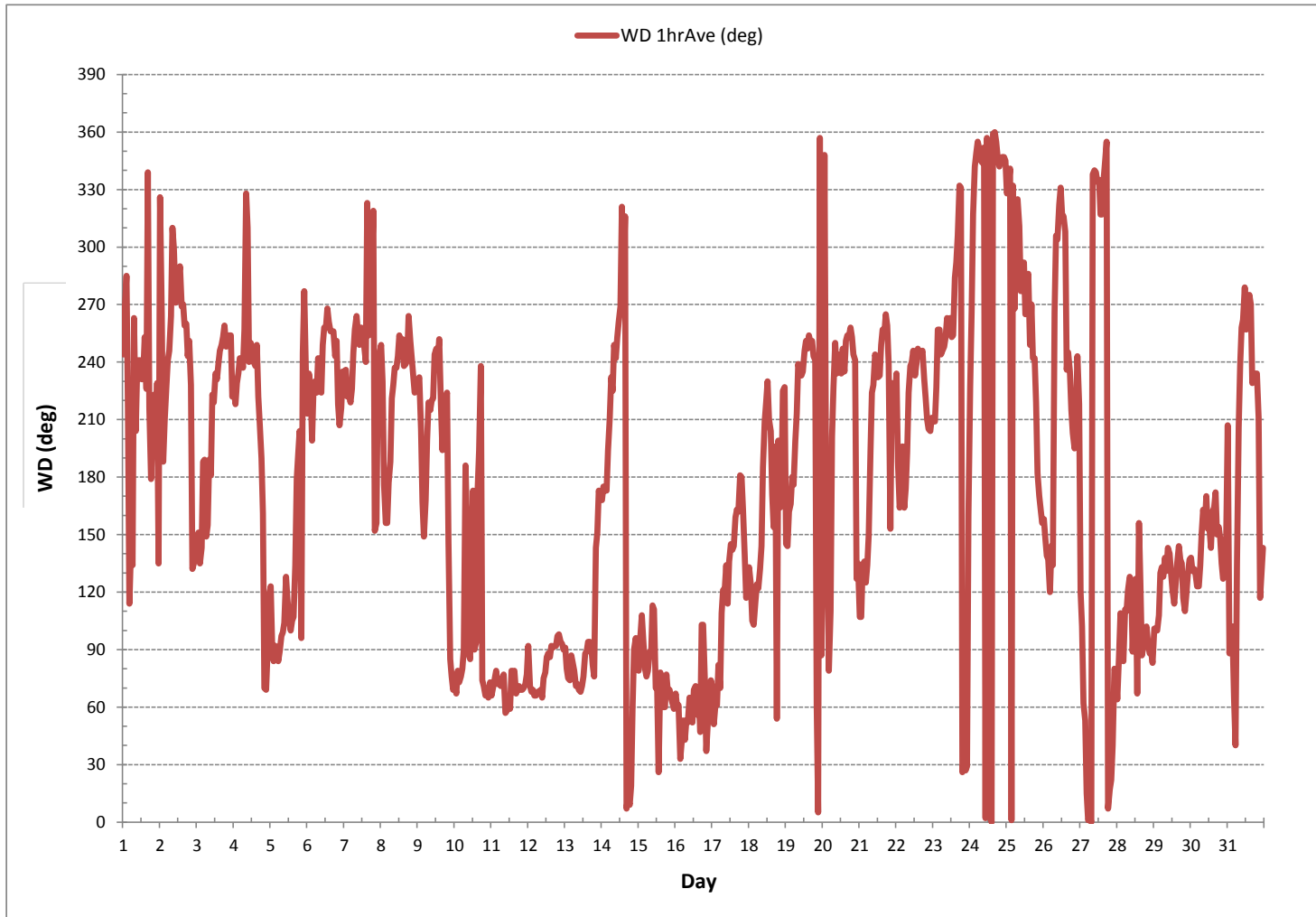
STATUS FLAG CODES

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:	86		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	214 (SSW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



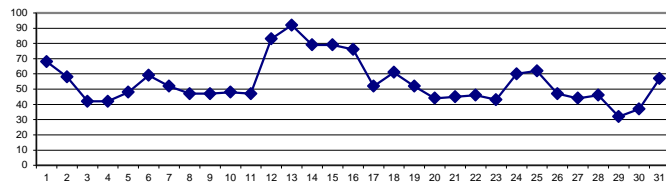
RELATIVE HUMIDITY Hourly Averages (RH %)

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

STATUS FLAG CODES

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

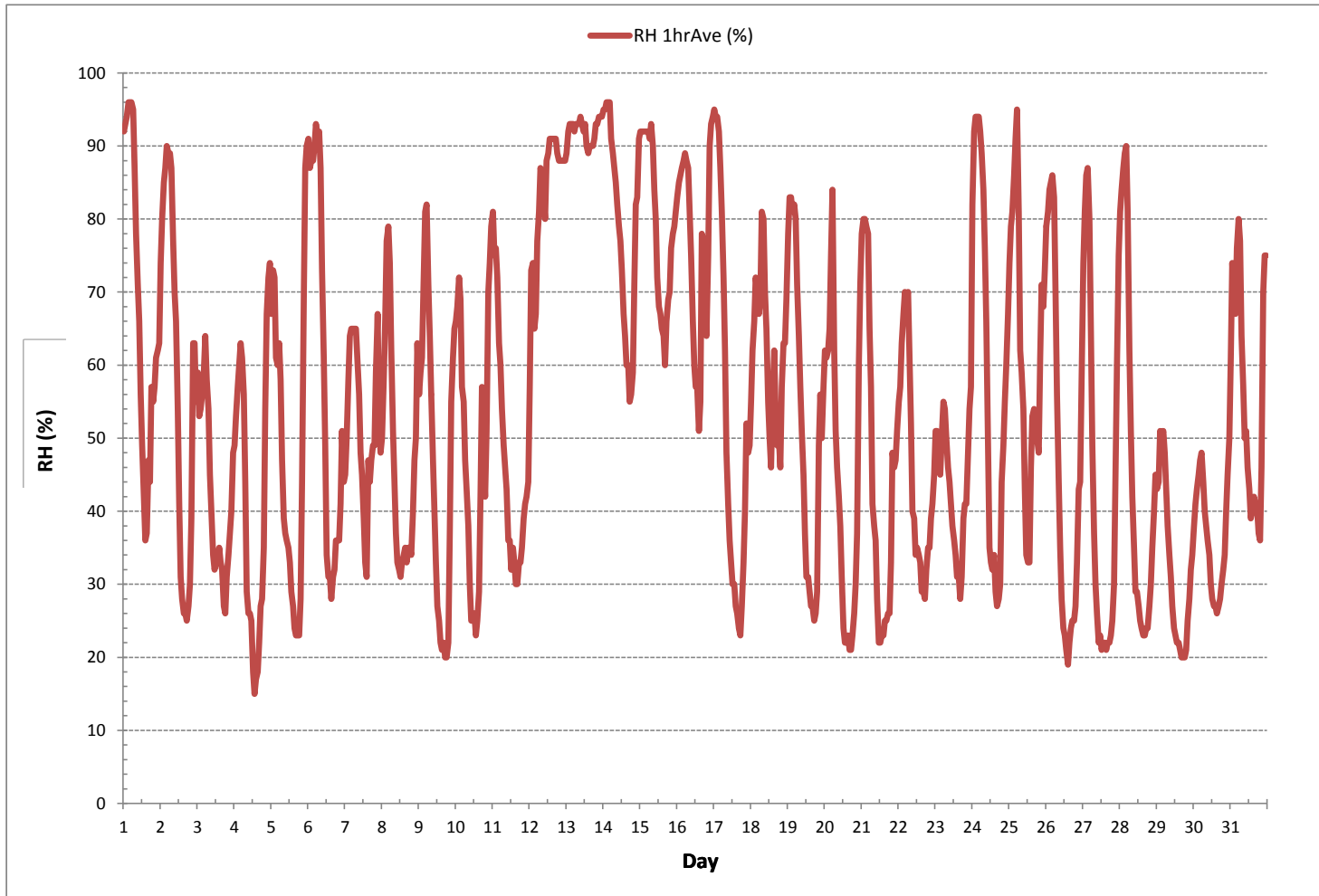
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	15	%	@ HOUR	13	ON DAY	4
MAXIMUM 1-HR AVERAGE:	96	%	@ HOUR	3	ON DAY	1
MAXIMUM 24-HR AVERAGE:	92	%			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



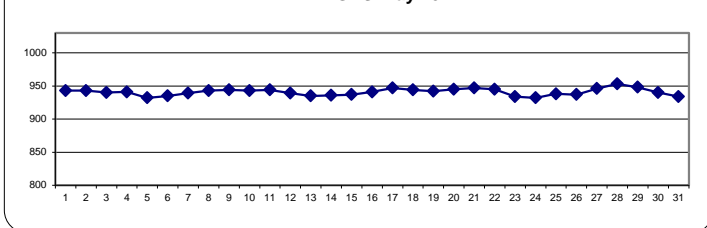
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	944	944	944	944	944	944	945	944	944	944	944	943	942	942	942	941	941	941	941	941	941	941	941	941	941	941	945	943	24
2	941	941	942	942	942	942	943	943	944	944	945	945	945	944	944	944	944	944	944	944	943	943	943	943	943	943	941	945	943	24
3	942	942	941	941	941	941	941	941	941	940	940	940	939	939	939	938	938	938	939	939	939	939	940	940	940	938	942	940	24	
4	941	941	941	941	941	942	942	942	942	942	942	942	942	942	941	941	940	940	939	939	939	939	939	939	939	939	939	942	941	24
5	938	938	937	936	936	936	935	934	933	933	932	931	930	930	929	928	928	927	927	927	929	929	930	927	938	932	24			
6	930	931	932	932	933	934	934	934	935	935	935	935	936	936	936	937	937	938	938	938	938	938	938	938	938	930	938	935	24	
7	938	938	938	938	938	938	938	939	939	939	939	939	939	939	939	940	940	940	941	941	942	942	942	942	938	942	939	24		
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9	944	944	944	944	944	945	945	946	946	946	945	945	944	944	944	943	943	943	943	943	943	943	943	943	943	943	946	944	24	
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14	936	936	936	936	937	937	937	937	937	937	937	937	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	936	24	
15	936	937	937	937	936	937	937	937	937	937	937	937	937	937	937	937	937	937	937	938	938	938	939	939	939	936	939	937	24	
16	939	939	939	939	939	939	940	940	940	941	941	941	941	942	941	942	942	943	943	944	944	945	945	945	939	945	941	24		
17	946	946	947	947	947	948	948	949	949	949	949	949	948	948	948	947	947	947	946	946	947	946	946	946	946	946	949	947	24	
18	946	946	945	945	945	944	944	945	944	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	942	942	946	944	24	
19	942	942	942	942	942	942	942	943	942	942	942	942	941	941	941	941	941	941	941	941	942	942	943	943	941	943	942	24		
20	943	943	944	944	944	945	945	946	946	946	946	946	946	946	945	945	945	945	945	946	946	947	947	947	943	947	945	24		
21	947	947	947	948	948	948	948	949	948	948	948	948	948	947	947	946	946	946	946	946	946	946	946	946	946	946	949	947	24	
22	947	947	947	947	947	947	947	947	946	946	945	945	945	945	945	945	944	944	943	942	942	941	941	941	941	947	945	24		
23	941	940	940	939	939	939	939	938	938	937	936	935	935	933	932	931	930	929	928	927	926	925	925	925	925	925	941	934	24	
24	926	926	926	927	927	927	928	929	930	931	932	932	932	933	933	933	934	934	935	935	936	936	937	937	926	937	932	24		
25	938	938	938	939	939	940	940	940	940	939	939	938	938	938	938	938	937	937	937	937	937	937	937	937	937	937	940	938	24	
26	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	24	
27	938	938	939	939	941	942	943	944	945	946	946	947	947	947	948	948	948	949	949	950	950	951	951	952	938	952	946	24		
28	952	952	953	953	953	954	954	955	955	955	954	954	954	953	953	952	952	952	951	951	951	951	951	951	951	951	951	953	24	
29	951	951	951	951	951	950	950	950	950	949	949	949	949	948	948	947	947	946	946	945	945	945	945	945	945	945	951	948	24	
30	945	944	944	944	944	943	943	942	942	942	941	940	940	939	939	938	938	937	937	936	936	936	936	936	936	936	945	940	24	
31	936	935	934	934	934	934	934	934	933	933	933	933	934	934	934	934	934	934	933	933	933	933	933	933	933	933	936	934	24	
HOURLY MAX	952	952	953	953	953	954	954	955	955	955	954	954	954	953	953	952	952	952	951	951	951	951	951	951	951	951	951	952		
HOURLY AVG	941	941	941	941	941	941	941	942	942	942	941	941	941	941	941	940	940	940	940	940	940	940	940	941						

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

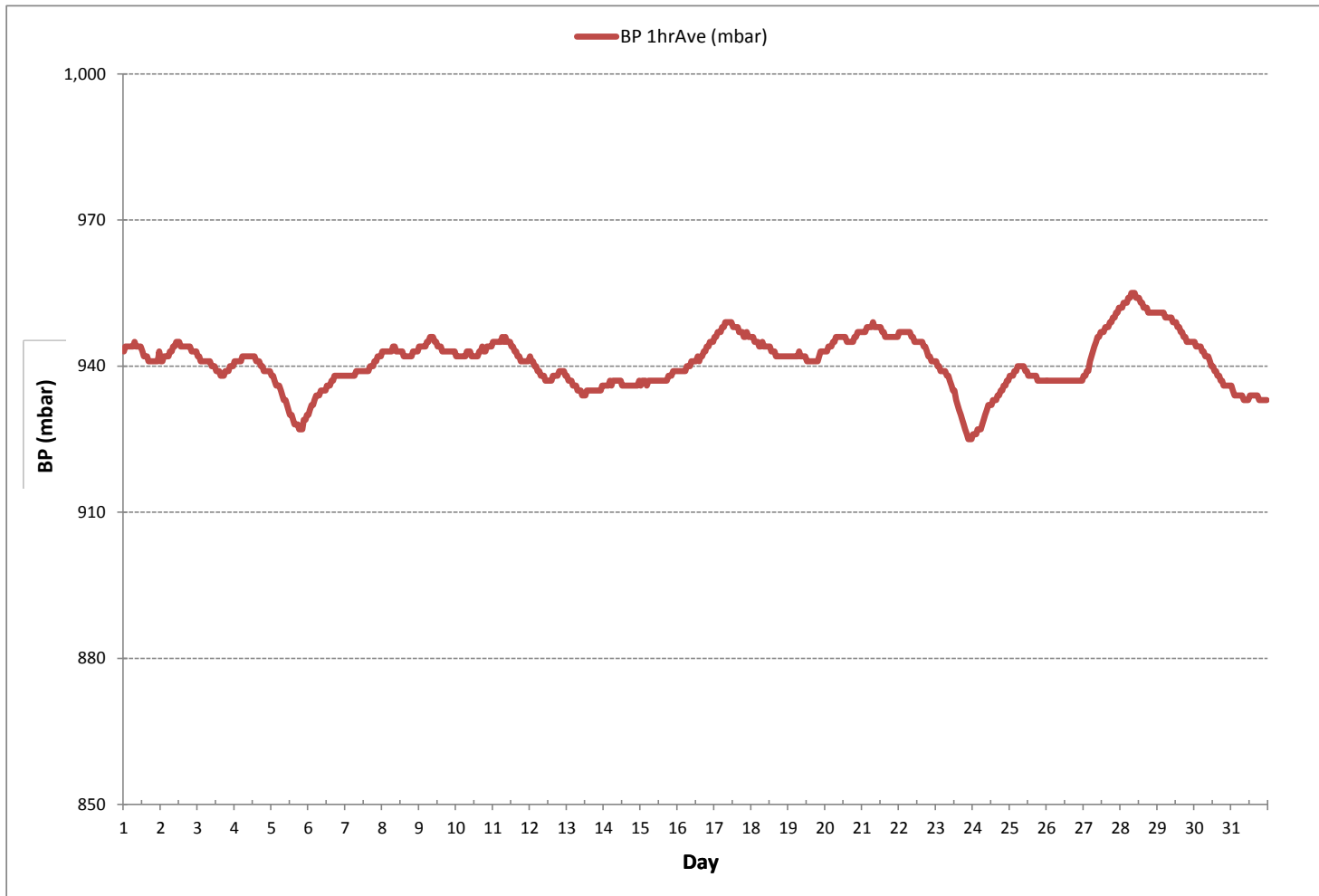
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	925 mbar	@ HOUR	21	ON DAY	23
MAXIMUM 1-HR AVERAGE:	955 mbar	@ HOUR	7	ON DAY	28
MAXIMUM 24-HR AVERAGE:	953 mbar			ON DAY	28
OPERATIONAL TIME:					744 hrs
AMD OPERATION UPTIME:					100.0 %
STANDARD DEVIATION:	5	MONTHLY AVERAGE:			941 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



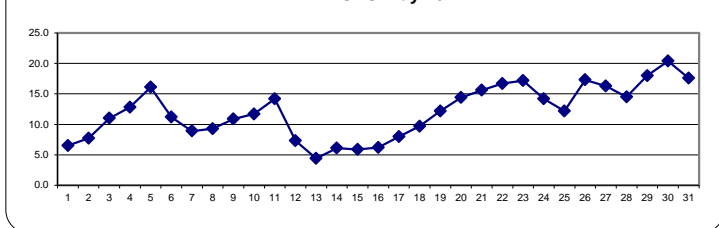
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	1.4	1.2	-0.7	-1.8	-2.3	-2.6	-0.1	3.7	6.2	8.2	9.0	10.5	11.7	12.1	13.0	12.7	13.3	11.8	9.4	9.1	8.3	7.9	7.4	6.1	-2.6	13.3	6.5	24
2	4.5	2.6	1.2	1.1	1.9	2.5	2.7	3.9	7.2	8.1	8.4	10.3	12.2	14.0	13.0	14.2	14.1	14.2	13.5	12.1	9.0	4.7	3.9	4.3	1.1	14.2	7.7	24
3	3.1	4.3	4.2	3.7	3.0	2.3	4.3	5.9	8.7	10.8	13.2	14.6	16.0	17.1	17.7	17.9	17.7	17.5	16.8	15.6	14.4	13.3	12.3	10.2	2.3	17.9	11.0	24
4	10.1	8.9	8.1	7.8	7.0	6.9	8.7	11.3	15.4	16.7	15.3	16.2	17.5	17.8	18.3	18.8	18.5	18.1	17.7	15.8	11.6	7.8	6.4	6.1	6.1	18.8	12.8	24
5	8.2	7.0	7.1	9.6	9.7	9.3	10.8	13.9	16.8	17.4	17.8	18.3	19.7	22.2	23.2	24.6	24.5	24.6	24.4	22.4	17.3	14.3	12.1	10.3	7.0	24.6	16.1	24
6	9.4	10.3	9.9	9.9	9.0	8.1	8.9	9.1	9.8	11.6	13.2	14.3	16.1	15.9	14.8	14.5	13.2	12.8	11.5	10.9	10.0	9.4	8.6	7.9	7.9	16.1	11.2	24
7	7.1	5.9	4.0	2.9	3.1	3.9	5.0	6.2	8.1	9.3	10.9	11.4	12.9	14.5	14.4	11.9	12.0	11.5	11.6	11.9	9.6	7.8	9.0	8.2	2.9	14.5	8.9	24
8	7.6	5.0	2.8	0.4	-0.5	0.5	3.7	6.9	9.0	10.7	12.1	13.1	14.5	13.9	14.0	14.4	14.9	14.5	14.2	14.2	12.4	9.9	9.0	6.0	-0.5	14.9	9.3	24
9	7.1	6.2	5.7	3.1	1.3	1.6	5.1	7.4	9.7	11.9	13.8	15.4	16.7	17.6	18.4	19.0	17.8	17.6	17.3	16.5	12.7	7.5	6.1	5.0	1.3	19.0	10.9	24
10	4.1	4.0	3.3	3.7	5.8	6.4	8.8	10.5	12.5	16.1	19.0	18.3	17.6	18.7	18.3	17.3	15.4	14.1	16.1	15.9	12.8	9.0	7.1	5.6	3.3	19.0	11.7	24
11	5.2	6.6	6.6	7.4	7.5	7.0	8.8	11.4	13.2	14.8	18.1	18.1	20.0	18.9	19.7	20.8	20.9	19.2	19.4	17.9	16.3	15.4	14.6	13.1	5.2	20.9	14.2	24
12	11.1	8.8	8.0	8.3	7.8	6.8	6.7	6.7	6.8	7.5	8.2	7.4	7.5	7.1	7.1	7.0	6.9	6.8	6.8	6.6	6.5	6.3	6.2	6.0	6.0	11.1	7.3	24
13	5.6	5.2	4.9	4.7	4.4	3.8	3.3	3.0	2.7	2.9	3.4	3.5	3.8	4.7	5.1	4.9	4.9	5.2	5.5	5.4	5.0	4.5	4.2	3.9	2.7	5.6	4.4	24
14	3.5	3.1	2.5	2.1	2.4	2.9	3.2	3.6	4.0	4.4	5.2	5.9	7.3	9.2	9.1	10.7	10.8	12.0	11.3	9.9	7.5	6.0	5.4	3.6	2.1	12.0	6.1	24
15	3.5	3.5	3.6	3.5	3.2	3.2	3.4	3.4	4.7	5.6	6.4	8.1	9.0	9.8	9.6	10.4	10.8	9.1	7.3	6.4	5.0	4.4	4.1	3.8	3.2	10.8	5.9	24
16	3.4	3.2	3.0	3.0	3.2	3.3	3.8	4.4	6.0	7.0	8.6	9.8	10.5	10.4	12.3	11.3	8.2	8.1	9.1	9.1	6.7	3.1	1.1	0.0	0.0	12.3	6.2	24
17	-0.7	-0.4	-0.8	-0.2	0.6	2.1	4.4	7.0	8.6	9.5	10.8	11.3	12.5	12.7	12.9	13.5	14.5	14.1	13.4	11.9	11.1	8.3	8.0	6.9	-0.8	14.5	8.0	24
18	5.6	4.8	4.0	2.7	3.0	4.4	5.2	5.2	7.0	9.6	11.0	12.6	13.2	14.6	12.8	12.6	14.8	15.5	15.8	15.6	13.0	11.1	9.8	7.8	2.7	15.8	9.7	24
19	5.7	4.7	4.5	4.8	4.8	5.5	8.0	9.9	11.9	13.4	14.8	16.3	17.1	16.8	17.7	18.1	18.2	18.3	17.5	16.5	12.2	11.8	12.2	11.3	4.5	18.3	12.2	24
20	9.9	10.5	9.7	7.9	5.4	4.1	9.9	12.0	14.1	15.9	17.6	18.8	19.6	19.9	20.3	20.6	21.3	21.1	20.1	18.9	16.8	14.1	10.2	7.6	4.1	21.3	14.4	24
21	5.7	4.3	3.6	3.7	3.5	5.8	9.6	14.8	15.8	17.8	20.0	21.5	22.1	22.9	23.0	23.2	23.3	23.4	23.4	21.0	18.6	16.8	16.4	15.2	3.5	23.4	15.6	24
22	14.4	13.9	12.5	11.5	10.8	11.3	12.0	14.4	17.0	19.0	20.3	20.2	20.3	20.6	20.4	20.5	20.2	19.5	18.7	18.2	16.6	15.6	14.8	10.8	20.6	16.7	24	
23	13.8	13.9	14.9	14.7	13.2	12.1	13.0	14.6	15.8	16.9	17.8	18.6	19.7	20.5	22.1	22.2	22.5	21.7	20.5	19.3	17.9	16.2	15.2	14.6	12.1	22.5	17.2	24
24	11.7	10.5	10.4	10.0	9.7	9.6	9.9	10.3	11.9	14.3	17.3	19.9	19.5	19.7	19.0	20.2	19.9	19.3	18.2	15.2	13.7	11.7	10.4	8.8	8.8	20.2	14.2	24
25	7.5	7.3	7.2	5.7	4.2	3.5	8.9	13.0	13.8	14.5	16.2	18.5	17.8	17.8	15.9	15.3	14.9	15.4	15.7	16.2	12.7	10.5	11.1	10.3	3.5	18.5	12.2	24
26	9.2	8.8	8.2	7.7	7.2	8.3	12.3	15.2	18.2	20.1	22.5	23.8	24.3	24.7	24.9	23.4	23.2	23.5	22.9	22.2	20.0	16.6	15.8	12.8	7.2	24.9	17.3	24
27	9.5	7.6	6.1	5.7	7.0	9.8	13.9	16.6	18.9	20.3	21.8	22.7	23.5	22.8	23.3	23.7	23.5	23.0	22.0	20.6	17.9	13.3	10.0	6.8	5.7	23.7	16.3	24
28	5.0	3.9	3.4	2.8	2.5	4.5	9.9	12.5	14.8	16.9	19.2	19.2	19.8	22.1	21.8	22.2	23.3	22.5	21.7	20.2	18.4	15.5	13.7	12.1	2.5	23.3	14.5	24
29	12.4	11.3	9.6	9.9	9.6	10.5	13.0	15.6	17.6	19.7	20.7	22.0	22.9	24.0	24.0	24.1	24.0	23.8	23.0	21.7	20.0	18.5	17.0	16.1	9.6	24.1	18.0	24
30	15.0	13.8	13.0	12.7	12.2	12.6	14.9	17.0	19.1	21.0	22.6	24.4	25.4	26.2	26.9	27.3	27.3	26.4	25.4	25.0	23.5	21.1	19.3	18.0	12.2	27.3	20.4	24
31	16.0	13.2	13.8	13.9	12.2	11.5	13.8	16.4	18.4	21.4	21.4	22.7	22.8	22.8	21.8	21.0	20.6	20.8	21.3	20.9	18.6	14.0	11.9	11.3	11.3	22.8	17.6	24
HOURLY MAX	16.0	13.9	14.9	14.7	13.2	12.6	14.9	17.0	19.1	21.4	22.6	24.4	25.4	26.2	26.9	27.3	27.3	26.4	25.4	25.0	23.5	21.1	19.3	18.0				
HOURLY AVG	7.6	6.9	6.3	5.9	5.6	5.9	7.9	9.9	11.7	13.3	14.7	15.7	16.6	17.2	17.3	17.4	17.3	17.0	16.5	15.6	13.5	11.2	10.1	8.9				

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

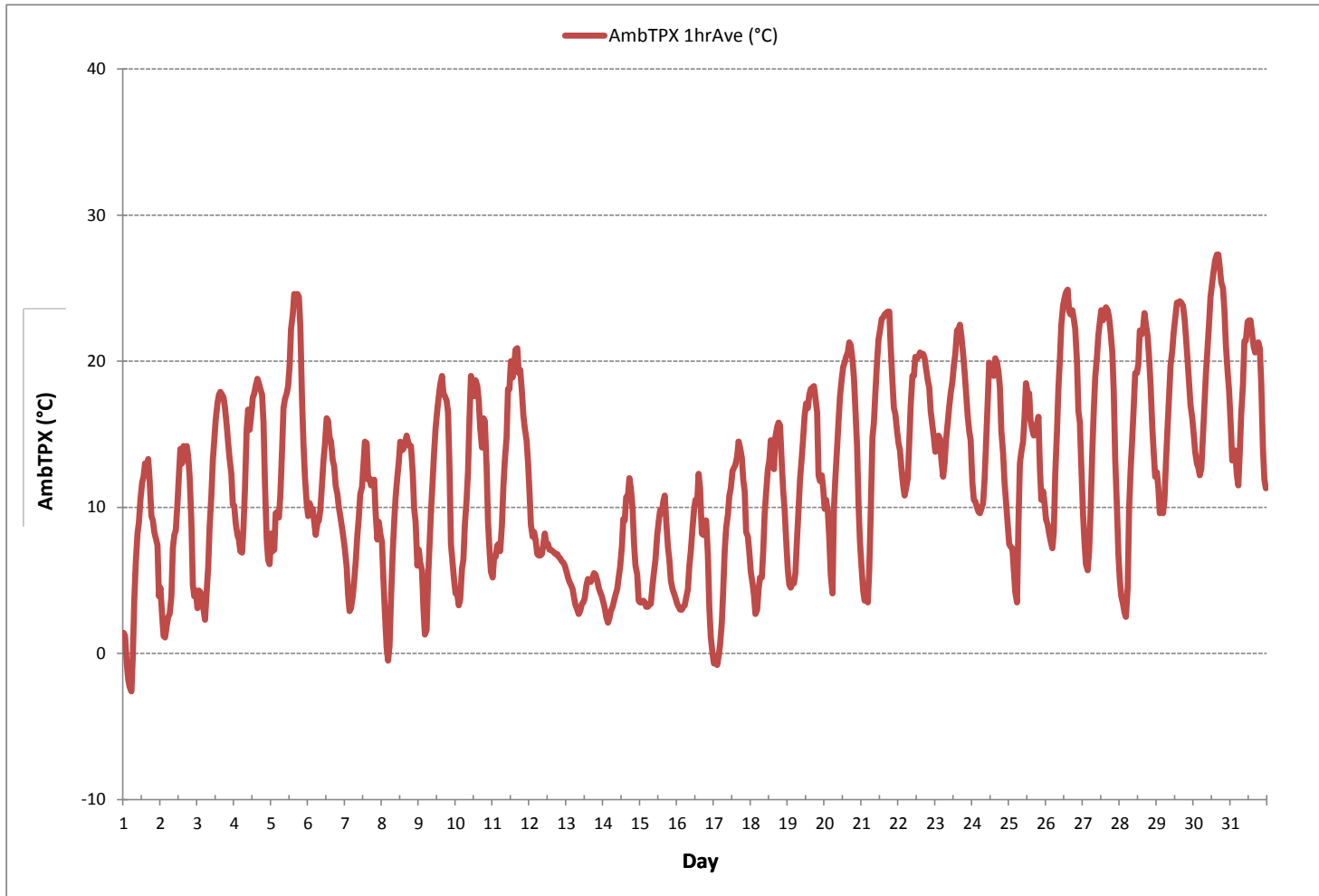
24 HR AVERAGES May 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-2.6 °C	@ HOUR	5	ON DAY	1
MAXIMUM 1-HR AVERAGE:	27.3 °C	@ HOUR	15	ON DAY	30
MAXIMUM 24-HR AVERAGE:	20.4 °C			ON DAY	30
OPERATIONAL TIME:				744	hrs
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	6.4	MONTHLY AVERAGE:		12.1	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

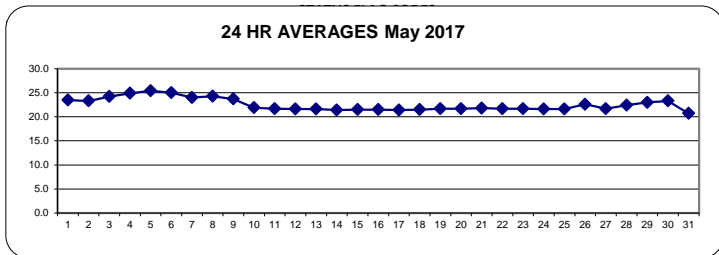


STATION TEMPERATURE



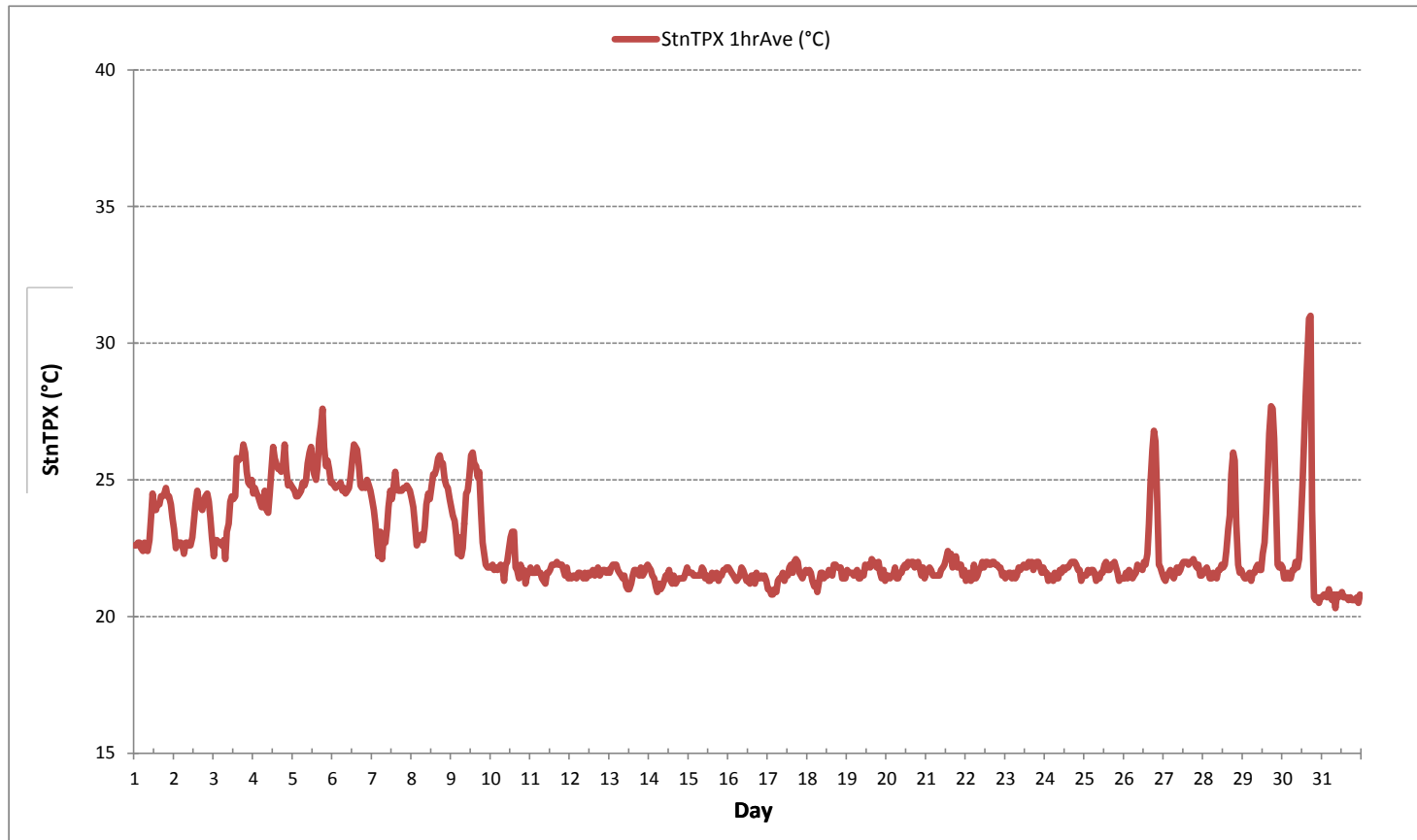
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	22.6	22.6	22.7	22.7	22.5	22.4	22.7	22.5	22.4	22.8	23.6	24.5	23.9	23.9	24.1	24.1	24.4	24.4	24.5	24.7	24.4	24.4	24.1	23.7	22.4	24.7	23.5	24	
2	23.2	22.5	22.7	22.7	22.7	22.6	22.3	22.7	22.7	22.6	22.6	22.9	23.5	24.1	24.6	24.2	24.0	23.9	24.2	24.4	24.5	24.2	23.6	22.9	22.3	24.6	23.3	24	
3	22.2	22.8	22.8	22.7	22.7	22.6	22.8	22.1	23.1	23.4	24.2	24.4	24.3	24.4	25.8	25.7	25.8	25.8	26.3	26.0	25.3	24.9	24.8	25.0	22.1	26.3	24.2	24	
4	24.5	24.7	24.5	24.4	24.2	24.0	24.0	24.6	23.9	23.8	24.5	25.3	26.2	25.8	25.6	25.4	25.4	25.3	25.6	26.3	25.4	24.8	24.9	24.8	23.8	26.3	24.9	24	
5	24.7	24.6	24.4	24.4	24.5	24.6	24.9	24.8	25.0	25.6	26.0	26.2	25.6	25.2	25.0	25.5	26.5	27.0	27.6	26.2	25.5	25.7	25.4	24.9	24.4	24.7	25.4	24	
6	24.9	24.8	24.7	24.8	24.8	24.9	24.6	24.7	24.5	24.6	24.7	25.1	25.8	26.3	26.2	26.1	25.5	24.8	24.7	24.8	24.7	25.0	24.8	24.6	24.5	26.3	25.0	24	
7	24.3	23.9	23.4	22.7	22.2	23.1	22.1	22.8	22.7	23.2	24.0	24.6	24.3	24.7	25.3	24.7	24.6	24.6	24.6	24.7	24.7	24.8	24.7	24.6	22.1	25.3	24.0	24	
8	24.3	24.0	23.4	22.6	22.8	22.8	23.0	22.8	23.3	24.1	24.5	24.3	24.7	25.2	25.2	25.4	25.8	25.9	25.6	25.6	25.0	24.8	24.7	24.3	22.6	25.9	24.3	24	
9	24.0	23.7	23.5	23.0	22.3	22.9	22.2	22.5	23.4	24.5	24.6	25.1	25.9	26.0	25.6	25.5	25.1	25.3	23.8	22.7	22.3	21.9	21.8	21.8	21.8	26.0	23.7	24	
10	21.8	21.9	21.7	21.8	21.7	21.8	21.9	21.8	21.3	21.9	22.0	22.5	22.9	23.1	23.1	21.8	21.7	21.4	21.9	21.7	21.7	21.7	21.2	21.5	21.6	21.2	23.1	21.9	24
11	21.8	21.6	21.6	21.6	21.8	21.6	21.6	21.4	21.3	21.2	21.6	21.6	21.7	21.9	21.9	21.9	22.0	21.9	21.9	21.9	21.7	21.5	21.8	21.4	21.2	22.0	21.7	24	
12	21.5	21.4	21.5	21.5	21.4	21.6	21.6	21.5	21.4	21.6	21.4	21.6	21.5	21.6	21.7	21.5	21.6	21.8	21.5	21.6	21.7	21.7	21.6	21.7	21.4	21.8	21.6	24	
13	21.6	21.8	21.9	21.9	21.9	21.7	21.6	21.5	21.4	21.5	21.1	21.0	21.0	21.2	21.5	21.7	21.7	21.6	21.5	21.8	21.5	21.6	21.8	21.9	21.0	21.9	21.6	24	
14	21.8	21.7	21.5	21.4	21.1	20.9	21.2	21.0	21.1	21.3	21.5	21.5	21.7	21.3	21.2	21.5	21.2	21.3	21.4	21.4	21.4	21.4	21.6	21.8	20.9	21.8	21.4	24	
15	21.6	21.6	21.6	21.5	21.5	21.5	21.5	21.5	21.8	21.7	21.4	21.5	21.3	21.3	21.6	21.4	21.5	21.6	21.3	21.5	21.5	21.7	21.7	21.8	21.3	21.8	21.5	24	
16	21.8	21.7	21.6	21.5	21.4	21.3	21.4	21.5	21.8	21.7	21.5	21.3	21.3	21.2	21.5	21.2	21.6	21.4	21.4	21.4	21.5	21.4	21.5	21.3	21.2	21.8	21.5	24	
17	21.0	21.0	20.8	20.8	21.0	20.9	21.3	21.4	21.4	21.6	21.3	21.5	21.5	21.8	21.9	21.6	22.0	22.1	22.0	21.6	21.5	21.4	21.6	21.7	20.8	22.1	21.4	24	
18	21.6	21.7	21.6	21.3	21.1	21.2	20.9	21.3	21.6	21.6	21.4	21.5	21.5	21.7	21.6	21.5	21.9	21.9	21.8	21.8	21.8	21.4	21.4	21.4	20.9	21.9	21.5	24	
19	21.7	21.6	21.6	21.6	21.5	21.6	21.7	21.4	21.4	21.6	21.5	21.9	21.8	21.9	21.8	22.1	22.0	21.9	21.8	22.0	21.6	21.4	21.7	21.3	21.3	22.1	21.7	24	
20	21.5	21.5	21.4	21.5	21.5	21.8	21.4	21.4	21.6	21.6	21.8	21.9	21.8	22.0	21.9	22.0	22.0	21.8	21.9	22.0	21.8	21.5	21.8	21.4	21.4	22.0	21.7	24	
21	21.6	21.7	21.8	21.7	21.5	21.5	21.5	21.5	21.5	21.7	21.8	21.9	22.1	22.4	22.2	22.3	21.8	22.0	22.2	21.8	21.9	21.9	21.5	21.7	21.5	22.4	21.8	24	
22	21.3	21.4	21.6	21.3	21.4	21.9	21.4	21.5	21.7	21.8	22.0	21.8	22.0	22.0	21.9	21.9	22.0	22.0	21.9	21.9	21.8	21.8	21.5	21.6	21.3	22.0	21.7	24	
23	21.4	21.5	21.6	21.6	21.4	21.6	21.4	21.5	21.8	21.7	21.8	21.9	21.8	21.8	22.0	21.9	22.0	21.7	21.9	22.0	22.0	21.8	21.6	21.8	21.4	22.0	21.7	24	
24	21.6	21.6	21.3	21.5	21.4	21.3	21.6	21.4	21.4	21.7	21.6	21.8	21.7	21.8	21.8	21.9	22.0	22.0	22.0	21.9	21.7	21.7	21.3	21.5	21.3	22.0	21.6	24	
25	21.5	21.5	21.7	21.6	21.7	21.7	21.6	21.3	21.4	21.4	21.6	21.4	21.9	22.0	21.7	21.7	21.9	22.0	22.0	21.8	21.6	21.3	21.4	21.4	21.3	22.0	21.6	24	
26	21.4	21.6	21.4	21.7	21.6	21.4	21.5	21.6	21.9	21.8	21.8	21.7	22.0	21.9	22.3	23.4	24.9	26.1	26.8	26.4	24.1	21.9	21.8	21.6	21.4	26.8	22.6	24	
27	21.4	21.3	21.5	21.6	21.7	21.5	21.4	21.6	21.8	21.6	21.7	21.9	22.0	22.0	21.9	22.0	22.0	22.1	21.9	21.8	21.9	21.5	21.5	21.3	22.1	21.7	24		
28	21.6	21.7	21.8	21.6	21.4	21.4	21.6	21.5	21.4	21.7	21.7	21.9	21.8	21.9	22.4	23.2	23.7	25.2	26.0	25.7	23.4	21.9	21.6	21.7	21.4	26.0	22.4	24	
29	21.5	21.4	21.4	21.5	21.6	21.3	21.6	21.6	21.8	21.9	21.7	21.7	22.3	22.7	23.8	25.2	26.7	27.7	27.6	26.5	24.1	21.9	21.8	21.9	21.3	27.7	23.0	24	
30	21.8	21.4	21.4	21.6	21.4	21.4	21.7	21.7	22.0	21.8	22.1	23.2	24.8	26.4	28.0	29.6	30.9	31.0	33.9	30.7	20.6	20.7	20.5	20.7	20.5	31.0	23.3	24	
31	20.7	20.8	20.8	20.7	21.0	20.7	20.6	20.8	20.3	20.8	20.7	20.8	20.9	20.7	20.7	20.7	20.6	20.7	20.6	20.6	20.6	20.7	20.5	20.8	20.3	21.0	20.7	24	
HOURLY MAX	24.9	24.8	24.7	24.8	24.8	24.9	24.9	24.8	25.0	25.6	26.0	26.2	26.2	26.4	28.0	29.6	30.9	31.0	27.6	26.5	25.5	25.7	25.4	25.0					
HOURLY AVG	22.2	22.2	22.1	22.0	22.0	22.0	22.0	22.0	22.1	22.3	22.4	22.6	22.8	22.9	23.1	23.2	23.4	23.5	23.3	23.1	22.7	22.4	22.3	22.3					



MONTHLY SUMMARY						
MINIMUM 1-HR AVERAGE:	20.3	°C	@ HOUR	8	ON DAY	31
MAXIMUM 1-HR AVERAGE:	31.0	°C	@ HOUR	17	ON DAY	30
MAXIMUM 24-HR AVERAGE:	25.4	°C			ON DAY	5
OPERATIONAL TIME:						744 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	1.6				MONTHLY AVERAGE:	22.5 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100A Sulphur Dioxide Analyzer Calibration

Date: May 10, 2017	Barometric Pressure: 27.76 inHg
Company/Airshed: PRAMP	Station Temperature °C: 21
Location/Station Name: 842b	Weather Conditions: Mainly sunny
Parameter: Sulphur Dioxide	Calibration Purpose: routine monthly
Start Time 24 hr. (mst): 9:10	Performed By/Reviewer: Michael Espiritu Trina Whitsitt
End Time 24 hr. (mst): 12:24	Cal Gas Expiry Date: December 2, 2019
Calibration Method: Gas Dilution	Converter Model & s/n (if applicable): n/a

Analyzer:	
ID# or Serial Number: 838	Range ppb: 500
Last Calibration Date: April 19, 2017	As Found C.F.: 1.021
Previous C.F.: 1.000	New C.F.: 0.998

Calibrator:	Standard Calibration Points for Ranges								
Flow Meter ID's: Defender SN: 148944 & 152019	<table border="1" style="margin: auto;"> <tr><th>Point</th><th>ppb</th></tr> <tr><td>High</td><td>380</td></tr> <tr><td>Mid</td><td>180</td></tr> <tr><td>Low</td><td>90</td></tr> </table>	Point	ppb	High	380	Mid	180	Low	90
Point	ppb								
High	380								
Mid	180								
Low	90								
Make & Model: Sabio 2010									
Serial #: 042531101(0911)									
Cal Gas Cylinder I.D. #: LL119329									
Cal Gas Conc. (ppm): 50.1									

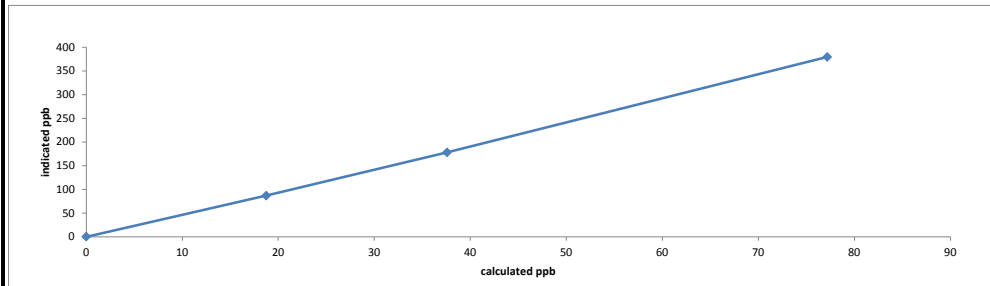
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	6047	0.00	6047	0.0	0.1	n/a
as found high	5999	45.65	6045	378.4	370.6	1.021
adjusted zero	6047	0.00	6047	0.0	0.1	n/a
adjusted high	5999	45.65	6045	378.4	379.3	0.998
mid	6009	21.29	6030	176.9	177.8	0.995
low	6014	10.44	6024	86.8	86.6	1.004
calibrator zero	6047	0.00	6047	0.0	0.1	n/a
Average C.F. =						0.999

Linear Regression/Calibration Results:

Correlation Coefficient = 1.000	LIMITS
Slope = 0.997	> or = 0.995
b (Intercept as % of full scale) = 0.00%	.95-1.05
% change in C.F. from last cal = -2.12%	± 3% F.S.
	± 10%

API 100A Sulphur Dioxide Analyzer Calibration



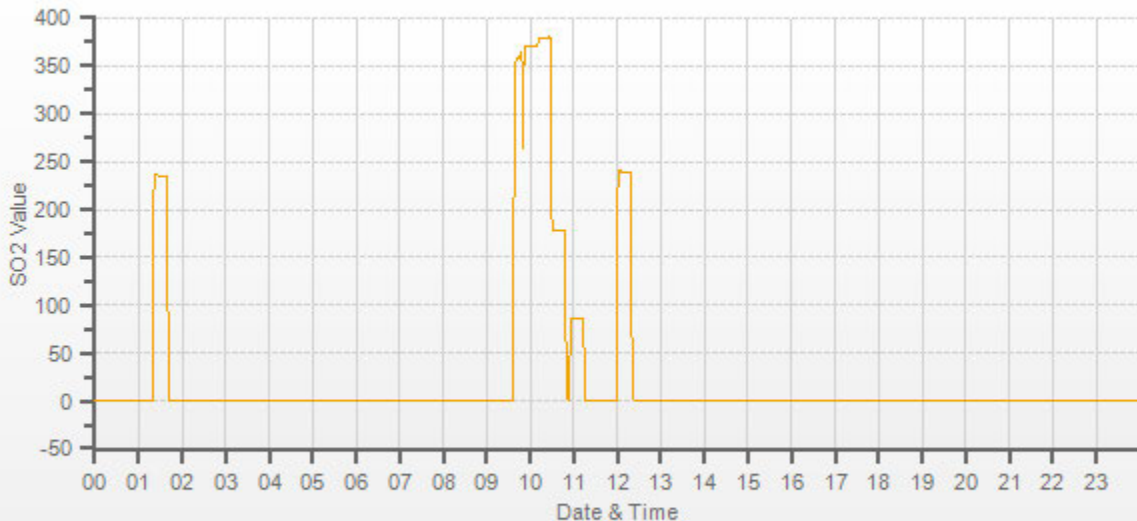
SLOPE: 1.027	SLOPE: 1.049
OFFSET: 19.3	OFFSET: 19.3
HVPS: 686	HVPS: 686
DCPS: 2545	DCPS: 2545
RCELL TEMP: 51	RCELL TEMP: 49.5
BOX TEMP: 30.3	BOX TEMP: 31.1
PMT TEMP: 7.2	PMT TEMP: 7.2
IZS TEMP: 60.2	IZS TEMP: 60.1
Converter Temp: n/a	Converter Temp: n/a
PRES: 26.6	PRES: 26.6
SAMP FL: 642	SAMP FL: 642
PMT: 57	PMT: 57
UV LAMP: 2189	UV LAMP: 2100
LAMP RATIO: 87.7	LAMP RATIO: 84.7
STR. LGT: 9.9	STR. LGT: 10.1
DRK PMT: 34.5	DRK PMT: 34.4
DRK LMP: -7.1	DRK LMP: -7
Expected Value: 230.0	Expected Value: 238.9

Comments:

The analyzer sample inlet filter was changed.

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

As found high restarted at 9:49 to evacuate and purge calibration gas pressure regulator.
Flow measurements after mid-point



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date: May 10, 2017	Barometric Pressure: 27.76 inHg
Company/Airshed: PRAMP	Station Temperature °C: 21
Location/Station Name: 842b	Weather Conditions: Mainly sunny
Parameter: Total Reduced Sulphur	Calibration Purpose: routine monthly
Start Time 24 hr. (mst): 9:10	Performed By/Reviewer: Michael Espiritu / Trina Whitsitt
End Time 24 hr. (mst): 12:40	Cal Gas Expiry Date: July 15, 2017
Calibration Method: Gas Dilution	Converter Model & s/n (if applicable): CD NOVA CDN 101/ SN:553

Analyzer:	Range ppb: 100
ID# or Serial Number: 1162460023	As Found C.F.: 0.971
Last Calibration Date: April 19, 2017	New C.F.: 1.000
Previous C.F.: 0.999	

Calibrator: Flow Meter ID's: Defender SN: 148944 & 152019 Make & Model: API 700 Serial #: 831 Cal Gas Cylinder I.D. #: LL74267 Cal Gas Conc. (ppm): 9.9	Standard Calibration Points for Ranges <table border="1" style="margin: auto;"> <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	SO₂ Scrubber Check (10 mins.) Start/End Time 24 hr.: 9:35 - 9:45 Target Concentration (ppb): 780 Result (ppb): 0 Zero Corrected Result (ppb): 0
Point	ppb									
High	78									
Mid	38									
Low	19									

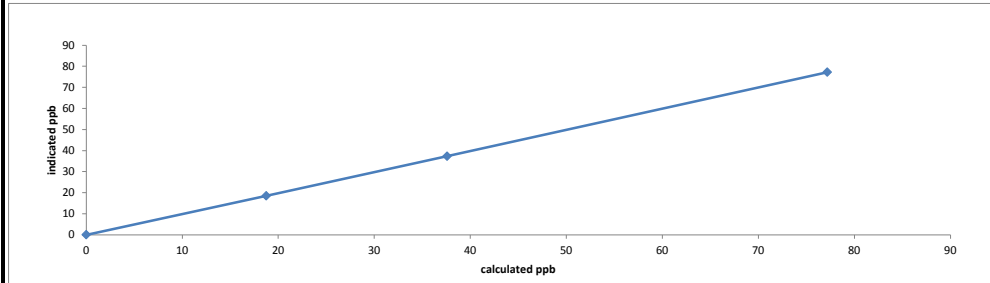
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	7603	0.00	7603	0.0	0.0	n/a
as found high	7551	59.45	7610	77.2	79.5	0.971
adjusted zero	7603	0.00	7603	0.0	0.0	n/a
adjusted high	7551	59.45	7610	77.2	77.2	1.000
mid	7587	28.97	7616	37.6	37.3	1.008
low	7610	14.47	7624	18.8	18.5	1.014
calibrator zero	7603	0.00	7603	0.0	0.0	n/a
Average C.F. =						1.007

Linear Regression/Calibration Results:

Correlation Coefficient = 1.000	LIMITS
Slope = 0.999	> or = 0.995
b (Intercept as % of full scale) = 0.16%	.95-1.05
% change in C.F. from last cal = 2.82%	± 3% F.S.
	± 10%

Thermo 43i Total Reduced Sulphur Analyzer Calibration



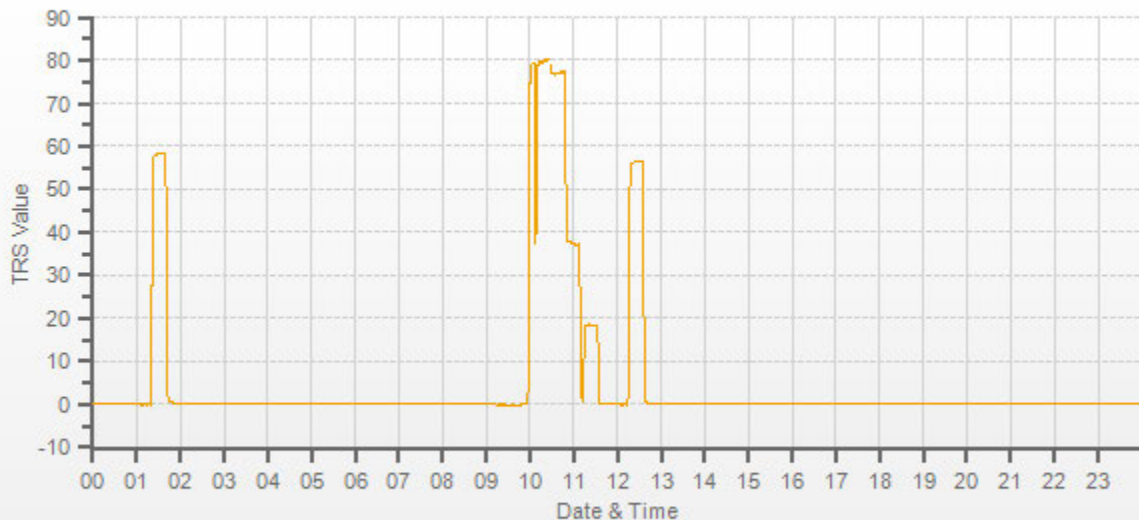
BKG: 2.63	BKG: 2.53
COEF: .855	COEF: .825
PMT: -725.5	PMT: -725.6
FLASH: 986	FLASH: 987
INTERNAL: 30.8	INTERNAL: 31.7
CHAMBER: 45	CHAMBER: 45
PERM OVEN GAS: 45	PERM OVEN GAS: 45
PERM OVEN HEATER: 44.11	PERM OVEN HEATER: 44.12
PRESSURE: 664.5	PRESSURE: 663.9
SAMPLE FLOW: .408	SAMPLE FLOW: .408
LAMP INTENSITY: 89	LAMP INTENSITY: 89
CONVERTER: 850	CONVERTER: 850
CONVERTER SET: 850	CONVERTER SET: 850
Expected Value: 57.5	Expected Value: 56.5

Comments:

The analyzer sample inlet filter was changed. The analyzer cooling fan filter(s) were cleaned.

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

As found high interrupted to check the calibration gas flows. Restart at 10:07.
Flow measurements after mid-point



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

remove

Date: May 10, 2017	Barometric Pressure: 27.76 inHg
Company/Airshed: PRAMP	Station Temperature °C: 21
Location/Station Name: 842b	Weather Conditions: Mainly sunny
Parameter: CH ₄ / NMHC / THC	Calibration Purpose: routine monthly
Start/End Time 24 hr. (mst): 12:10 - 15:22	Performed By/Reviewer: Michael Espiritu Trina Whitsitt
Calibration Method: Gas Dilution	Cal Gas Expiry Date: November 25, 2023

Analyzer:		Correction Factors:		
ID# or Serial Number: 1433563261		Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow: 1131sccm		CH ₄ = 1.001	1.024	0.997
Last Calibration Date: April 23, 2017		NMHC = 1.000	0.971	0.999
Range ppm: 20 CH ₄ /20 NMHC/40 THC		THC = 1.000	0.996	0.998

Calibrator:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Flow Meter ID's: SN: 148944 & 152019		Point	CH₄	NMHC	THC
Make & Model: Sabio 2010		High	13.00	13.00	26.00
Serial #: 042531101(0911)		Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #: LL86139		Low	3.00	3.00	6.00
CH₄ Cylinder Conc.: 599.0 211.0 =C ₂ H ₆ Cylinder Conc.					
CH₄ as C₂H₆: 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)										Correction Factors:		
Point	Diluent	Cal Gas	Total Flow	Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
as found zero	2505	0.00	2505	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2456	56.24	2512	13.41	12.99	26.40	13.10	13.38	26.50	1.024	0.971	0.996
adjusted zero	2505	0.00	2505	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2456	56.24	2512	13.41	12.99	26.40	13.45	13.00	26.46	0.997	0.999	0.998
mid	2454	29.88	2484	7.21	6.98	14.19	7.20	7.00	14.20	1.001	0.997	0.999
low	2476	12.67	2489	3.05	2.95	6.00	3.05	3.05	6.06	1.000	0.969	0.991
calibrator zero	2505	0.00	2505	0.00	0.00	0.00	0.00	0.00	0.00	0.999	0.988	0.996

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	1.000	1.000	LIMITS	> or = 0.995
Slope =	1.003	0.998	1.002		.95-1.05
b (Intercept as % of full scale)=	-0.04%	0.21%	0.04%		± 3% F.S.
% change in C.F. from last cal=	-2.26%	2.92%	0.38%		± 10%

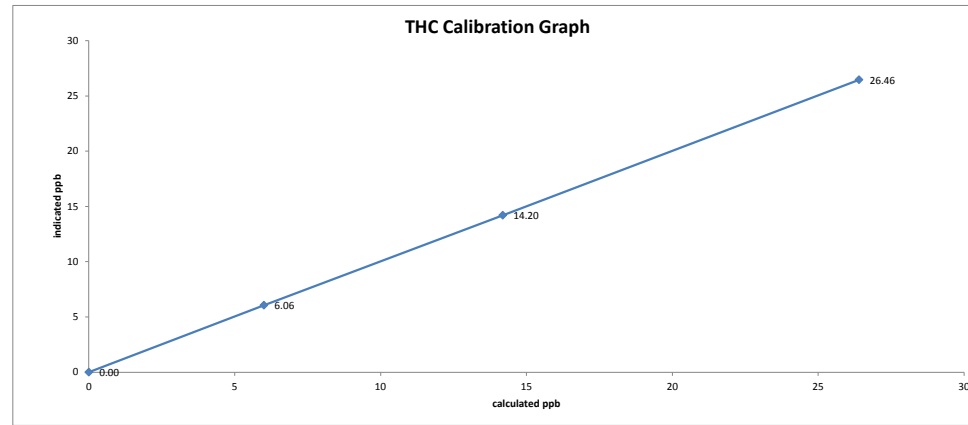
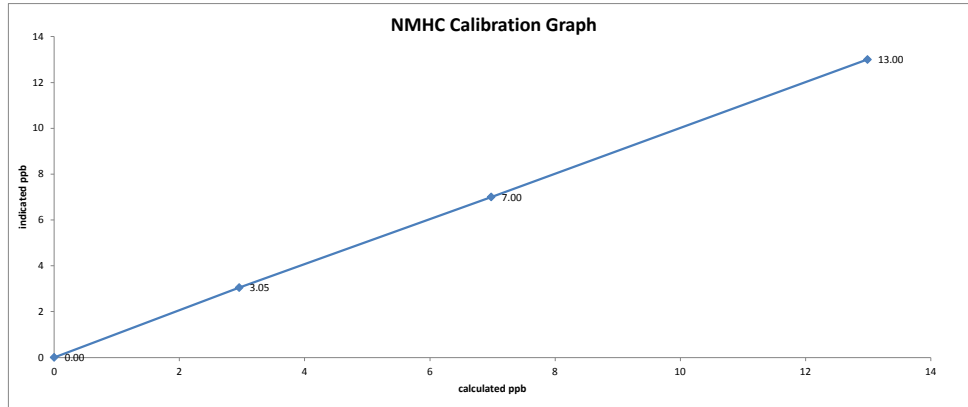
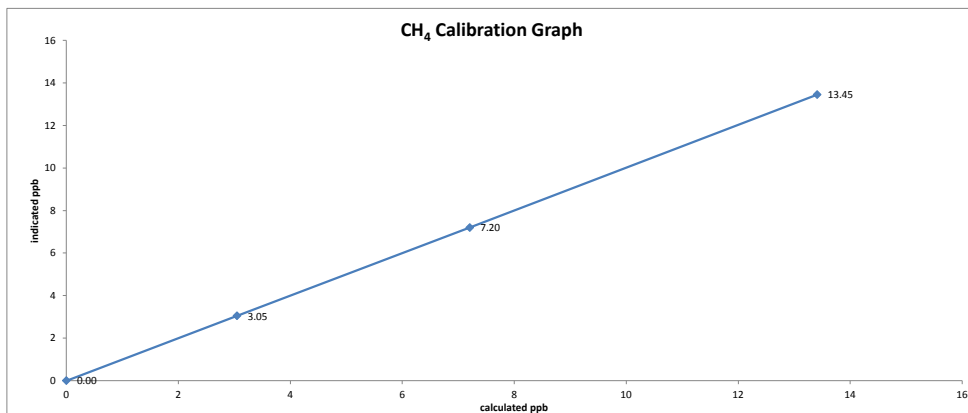
Interface Board Voltages: Bias Supply: -301.7	Calibration History cnt'd: NM Peak Area: 91879
Temperatures: Detector Oven: 175	Crucial Settings: Methane Start: n/a
	Methane End: n/a
	Backflush: n/a
	NMHC Start: n/a
Cylinder Pressures/reg.: Carrier: 1650 50	Run History>1: NMHC End: n/a
Fuel: 1000 50	Date: 10May17
Span Gas: 500 14	Time: 14:14
Zero Air Generator: 45	CH ₄ PK HT: 0
Internal Pressures: Carrier: 28.6	CH ₄ RT: 11.6
Fuel: 37.6	CH ₄ Baseline: 1819
Air: 34.3	CH ₄ LOD: 18
FID Status: Status: LIT	CH ₄ SD: 6
Counts: 22136	CH ₄ CONC: 0
Flame: 350.3	NM PK HT: 0
Det Base: 175	NM Peak Area: 0
Flame and Power Stats: Last Power On: 07April17@7:56:39	NM CONC: 0
Flameouts: 1	NM Base Start: 1824
Det Oven at Start: 160.5	NM Base End: 1859
Col Oven at Start: 72.5	NM LOD: 1866
Calibration History: Time: 23Apr17@12:03	NM Start IDX: 20
Type: Span	NM End IDX: 59
Status: Good	NM Max Slope: 2.1e+00
Check/Adjust: Adjust	NM Min Slope: -5.2e-01
CH ₄ Span Conc: 14.81	NM PT Count: 0
CH ₄ SP Ratio: .000701	Expected Values: Previous CH ₄ : 8.85
CH ₄ RT: 12.4	Previous NMHC: 11.04
CH ₄ PK IDX: 22	Previous THC: 19.91
CH ₄ PK HT: 21120	New CH ₄ : 10.14
NM Span Conc: 14.29	New NMHC: 10.83
NM SP Ratio: .000156	New THC: 20.98

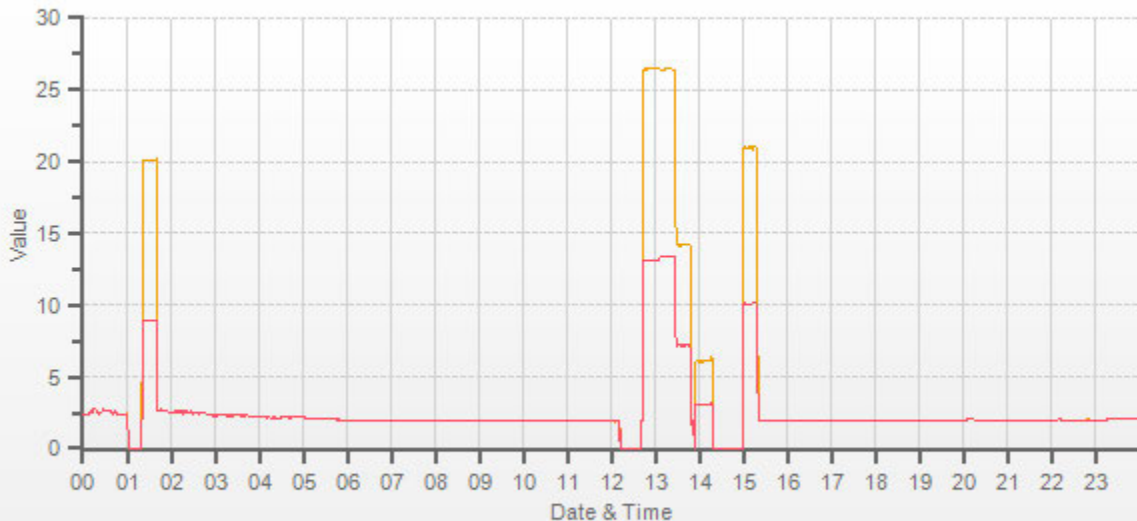
Comments:
 The analyzer sample inlet filter was changed. A new nitrogen cylinder was installed.
 A new hydrogen cylinder was installed. No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.
 The analyzer cooling fan filter(s)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

New span gas installed.
Flow measurements after mid-point.

Date: May 10, 2017
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 12:10 - 15:22
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution





— THC55[ppm] — CH4[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	Performed By:	Limin Li
Audit Location:	842b	Reviewed By:	Trina Whitsitt
Audit Date:	April 5, 2017	Start /EndTime (mst):	16:35 / 18:10

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 #:	92411	Direction Voltage Output Range:	0-1 V
Previous Cal/Audit Date:	February 14, 2017	Direction Unit Output Range:	0-360 degrees

Wind Calibrator Information

Calibrator Make/ Model:	RM Young 18802	Serial #:	CA 0309
Maxxam Unit ID #:	13-3357	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	0.0	0.0	-
1000	18.4	18.5	18.5	0.995
2000	36.9	36.9	36.9	1.000
3000	55.3	55.4	55.4	0.999
4000	73.7	73.8	73.8	0.999
5000	92.2	92.2	92.2	1.000
6000	110.6	110.7	110.7	0.999
7000	129.0	129.1	129.1	0.999
8000	147.4	147.5	147.5	0.999
9000	165.9	165.9	165.9	1.000
10000	184.3	184.3	184.3	1.000

The audit meets AMD requirements. Average Correction Factor= 0.999

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	351	0.8	3.6	2.2
30	330	31	327	-1.3	2.9	2.1
60	300	62	297	-1.7	3.0	2.3
90	270	91	268	-1.1	1.9	1.5
120	240	121	239	-0.7	1.5	1.1
150	210	150	209	-0.2	0.7	0.4
180	180	181	180	-0.6	-0.2	0.4
210	150	210	150	0.1	0.3	0.2
240	120	239	120	0.9	-0.3	0.6
270	90	268	91	1.6	-0.7	1.2
300	60	297	61	3.1	-1.3	2.2
330	30	327	31	3.0	-1.1	2.1
355	0	351	1	3.6	0.6	2.1

The audit meets AMD requirements. Average Absolute Degrees Difference= 1.4

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 42i</u>
Make/Model <u>Thermo 146i</u>	Serial/AMU Number <u>1868</u>
Serial/AMU Number <u>1809</u>	Last Calibration Date <u>February 13, 2017</u>
SRM Gas Cylinder No. <u>CAL018140</u>	Full Scale (ppm) <u>1.0</u>
Cylinder Conc. (ppm) <u>48.79</u>	Cylinder Gas Expiry Date <u>March 28, 2019</u>

COMMENTS: Gas has ~50ppm SO2

Auditor: Shea Beaton Date: February 14, 2017

Operator Signature: [Signature] Location: McIntyre Center Edmonton

Company: Maxxam **Operator:** Mike

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

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)

SO ₂		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		SO ₂ Analyzer	
Audit Calibrator		Make/Model	<u>Themro 43i</u>
Make/Model	<u>R&R MFC 201</u>	Serial/AMU Number	<u>1623</u>
Serial/AMU Number	<u>1690</u>	Last Calibration Date	<u>January 31, 2017</u>
SO ₂		Full Scale (ppm)	<u>1.0</u>
SRM Gas Cylinder No.	<u>CAL016625</u>	Expiry Date	<u>January 5, 2019</u>
Cylinder Conc. (ppm)	<u>98.07</u>		

COMMENTS: Analyzer verified prior to audit

Auditor: Shea Beaton Date: February 14, 2017
Operator Signature: [Signature] 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:	Flow Measurement Device:
Make/Model: <u>Thermo146i</u>	Make/Model: <u>Bios DC-2</u>
Serial Number: <u>1809</u>	Serial Number: <u>Bios D</u>
Last Verification Date: <u>February 2, 2016</u>	Temp. °C: <u>24.5</u>
Gas Type: <u>SO2</u> Conc. <u>98.07</u>	B.P. <u>702mmHg</u>
Cylinder Number: <u>CAL016625</u>	

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	0.01595	125.507	49.6
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 Date: February 2, 2016
 Operator Signature: *[Signature]* 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: AI Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	0.00755	282.889	9.67
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: AI Clark
 Operator Signature: *AI Clark*

Date: December 16, 2014
 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 (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH4	C3H8			CH4	C3H8
2583	0.00	0.00	0.00	0.02145	46.621	597	213
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: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration C3H8 manufacturers tolerance 1.1%
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Shea Beaton Date: January 19, 2016
Operator Signature: _____ Location: McIntyre Center Edmonton

***APPENDIX IV
REPORT CERTIFICATION FORM***

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
YES	NA
Company Name (if applicable)	Industrial Operation Name (if applicable)
Peace River Area Monitoring Program Committee	Three Creeks 842b 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.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 19, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u>	Project #: <u>8449-2017-05-80-C</u>
Site: <u>Three Creeks 842b Station</u>	Contact: <u>Lily Lin</u>

Level 0 Preliminary Verification	<u>Maram Ghaleb</u>	Date <u>June 14, 2017</u>
Level 1 Primary Validation	<u>Maram Ghaleb</u>	Date <u>June 14, 2014</u>
Level 2 Final Validation	<u>Maram Ghaleb</u>	Date <u>June 19, 2017</u>
Level 3 Independent Data Review	<u>CSA-Lin</u>	Date <u>June 19, 2017</u>
Post-Final Validation	<u>NA</u>	Date <u>NA</u>

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.